COMPETITION COMMISSION OF INDIA

Case No. 39 of 2018

In Re:

Mr. Umar Javeed	**Informant No. 1**
Ms. Sukarma Thapar	**Informant No. 2**
Mr. Aaqib Javeed	**Informant No. 3**

And

Google LLC	**Opposite Party No. 1**
Google India Private Limited	**Opposite Party No. 2**

CORAM:
Mr. Ashok Kumar Gupta
Chairperson

Ms. Sangeeta Verma
Member

Mr. Bhagwant Singh Bishnoi
Member

Present

For Google LLC and Google India Private Limited **(Opposite Parties/ Google)**	:	Dr. Abhishek Manu Singhvi and Mr. Arun Kathpalia, Senior Advocates with Mr. Sameer Gandhi, Ms. Hemangini Dadwal, Mr. Ravisekhar Nair, Mr. Toshit Shandilya, Mr. Parthsarathi Jha, Mr. Mohith Gauri and Ms. Atish Ghoshal, Advocates along with Ms. Auraellia Wang, Mr. Thomas Bohnett and Ms. Aditi Gopalkrishnan, Representatives of the Opposite Parties

Order under Section 27of the Competition Act, 2002

1. The present Information has been filed by Mr. Umar Javeed, Ms. Sukarma Thapar and Mr. Aaqib Javeed (the, '**Informants**') under Section 19(1)(a) of the Competition Act, 2002 (the, '**Act**') against Google LLC and Google India Private Limited (collectively, '**Opposite Parties**'/ '**Google**'), alleging *inter alia* abuse of dominant position by Google in the mobile operating system related markets in contravention of the provisions of Section 4 of the Act. The Informants are stated to be consumers of the Android based smartphones.

About the OPs

2. Google LLC, formerly Google Inc., is stated to be a Delaware limited liability company and wholly owned subsidiary of Alphabet Inc. (Alphabet), a holding company. Google provides a variety of information technology related services, with a principal focus on search, advertising, operating systems, platforms, and enterprise. Google offers an internet search service. Google's search service is available on websites (such as www.google.com), through partner sites that include Google search technology, and as an application/ app. Google provides advertising solutions to help businesses market and advertise their products. Google's core business activities concern Chrome, Gmail, Google Drive, Google Maps, Android, Google Play, Search, and YouTube.

3. Further, Google India Private Limited ('Google India') is an indirect subsidiary of Google LLC (and an indirect wholly owned subsidiary of Alphabet Inc.). Since 01.04.2016, Google India has been stated to be a non-executive reseller of online advertising space in India, appointed by Google Asia Pacific Pte. Ltd., Singapore (prior to that time it was the non-exclusive reseller of online advertising space appointed by Google Ireland Limited). In its capacity as a reseller, Google India undertakes marketing and promotion activities for certain Google products that are monetized using Google advertisements. In addition, it also provides a limited set of Information Technology Services ('IT services') and Information Technology Enabled Services ('ITES') to other group companies.

Facts as stated in the Information

4. The Informants stated that Android is an open-source mobile OS *i.e.,* it can be freely used and developed by anyone. Android Open Source Project (AOSP) is the fundamental Android source code subject to a basic license. The majority of smartphones and tablet manufacturers in India were stated to use the Android operating system in combination with a range of Google's proprietary applications and services *i.e.*, the Google Mobile Services (GMS).

5. The Informants further averred that GMS is a collection of Google applications and Application Programme Interface (APIs) that help support functionality across devices. As per the Informants, GMS includes wide range of Google apps such as Google Maps, Gmail, and YouTube which are available only through GMS and cannot be downloaded separately by device manufacturers. In order to obtain the right to install these applications and services on their Android devices, manufacturers need to enter into certain agreements with Google. The Informants also alleged that end-users cannot avail such services directly.

6. The Informants further stated that depending upon which "Android" device OEMs/ device manufacturers want to offer, they have to sign one or more agreements *i.e.,* (a) *Android without GMS*: If an OEM wants to manufacture a 'bare' Android device, it needs to only pass technical tests and accept the Android License Agreement but in bare Android devices, OEMs are not permitted to include any of the GMS such as Google Maps, Gmail and YouTube, and (b) *Android with GMS*: In order to obtain GMS, an OEM has to enter into two additional agreements with Google (i) Mobile Application Distribution Agreement ("MADA") and (ii) Anti Fragmentation Agreement ("AFA").

7. The Informant also delineated four distinct relevant markets *i.e.,* (i) Licensable Smart Mobile OS; (ii) App Stores for Android Mobile OS; (iii) Online Video Hosting Platform ('OVHP'); and (iv) Online General Web Search Service. It was

also stated that since conditions of competition are homogeneous across India, 'India' would be the relevant geographic market.

8. Adverting to the abusive conduct, the Informants have alleged that Google engaged in different kinds of anti-competitive practices, either in the market in which they are dominant or in separate markets, with the aim of cementing Google's dominant position in Online General Web Search Services and Online Video Hosting Platform (through YouTube). In this regard, the Informants essentially made the following allegations:

    i. Google mandates smartphone and tablet manufacturers to exclusively pre-install Google's own applications or services in order to get any part of GMS in smartphones manufactured in/ sold in/ exported to/ marketed in India. Such conduct was claimed to have hindered the development and market access of rival mobile applications or services thereby violating Section 4 read with Section 32 of the Act.

    ii. Google ties or bundles certain Google applications and services (Such as Google Chrome, YouTube, Google Search, *etc*.) distributed on Android devices in India with other Google applications, services and/ or Application Programming Interfaces (APIs) of Google. This conduct illegally prevented the development and market access of rival applications and services in violation of Section 4 read with Section 32 of the Act.

    iii. Google prevents smartphone and tablet manufacturers in India from developing and marketing modified and potentially competing versions of Android (so-called "Android forks") on other devices. This conduct restricted access to innovative smart mobile devices based on alternative, potentially superior versions of the Android operating system in contravention of Section 4 read with Section 32 of the Act.

Directions to the Director General (DG)

9. Based on the material available on record, the Commission, *vide* its order dated 16.04.2019, formed a *prima facie* view that Google has contravened various provisions of Section 4 of the Act. Accordingly, the Commission directed the DG to cause an investigation to be made into the matter under the provisions of Section 26(1) of the Act.

10. Accordingly, the DG submitted confidential version of the Investigation Report on 29.06.2021 and further non-confidential version of the Investigation Report on 29.09.2021. Subsequently, on 03.11.2021, the DG submitted revised non-confidential version of the Investigation Report, addressing certain issues highlighted by Google.

Investigation by the DG

11. The DG during its investigation has sought information/ replies from Google as well as various third parties in respect of various products and markets involved. These third parties *inter alia* include mobile handset manufacturers (both Indian & foreign brands) who install Android OS and Google apps & services in their handsets; third parties who are active in the Indian market relating to app stores for Android OS, online general web search service and web browser; key players in the online video hosting platform; key app developers in India, *etc.*

12. The Investigation has delineated five relevant markets for purpose of determination of issues at hand. These are market for licensable OS for smart mobile devices comprising of Smartphones & Tablets in India, market for App Store for Android smart mobile OS in India, market for General web search services in India, market for non-OS specific web browsers in India and market for online video hosting platform (OVHP) in India. The DG also found Google to be dominant in the above-mentioned relevant markets. Further, keeping in view the other apps & services which are part of core apps as per MADA, the DG also identified certain other associated relevant markets in the Investigation Report.

13. After examining the alleged conduct of Google, the DG has concluded that:

13.1. preinstallation of entire GMS suite under MADA amounts to imposition of unfair condition on the device manufacturers and thereby infract provisions of Section 4(2)(a)(i) and Section 4(2)(d) of the Act;

13.2. Google by making preinstallation of Google's proprietary apps (particularly Google Play Store) conditional upon signing of AFA/ ACC for all Android devices manufactured/ distributed/ marketed by device manufacturers, has reduced the ability and incentive of device manufacturers to develop and sell devices operating on alternative versions of Android, i.e., Android forks, and thereby limited technical or scientific development to the prejudice of the consumers, in violation of the provisions of Section 4(2)(b)(ii) of the Act.

13.3. Google has perpetuated its dominant position in the online search market resulting in denial of market access for competing search apps in contravention of Section 4(2)(c) of the Act.

13.4. Google has leveraged its dominant position in Play Store to protect its dominant position in online general search in contravention of Section 4(2)(e) of the Act.

13.5. Google has abused its dominant position by tying up of Google Chrome App with Play Store and thereby violated provisions of Section 4(2)(e) of the Act.

13.6. Google has abused its dominant position by tying up of YouTube App with Play Store and thereby violated provisions of Section 4(2)(e) of the Act; and

13.7. In view of the Google's Play store policies being one-sided, ambiguous, vague, biased, and arbitrary; unilateral decision to modify Developer Terms *i.e.* DPP and DDA by Google; suspension from the Play Store without any cogent reason; losses suffered by third parties app developers due to the arbitrary conduct on part of OPs etc., the DG concluded that Google's behaviour, including the terms and conditions, amounts to the imposition of an unfair or discriminatory condition, limiting and restricting the technical

and scientific development of apps to the prejudice of users, and in the denial of market access by Google in violation of Sections 4(2)(a)(i), 4(2)(b), and 4(2)(c) of the Act.

14. To sum up, Google was found to be contravening the provisions of Section 4(2)(a)(i); Section 4(2)(b); Section 4(2)(c); Section 4(2)(d) and Section 4(2)(e) of the Act, by the DG.

Consideration of the Investigation Report by the Commission

15. Having considered the Investigation Report in its meeting held on 06.10.2021, the Commission directed to forward an electronic copy of the non-confidential version of the Investigation Report to the parties, for filing their respective objections/ suggestions thereto, if any. Further, in this matter, the Commission had also set up of a Confidentiality Ring to grant full access to the confidential case records to Google. Accordingly, pursuant to the order of the Commission dated 06.10.2021, an electronic copy of the confidential version of the Investigation Report was also forwarded to Google through its one of the authorised representative(s) with the stipulation that the access thereto shall be limited *only* to the approved representatives of Google, as detailed in the said order.

16. The parties were also allowed to file their respective objections/ suggestions, if any, to the Investigation Report by 05.11.2021 along with a brief synopsis thereof, after mutually sharing copies thereof in advance under intimation to the Commission. The parties were also given liberty to file responses to each other's objections/ suggestions, after mutual exchange in advance under intimation to the Commission. Thereafter, multiple extensions were granted for filing the respective objections/ suggestions. The respective objections/ suggestions of the parties have since been received and taken on record.

17. Further, the Commission, *vide* its order dated 17.06.2022, also directed that the parties may appear for a final hearing on the Investigation Report, on 04.08.2022

at 10:30 A.M through Video Conference (VC) mode. The parties were allowed to appear either in person or through their duly authorised representatives, within the meaning of Section 35 of the Act, on the date of hearing. Google was also given the liberty to make its submissions on the quantum of penalty which may be levied by the Commission in the event Google is to be held in contravention of the provisions of the Act, during the oral hearing as also in the written objections.

18.   The learned senior counsel appearing on behalf of Google made brief arguments on the merits of the matter on 04.08.2022. Further, as prayed by the learned counsel, the Commission scheduled the next dates of oral hearing on 31.08.2022 and 01.09.2022. The learned senior counsel(s) appearing on behalf of Google made further submissions on 31.08.2022 and 01.09.2022. As the hearing could not be completed, the matter was adjourned to 02.09.2022 at 10:00 a.m. at the request of Google, for remainder arguments. The learned senior counsel appearing on behalf of Google, concluded the arguments on 02.09.2022. After conclusion of hearing, the Commission invited the learned senior counsel appearing on behalf of Google to make arguments on the quantum of penalty which may be levied by the Commission in the event Google is to be held in contravention of the provisions of the Act. The learned senior counsel sought leave of the Commission to make written submissions on this aspect. Accordingly, the Commission allowed Google to file written submissions on this aspect, as prayed for, and granted time of two weeks *i.e.,* till 16.09.2022 to file the same. Further, Google was also allowed to file brief synopsis of its oral arguments, by 16.09.2022, if so desired. Having heard the learned senior counsel appearing on behalf of Google, the Commission further decided to pass an appropriate order in due course.

19.   The submissions of Google in respect of penalty as well as brief synopsis of its oral arguments have since been received.

Replies/objections/suggestions by the Parties

Reply filed by the Informants

20. The Informants, *vide* a letter dated 22.02.2022, submitted that they do not having any objections/suggestions to the Investigation Report. Further, *vide* an e-mail dated 28.06.2022, the Informants submitted that they do not have any further written or oral submissions pertaining to the Investigation Report.

Reply filed by Google

21. Google filed its response to the Investigation Report on 25.07.2022 and the same shall be referred to and dealt with while analysing the matter on merit.

Analysis and findings of the Commission

22. Before adverting to the matter on merits, the Commission notes that the allegation in the present matter primarily relates to the practices of Google *w.r.t.* licensing of Android mobile operating system and various proprietary mobile applications of Google. Therefore, it would be appropriate to elaborate the functioning of the Android OS ecosystem and Google's activities in the same.

Android Operating System

23. Smart mobile devices need an operating system (OS) to run applications (apps) and programs. A mobile OS provides a mobile device with its underlying functionality, such as user interface, motion commands, button controls and facilitates the operation of the device's features, such as the microphone, camera, and GPS. The mobile OS is the interface between the mobile device hardware, such as the smartphone handset or tablet and the applications that run on the device like e-mail or streaming apps. The mobile OS is pre-installed on mobile devices.

24. Android is one such mobile operating systems which was acquired by Google in 2005. Google released the first Android version inside Google and the Open

Handset Alliance ('OHA') in 2007. This alliance was established by Google to garner support of other industry players i.e., OEMs, hardware manufacturers, mobile network operators, app developers, *etc.*, to increase acceptance of Android. The first public version of Android was released in beginning of 2008.

25.   Google has stated that it makes the source code of Android available for free *via* the Android Open-Source Project ('AOSP') and under an open-source licence known as 'Apache licence'. The Apache License is stated to be a permissive free software license written by the Apache Software Foundation (ASF) which allows users to use the software for any purpose, to distribute it, to modify it, and to distribute modified versions of the software under the terms of the license, without concern for royalties. Thus, anybody can access the AOSP source code and create its modified version. However, development of the source code of the Android platform is mainly done by Google itself. Also, the governance model of Android is run by Google, which determines the roadmap, decides on features and new releases as also tightly controls the compatibility of derivatives.

26.   It is further noted that since April 2011, Google has released several new major OS versions of the Android, with many more intermediate and minor versions updates. Each version of Android introduces new APIs, bug fixes and security fixes that bring new features. A user of old version of Android may be deprived of new Apps as new apps will require a more recent version of Android. OEMs also invest considerable resources for incorporating Android upgrades and new releases in their devices.

27.   It is also noted that Google owns the intellectual property rights (IPR) to the Android OS. As per the branding guidelines the 'Android' name and the Android logo, are property of Google LLC and not part of the assets available through the Android Open-Source Project. Further, as per the guidelines, the use of the 'Android' trademark on hardware, packaging or marketing materials of device is restricted to Android-compatible devices only after signing Anti-Fragmentation Agreement ('AFA')/ Android Compatibility Commitment ('ACC').

28. Since, Google operates/ manages the Android OS as well as licences its other proprietary applications and OEMs use this OS and Google's apps in their smart mobile devices, they enter into multiple agreements to govern their rights and obligations. Some of the important agreements entered into by Google with OEMs are as under:

    A.   Mobile Application Distribution Agreement ('MADA')

    B.   Anti-fragmentation Agreement ('AFA')

    C.   Android Compatibility Commitment Agreement ('ACC')

    D.   Revenue Sharing Agreement ('RSA')

    E.   Mobile Service Distribution/ Placement Bonus Agreement

29. The key features of these agreements are as follows:

Mobile Application Distribution Agreement ('MADA')

30. MADA grants licence to OEMs for free distribution of Google's proprietary apps referred to as Google Mobile Services or GMS (*viz.* Google Play Store, Gmail, Google Maps, Google Search, Google Chrome, YouTube, Google Play Services, *etc.*) to the end users within the specified territories. Further, these apps of Google are offered in the form of a 'bundle', *i.e.*, if the OEM wishes to install even one app out of the GMS, it has to pre-load the full suite of apps on the devices.

31. MADA also prescribes placement requirements of Google applications on the device's panel/screen. As per MADA, Google search widget, Google Play client icon and a folder labelled 'Google' with Google icon containing mandatory apps have to be pre-loaded on the default home screen of the device. All other Google apps have to be placed not below the one level below the default home screen. Google has discretion to change the list of mandatory Google apps that must be pre-installed.

32. In addition, the earlier version of MADA (*i.e.*, till 2014, as claimed by Google) also required Google Search to be set as a default search provider for all web

search access points *i.e.,* 'assist', 'search', 'voice search' and 'Web Search' between 2011 to 2017. This requirement was changed subsequently.

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34. The licence under the MADA is also subject to the OEM being in compliance with a valid and effective Anti-fragmentation Agreement (AFA) / Android Compatibility Commitment (ACC). ████████████████████

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████████████████████ The final software build on devices must pass the Compatibility Test Suite ('CTS') prior to launch. In addition, other devices manufactured by the OEMs, running on Android, █████████████████

████████████████████████ must also pass the CTS prior to company's commercial distribution of such devices. The OEMs are prohibited from taking any actions and/ or allowing/ encouraging any third party to take any action that may cause or result in the fragmentation of Android.

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37. MADA also prescribes that Google may terminate the MADA and stop licensing its apps, if the OEM breaches any obligation in the MADA relating to device compatibility. Such obligations include the obligation not to *'take any actions that may cause or result in the fragmentation of Android'* and the obligation for all devices running Android including those on which a hardware manufacturer does not pre-install Google's apps, to pass the CTS.

Anti-fragmentation Agreement ('AFA')

38. The Investigation has revealed that Google introduced AFAs in 2008-09 and the same was succeeded by ACC. Further, while ACC was signed in the year 2017, but there was an overlap in terms of period between the AFA and ACC, as both these agreements ran concurrently in case of majority of the OEMs.

39. The AFA places following obligations on an OEM:

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███████████████████████████████████ The OEMs are not permitted to manufacture/ develop hardware for themselves or for any third party which is not Android compatible. ████████████████████████████████████
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42. In respect of India, the DG has stated that Google has entered into AFAs with almost all OEMs manufacturing /distributing Android smart mobile devices. The AFAs entered into with the aforesaid OEMs have been in operation for different periods from January 2011 onwards. The DG also identified the specific period during which the AFAs have been operational with different OEMs. It has also been stated that the term of AFA is normally ████████ which has been extended/ renewed periodically.

43. According to Google, the AFA is aimed to ensure that Android does not become fragmented. The main objective of AFA purportedly is to define a base line implementation of Android which is compatible with the third-party apps written by app developers.

Android Compatibility Commitment Agreement ('ACC')

44. Google entered into ACCs with most of the OEMs from 2017 onwards, concomitantly with AFA. The terms and conditions of ACC were more or less similar to that of AFA with few exceptions. ACC specifically provides that:

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45. Under the AFA/ ACC, the OEMs are *inter alia* restrained from manufacturing, distributing, or marketing devices based on Android forks (*i.e.,* modified versions of AOSP code of Android which do not meet the requirements of CDD and CTS). Google licenses its apps only to those OEMs who agree to requirements of AFA/ ACC and whose devices meet the Android compatibility tests. Accordingly, Google's applications or GMS (*viz.* Google Play Store, Gmail, Google Maps, Google Search, Google Chrome, YouTube, Google Play Services, *etc.*) are not available on Android fork devices.

46. There are some permitted exceptions under ACC, which are as follows:

[redacted]

47. In nutshell, ACC allows OEMs to manufacture devices or components for devices for a third-party device that are not Android Compatible Devices as long as such devices are marketed under a third-party brand and the OEM does not market such devices. [redacted]

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Revenue Sharing Agreement ('RSA')

48.   Google entered into RSA with prominent OEMs ████████████████████████

████████████████████████ The RSA *inter-alia* provides for exclusive pre-installation of Google Search and Google Assistant in 'qualified device' of OEMs. The agreement forbids the OEMs from preloading or otherwise installation of any third-party application, bookmark, product, service, icon, launcher, third party hot-word in the qualified device that is an alternative service to Google Search and Google Assistant. Google shared search advertising revenues with OEMs, provided that the OEMs did not pre-install any competing general search service on any device within the defined portfolio of smart devices. If an OEM pre-installs such a service on any device, it loses the revenue share payments not only for that particular device but also for all the other devices in its portfolio on which another general search service may not have been pre-installed.

Mobile Service Distribution/ Placement Bonus Agreement

49.   Google entered into Mobile Service Distribution/ Marketing Agreement with a number of OEMs ██████████████████████████████

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50.   After explaining the relevant aspects of the Android ecosystem of Google, now, the Commission proceeds to examine the matter on merits.

Relevant Market and Assessment of Dominance

51.   The instant matter pertains to allegations of abuse of dominant position by Google in violation of Section 4 of the Act. The assessment framework under Section 4 requires delineation of relevant market(s) wherein the concerned entity operates followed by assessment of the market power *i.e.,* whether such entity holds a dominant position. Finally, the conduct of the dominant entity is examined to assess whether it is abusive in nature, in terms of various provisions of Section 4(2) of the Act.

52.   Relevant market has been defined under Section 2(r) of the Act, as "*the market which may be determined by the commission with reference to the relevant product market or the relevant geographic market or with reference to both the markets*." Thus, delineation of relevant market generally has two dimensions *i.e.,* relevant product market and the relevant geographic market. Similar connotation can be derived from Section 19(5) of the Act.

53.   Section 2(t) of the Act defines 'relevant product market' as "*a market comprising all those products or services which are regarded as interchangeable or substitutable by the consumer, by reason of characteristics of the products or services, their prices and intended use*." Moreover, Section 19(7) of the Act provides a list of factors to be considered by the Commission for determination of the relevant product market, which includes physical characteristics or end use of the goods, price of goods or services, consumer preferences, *etc.*

54. Relevant geographic market has been defined under Section 2(s) of the Act as "*a market comprising the area in which the conditions of competition for supply of goods or provision of services or demand of goods or services are distinctly homogenous and can be distinguished from the conditions prevailing in the neighbouring areas*". In this regard, Section l9(6) of the Act lists various factors which may be given due regard to by the Commission while determining the relevant geographic market *viz.* regulatory trade barriers, local specification requirements, language, transport costs, consumer preferences, *etc.*

55. As observed by the Hon'ble Supreme Court of India in Civil Appeal No. 6691 of 2014 titled *Competition Commission of India v. Co-ordination Committee of Artists and Technicians of WB. Film and Television and Ors*., market definition is a tool to identify and define the boundaries of competition between firms. It serves to establish the framework within which competition policy is applied by the Commission. The main purpose of market definition is to identify in a systematic way the competitive constraints that the undertakings involved face. Further, the objective of defining a market in both its product and geographic dimension is to identify those actual competitors of the undertakings involved that can constrain those undertakings behaviour and of preventing them from behaving independently of effective competitive pressure.

56. After delineation of the relevant market(s), the next step for assessing the alleged abuse of dominant position in terms of Section 4 of the Act, is to examine whether the concerned entity holds dominant position in the relevant market(s), so identified. The explanation to Section 4 of the Act provides that "dominant position" means a position of strength, enjoyed by an enterprise, in the relevant market, which enables it to operate independently of competitive forces prevailing in the relevant market; or affect its competitors or consumers or the relevant market in its favor. Further, Section 19(4) of the Act lists out various factors which are to be considered while determining, whether an enterprise enjoys a dominant position for the purposes of Section 4 of the Act.

57. Based on its assessment in the backdrop of the abovementioned statutory scheme, the DG in its Investigation Report has delineated five relevant markets *i.e.,*

   a. *Market for licensable OS for smart mobile devices comprising of Smartphones & Tablets in India*

   b. *Market for app store for Android smart mobile OS in India*

   c. *Market for general web search services in India*

   d. *Market for non-OS specific web browsers in India*

   e. *Market for online video hosting platform (OVHP) in India.*

58. The DG has also found Google to be dominant in all the above-mentioned relevant markets.

59. Further, as per MADA, Google requires OEMs to compulsorily pre-install entire GMS suite comprising of Search, Chrome, Play Store, YouTube, Gmail, Drive, Map & Navigation service, Video & Music on demand, Photo service, Chat & Video calling service in compatible Android devices. In the present case, the DG has delineated five relevant markets, as mentioned above which pertains to Google's products and platforms such as Android, Google Play, Google Search, Chrome and YouTube. Keeping in view the other apps & services which are part of core apps as per MADA, the DG has discussed seven *other associated relevant markets i.e.,* market for e-mail service in India; market for map & navigation service in India; market for cloud storage service in India; market for video on demand service in India; market for music on demand service in India; market for photos service in India; and market for chat and video calling service in India.

60. The reasoning and findings of the DG, submissions of Google on these aspects and the analysis of the Commission, in this regard, is given in succeeding paragraphs.

A. Market for licensable OS for smart mobile devices in India

61. The Commission notes that Operating Systems (OSs) are complex software products that control the basic functions of the device on which it is installed and enable the users to make use of such device. Accordingly, smart mobile OS are designed to support the functioning of smart mobile devices and other compatible software applications (apps). It enables the user to make use of such mobile device and run application software on it. Mobile OS is a crucial part of any smart mobile device. Moreover, smart mobile OSs typically provide a graphical user interface ('GUI'), application programming interfaces ('APIs'), and other ancillary functions. These are required for the operation of a smart mobile device and enable new combinations of functions to offer richer usability and innovations. Further, the mobile OS comes pre-installed on mobile devices.

Relevant Market

62. The Commission notes that the DG has examined various aspects for the purpose of delineating relevant market related to mobile operating systems. Based on the analysis of the provisions of the Act and submissions of the parties, the DG has concluded that operating system for personal computers (PC), feature phone or basic phone, as well as non-licensable smart phone OS are distinct products as compared to licensable OS for smart mobile devices and thus, do not belong to the same relevant market. Accordingly, the first relevant market delineated by the DG, in the present case, is the '*market for licensable OS for smart mobile devices comprising of Smartphones & Tablets in India*'. The observations of the Commission in this respect are as follows:

   a. *OS for PCs/ Laptops vis-a-vis OS for mart mobiles/ Tablets OS*

63. The DG has succinctly brought out the difference between the OSs for personal computers *vis-à-vis* smart mobile devices to assess whether they belong to same relevant market. The Commission notes that from a demand side perspective,

OEMs require smart mobile OSs to power their smart mobile devices and cannot use PC OSs for that purpose. *E.g.,* Google has developed Chrome OS, for licensing to computer manufacturers to produce PCs/ laptops whereas, Android OS is licensed for smart mobile devices. Google does not license Chrome OS for smartphones.

64. Further, smart mobile OSs, also require functionalities that are specific to smart mobile devices and are different from those of PC/ laptop OSs *viz.* in terms of touchscreen, processing capabilities, smaller screen sizes, memory, display, and power management, wireless functions, and apps that are better suited for simpler mobile devices rather than PC OSs which are designed for higher performance CPUs, larger screens and greater hard disc storage capabilities. The DG has also stated that in most cases, the applications developed in the mobile environment are also specific to the mobile domain and not shared with the PC environment and vice versa. Thus, considering these differences, from a demand side perspective, smart mobile OEMs would require a smart mobile OSs to power their devices and PC OSs would not be useful for the same.

65. In this context, it is also apposite to refer to the submission made by One97 Communications Limited (Paytm), which is an app developer and financial technology company. The relevant extracts from the submission are provided hereunder:

> '*An OS is a system software product that controls the basic functions of any device and enables users to use the device and run software on it. The OS communicates with the devices' hardware, and allows other programs – including apps - to run on it. Apps are essentially a type of software through which users can access specific content and services. Apps are optimised for the characteristics of the devices on which they are available, including with respect to features such as text input, screen size or convenience of touch-based interface. Therefore, when software developers create apps, they are required to write the code for the app and compile it separately for each OS.*
>
> ***OSs developed for different types of devices, such as PCs, smart phones and feature phones are distinct from each other. Smart mobile OSs combine the features of a PC OS (such as program execution, error***

detection and handling, etc.) with additional features (including touchscreen, cellular services, etc.)'

(Emphasis supplied)

66. From a supply side perspective also, it is observed that though PC OS developers may shift to smart mobile OS, but it would require considerable investment in Research & Development (R&D) and also lead time. For example, Microsoft Corporation (India) Pvt. Ltd. (Microsoft) a leading Windows OS manufacturer for PC developed a separate Windows OS specifically designed to run on smart mobile devices in 2010. In this regard, it is apt to refer to the relevant extract of Microsoft's submission to the DG:

> *'...**Microsoft's estimates, it spent approximately** ▮▮▮▮▮▮▮ **a year on R&D activities related to Windows Phone OS**, while it was active in the space**, in addition to the** ▮▮▮▮▮▮**, it spent to acquire the device and service business of Nokia**...'*

(Emphasis supplied)

67. The DG has also noted that the smartphone OSs and tablet OSs belong to the same product market. In this regard, the Commission also notes that smartphone OSs and tablet OSs belong to the same product market due to similarity in device architecture, as discussed above. In this context, the Commission notes the submission made by Microsoft, which has stated that its Windows Phone OS run on both smart phone as well as smaller tablets. The relevant extract of the said submission is as follows:

> *'...**Windows Phone OS, which was designed to primarily run-on smart phone and smaller tablets is different** and distinct from the classic Windows OS, which is designed to run on larger devices such as Desktop, laptops...'*

(Emphasis supplied)

68. Based on the above analysis, the Commission concurs with the view of the DG that PC OSs do not belong to the same product market as smart mobile OSs.

  b.   Basic or feature phone OSs vis-à-vis smart mobile device OSs

69.   The DG has also examined whether basic or feature phone OSs are different from smart phone OSs. The DG noted that that the mobile OSs for smart mobile devices are distinguishable from other mobile devices such as basic and feature phones because the mobile OSs for smart mobile devices unlike feature phones, are designed to support computer like features.

70.   In this context, the Commission notes that a feature phone can be described as a basic cell phone with a much smaller screen, more limited text entry mechanism (usually an alpha-numeric keyboard), and relatively limited computing capabilities than a smartphone. A feature phone runs on proprietary firmware, with third-party software support through a platform. A feature phone may or may not include internet capabilities (where internet capabilities are available, the features are very basic – email client and web browser with limited capabilities). On the other hand, smart phones have advanced features which *inter alia* include high-resolution touch screen display, Wi-Fi connected to internet, web browsing capabilities *etc.* The ability to install and use other software applications to access services/content is also an important characteristic which distinguishes smart devices from basic mobile devices. Due to the special features, the price of smart mobile device is comparatively higher than that of basic or feature mobile device. Thus, from the end consumer's point of view, the smart mobile devices cannot be interchanged/ substituted with the basic or feature mobile device due to the distinct characteristics, functionality, and consumer preference.

71.   Similarly, from the point of view of Mobile OEMs, a feature phone OS cannot be installed on smart mobile device. Therefore, the Commission is of the view that the OS of basic or feature phones cannot be substituted with the OS of smart mobile device.

72.   Further, from supply side perspective also, the suppliers of feature phone OS are different from smart phone OS suppliers as the development of a smart mobile OS requires significant time and resources. Even if the developer in question has

already developed a basic and feature phone OS, it will take significant investment both monetary and non-monetary to develop a smart phone OS. Thus, there are substantial barriers of entry associated with development of smart mobile OS. The Investigation has also not revealed any instance where a feature phone OS developer has launched a smart phone OS, whereas on the other hand, some smart phone OS developers *viz.* Microsoft Windows Phone OS, have exited the market.

73. In this context, it is relevant to note the submission made by one of the third parties *i.e.,* GOQii (a healthcare platform). The relevant excerpt from its reply is reproduced here for the sake of convenience:

> '...***KaiOS will not be considered a part of the same market as Android OS,*** *since its is feature phone OS and not a smartphone OS and only offers some limited functionalities...*'

(Emphasis supplied)

74. Based on the foregoing analysis, the Commission finds that basic or feature phone OSs are different from smart phone OSs and thus, are not substitutable.

   c.   Non-licensable OS does not form part of the same relevant market

75. Before adverting to this issue, the Commission, based on the information available on record, notes that smart mobile device OSs can be broadly categorised into two groups *viz.* licensable and non-licensable. As the name suggests, licensable smart mobile device OSs are those which are available for licensing by the OS developer/ owner with or without a licensing fee. Google's Android OS is a licensable smart mobile device OS as it is made available by Google for licensing to third party device OEMs *i.e.,* Samsung, Xiaomi, Vivo, *etc*. Some other licensable smart mobile device OSs are Windows Phone OS, Amazon's Fire OS, *etc*. The other category, *i.e.*, non-licensable smart mobile device OSs, includes those that are not licensed by the OS owner and thus, are not available to third party OEMs for installation in their respective smart devices. The prime example of this category is iOS, which is developed by Apple Inc., a

vertically integrated OEM, for captive use in their own smart mobile devices. In other words, Apple does not license its iOS to third party smart mobile device OEMs and uses the same in manufacturing its own smart mobile devices *i.e.,* iPhone and iPad. Another example in this category was Blackberry OS which was used captively by Blackberry in its devices.

76. In this regard, Google has contended that Android competes directly against 'closed' mobile OSs like Apple's iOS, as well as other OSs and platforms. The DG has examined this issue in detail for the purpose of delineation of relevant market and concluded that all licensable smart mobile OSs belong to the same product market, but non-licensable OS do not belong to the same relevant market.

77. The DG has observed that Apple's iOS smart mobile devices are comparatively expensive products, and the consumers may not switch to or consider switching to these OS from a typical smart device installed with other licensable OS (*viz*. Google's Android, Windows OS, Fire OS, Symbian OS *etc.*). In this regard, the DG has also referred to the comparison of the average retail selling price for iOS and Android smart phones in India between 2009 and 2019 and observed that iPhone does not seem to offer any competitive constraint on Android Phones in the Indian smart mobile phone market.

78. In this relation, the Commission observes that from a demand side perspective, third party smart device OEMs *viz.* Xiaomi, Vivo, Oppo, Samsung, *etc.* can only install those smart mobile device OSs in their respective devices, which are available for license by the OS owner/ developer (*viz.* Google's Android, *etc.*). Such OEMs cannot obtain non-licensable OSs (*viz.* Apple's iOS and BlackBerry OS) as the same is not available for license by the OS owner. Thus, from the perspective of the OEMs, switching to such non-licensable OSs is not an option and thus cannot be considered as a potential substitute to licensable OSs.

79. The Commission notes that there could be some degree of competition between iOS and Google Android devices at the level of end users of smart mobile devices

(while taking decision as to which device to buy); however, it does not mean that licensable and non-licensable smart mobile OSs can be seen as substitutes from an OEM perspective. The allegations in this matter relates to imposition of restrictions on the OEMs and therefore, the market definition should duly account for the same and reflect the market realities.

80. In this context, it is important to note the following submissions of few third parties:

    80.1.   One97 Communications Limited (Paytm) has submitted as under:

> *'Apple iOS: iOS is a non-licensable OS, which has been developed by a vertically integrated OEM, Apple, for captive use on their own smart mobile devices.* A similar OS was the Blackberry OS which had been developed by Blackberry Limited, and is limited in its usage in the current day.
>
> *Google Android OS:* While the base version of Android is an open source OS, Google's version of Android i.e., Google Android OS, which includes certain modifications made by Google to the base version of Android, is not open source. *It can only be accessed by OEMs through a license from Google, and cannot be modified by third parties. Any app developed for Google Android OS (i.e., as per Google's specifications) is not compatible with other Android OSs and needs to be developed / tested and marketed separately.'*

(Emphasis supplied)

    80.2.   Paytm, in its reply has also highlighted the difference between the two OSs from the perspective of an app developer. Paytm has submitted that,

> *"…Without prejudice to the fact that **Android OS and iOS are not substitutable from the perspective of OEMs, from the view of app developers the major differences between an app developed for them are discussed below**:*
> *(a) **Programming language**: Android apps run on Java Kotlin languages and iOS apps run on Objective-C or Swift.*
> *(b) **Development tool kits**: While developing apps for Google's Play Store or Apple's App Store, the apps have to be integrated into the Android Application Package (APK) and Software Development Kit (SDK) of Android or iOS respectively.*

*(c) **Testing**: Testing of the apps during the development stage is different because of the simulators used – the iOS simulator is much faster than the Android one.*

*(d) **Interface**: The types and quality of iOS animations is different to those in Android.*

*(e) **Back button on the handset**: On Android OS, a back button is used to navigate back to a previous screen. Due to the lack of this button on Apple iOS app developers have indicate on the screen how users have to go back to a previous screen or if there is another way to complete this action using another interaction flow.'*

(Emphasis supplied)

80.3.   Data Ingenous Global Limited which provides mobile app development services in India stated that,

"…*The high-level differences – from App developer's perspective – between apps developed for Android OS and iOS include **different programming languages, development tool kits, testing and interface requirements, other OS specific features (such as, iOS not having a back button like Android and therefore, apps needing to be different, etc.)**…*"

(Emphasis supplied)

80.4.   CE Info Systems Pvt Ltd. (MapmyIndia), which provides digital maps and location technologies in India, stated that

"…***Each operating system requires apps to be written and compiled to work on that operating system, and to use libraries and tools which would allow apps to work, be installable and be discoverable by users of those operating systems***…."

(Emphasis supplied)

80.5.   MakeMyTrip (India) Private Limited (MakeMyTrip) which provides a wide range of travel related services and products through online and offline channels in India as well as overseas stated that,

"…***Apps developed for Android and iOS are built using different programming languages and operate on separate operating systems.*** *Hence apps for both these operating systems need to be developed separately…*".

(Emphasis supplied)

81. Thus, even from the app developer perspective also, there are multiple technical differences between Android and iOS *viz.* programming languages, development tool kits, testing and interface requirements, *etc.* The app developer cannot simply port the app developed for one OS onto another OS due to these technical differences.

82. In this regard, the following responses furnished by few third-party mobile handset manufacturers (OEMs) is also noted:

    82.1. OPPO Mobiles India Private Limited (OPPO) has stated that,

    "…***Apps developed for different OS are based on different basic OS (The Apps developed for Android OS are based on Linux OS). To state further, it is impossible to shift the apps written for Linux OS to iOS***…"

    (Emphasis supplied)

    82.2. Huawei Telecommunications (India) Company Private Limited (Huawei) has stated that,

    "…***the Developers shall customize their Apps with respect to specifications and User Interface (UI) of Android OS and other OSs. And the main difficulties are the migration cost, including migration from one ecosystem to another, and the developers need to adapt their Apps to the APIs differ from one OS to another***.'

    (Emphasis supplied)

83. The DG has also examined the judgments of the foreign jurisdictions and noted that Competition Authorities and Courts in other jurisdictions have also steadfastly opined that the licensable and non-licensable OS do not belong to the same relevant market.

84. Based on the above analysis, the Commission agrees with the findings of the DG and holds that all licensable smart mobile deice OSs are part of the same relevant market; however, non-licensable OSs do not belong to the same relevant market as that of licensable OSs.

85. Further, the DG has considered 'India' as the relevant geographic market, in relation to the market for licensable smart mobile device operating system, in accordance with the provisions of Section 2(t) read with Section 19(6) of the Act. The Commission notes that the terms & license conditions of OS for smart mobile device from the point of view of OEMs are homogeneous across the country. The Commission further notes that the number of apps that are made part of GMS suite by Google vary from country to country and Google follow different policies for licensing of OS depending on the region's legal framework & regime. Moreover, the consumer's preference, availability of mobile apps in local languages and location-based applications and services as also other specifications of smart mobile OS are uniform across the Indian geographical area. Thus, the conditions for supply and demand of smart mobile OS are homogenous and distinct in 'India'. Therefore, relevant geographic market is the territory of India.

86. In view of the aforesaid, the Commission delineates the *market for licensable OS for smart mobile devices in India* as a distinct relevant market in terms of the various provisions of the Act.

Assessment of Dominance of Google

87. The DG has examined the dominance of Google in the market for licensable OS for smart mobile devices comprising of smartphones & tablets in India. After analysis of various factors such as control of Google over Android ecosystem; requirement of Google Account; availability of large number of applications in the Play Store; large market share enjoyed by Google in the relevant market; access to huge financial resources; existence of entry barriers; lack of countervailing buying power of OEMs and end users, the DG has concluded that Android OS holds a dominant position in the relevant market of licensable operating system for smart mobile device in India since 2011. The observations of the Commission in this respect are as follows:

a) Control of Google over Android

88. The Commission notes that though Google claims that Android is an open-source project, however, Google has an important influence in the development of Android OS. Google does most of the development of the source code of the Android platform for which Google has admitted having invested a substantial amount of money. In this regard, it would be apposite to refer to the reply of One97 Communications Limited, wherein, it has stated that:

> *"…Whilst Android OS is an open-source OS, Google still holds a significant leading position vis-à-vis other Android OS providers given a number of factors, including that the governance model of Android is run by Google, which determines its roadmap, decides on features and new releases and tightly controls the compatibility of Android forks. Google unilaterally decides when the source code of the Android platform is made available and typically releases the source code of a new version of Android only after the first Google flagship device with this new version has been launched…"*
>
> **(Emphasis supplied)**

89. The Commission notes that the governance model of Android is run by Google, which determines the roadmap, decides on features and new releases. Google also controls the compatibility of derivatives of the Android OS by way of placing various restrictions on the OEMs. The source code contributions by developers other than Google are also noted to be verified and approved by people in the AOSP governance structure which are typically Google employees[1].

90. Since April 2011, Google has released several OS versions, with many more intermediate and minor versions updates. Each version of Android introduces new APIs, bug fixes, security fixes, new features, better experience to users, *etc.* Using an outdated version of Android increases the susceptibility of the device to

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[1] 'Open Governance Index- Measuring the true openness of open-source projects from Android to Webkit' (July 2011), page 16, http://www.visionmobile.com/product/open-governance-index/
As to the roles within Android, see also See 'Project Roles',
http://source.android.com/source/roles.html

malware and viruses that would be prevented by a security patch designed to address current threats. Further, running an outdated version of Android may deprive a user's ability to use new app as some apps will require a more recent version of Android. In this regard, it is noted that though OEMs are responsible for pushing updates to users' devices, however, Google provides information to help OEMs and developers to update their devices and apps to provide users with a seamless transition to the newest version of Android.

91. The Commission also notes from various responses filed by various smart mobile OEMs with the DG, that the OEMs are required to invest considerable resources for such Android upgrades.

92. It is also noted that Google owns the IPR to the Android OS and as per the *Brand Guidelines[2]*, the 'Android' name and the Android logo, are property of Google LLC and not part of the assets available through the Android Open-Source Project. Furthermore, as per the guidelines, the use of the 'Android' trademark on hardware, packaging or marketing materials of device is restricted to Android-compatible devices only. Therefore, in order to use these IPR, the OEMs must adhere to the obligations imposed under MADA that all its devices must be an Android compatible device. Accordingly, the Commission observes that Google controls the licensing of trademarks related to Android.

93. Further, as per the Android compatibility program which defines technical details of the Android platform and provides tools for OEMs to ensure developer applications run on a variety of devices, it is required that OEMs to build Android device that are compatible. For this purpose, the devices are required to comply with Android Compatibility Definition Documents ('CDD'). CDD enumerates software and hardware requirements of a compatible Android device and is published by Google from time to time. The device also must pass the

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[2] https://developer.android.com/distribute/marketing-tools/brand-guidelines

Compatibility Test Suite ('CTS'), a software suite that test the compatibility of a device is also published by Google. It is only after complying with the CDD and passing the CTS that the device of the OEM is Android compatible.

94.   Thus, the Investigation has revealed that even though the source code for the Android mobile OS is released by Google for free under an open source license, Android based device OEMs are highly dependent on Google as they have to ensure that all the hardware and software features of their smart mobile devices are compatible with the latest versions of Android released by Google from time to time, otherwise none of the apps developed by Google or third party app developers would be functional on such incompatible devices. Further, OEMs are also dependent on Google for using IPR related to Android. Thus, the Commission notes that though Android OS is an open-source project, it is actually controlled by Google.

   b)   Market Share Analysis

95.   The DG sought details of competitors of Android OS in licensable smart mobile device OS in India from Google pursuant to which Google has cited IDC quarterly report of 09.05.2019 on market share of all OSs on mobile devices (all mobile devices) sold in India from January 2014 to March 2019. After perusal of the same, it was noted that the IDC data reflects estimated share of OSs used in all types of mobile devices, irrespective of whether they are installed in a smart mobile device or the feature phones. Accordingly, the IDC data includes 'KaiOS' (light operating system for smart feature phones) and 'Other Real Time OSs' (feature phones) which are not part of the relevant market of licensable smart mobile operating system in India. Further, it also includes other non-licensable OSs *viz.* iOS and BlackBerry OS which are not part of the relevant market. Thus, the DG has noted that the IDC data cited by Google does not correctly reflect the market share of competitors in the relevant market in India. The Commission agrees with this approach of the DG for reasons elaborated above.

96. The DG has relied on the data submitted by the IDC Centre for Consultancy & Research Pvt. Ltd., on the annual shipment of Smartphones and Tablets in India over the past few years. The same is extracted below:

Table 1: Annual Shipment of Smartphones and Tablets in India (OS-wise)

Smartphones and Tablets (India shipment units in Millions)				
Year	**Android**	**iOS**	**Others**	**Total**
2011	4	0.4	6.9	11.3
Market Share (%)	35.4	3.54	61.06	100
2012	14.2	0.7	4.1	19
Market Share (%)	74.74	3.68	21.58	100
2013	44.6	1	2.5	48.1
Market Share (%)	92.72	2.08	5.2	100
2014	80	1.6	2.4	84
Market Share (%)	95.24	1.9	2.86	100
2015	101.4	2.1	3.9	107.4
Market Share (%)	94.41	1.96	3.63	100
2016	108.7	2.6	1.4	112.7
Market Share (%)	96.45	2.31	1.24	100
2017	123.8	3	0.6	127.4
Market Share (%)	97.17	2.35	0.47	100
2018	141.5	2.1	0.1	143.7
Market Share (%)	98.47	1.46	0.07	100

97. This data can also be represented graphically, as follows:

Graph 1: Market share of OS in India - Shipment

Market share of OS in India - Shipment
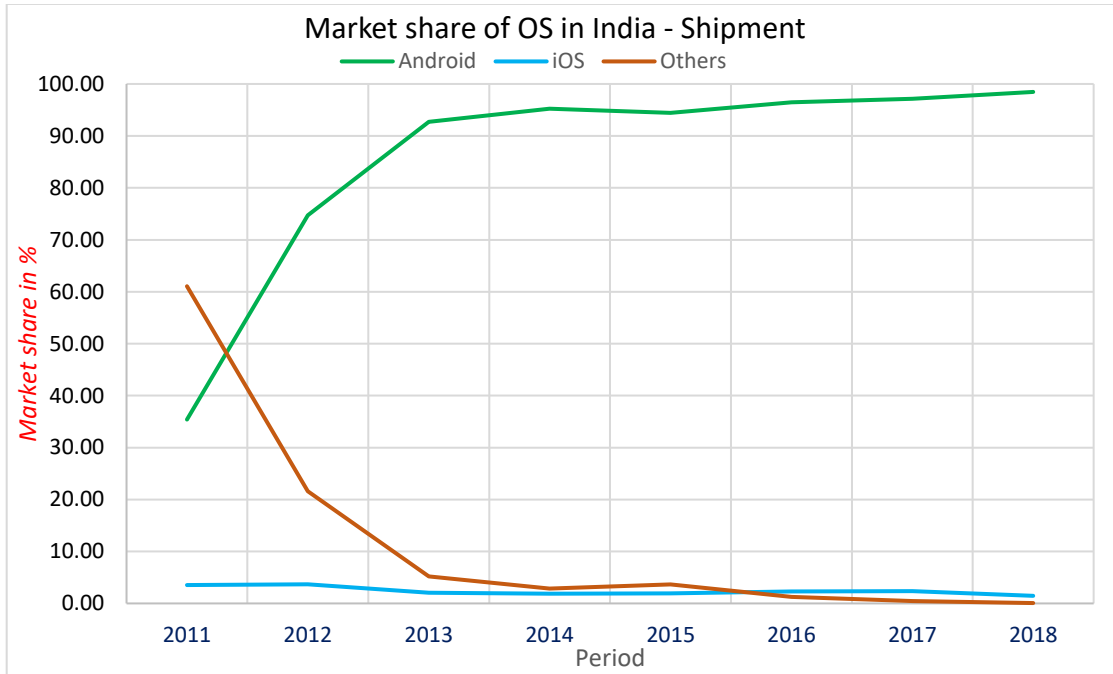
98. At the outset, the Commission notes that the abovementioned data includes data pertaining to the other OSs such as iOS, Blackberry which are not part of the relevant market of licensable smart mobile device OS. However, despite that Android OS enjoys a significantly high market share since 2012 and at the end of 2018, it was massive at 98.50%. It indicates a strong position of Android OS in India which is unassailable. If the data pertaining to the other OSs such as iOS, Blackberry is excluded, then probably Android OS would be close to a monopoly in the relevant market in India. This is elaborated further in succeeding paragraphs.

99. The DG sought the details pertaining to number of Android devices sold in India from 2011 onwards having GMS and without GMS from Google. ████████

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100. The comparative data on Android smart mobile devices with GMS having Android OS, smart mobile devices with Windows OS and smart mobile devices with Fire OS in India is tabulated below. In this regard, even if it is assumed that the data on Android smart mobile devices with GMS having Android OS in India provided by Google is not accurate, it demonstrates the substantial market share of Google's Android *vis-à-vis* other OSs.

Table 2: Number of Android OS as compared to other OSs

Year	Android OS[3]	Windows OS[4]	Fire OS[5]
2011	████	███	▌
2012	████	███	▌
2013	█████	█████	███
2014	█████	█████	███
2015	█████	█████	▌
2016	█████	███	▌
2017	█████	▌	▌
2018	█████	▌	▌

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[3] Google has provided figures of Android smart mobile devices with GMS.
[4] Submitted by Microsoft. Data till 2014 based on its internal records while subsequent years' data as per IDC. The data of Windows Phone OS sold by OEMs, other than Microsoft, being negligible have not been included.
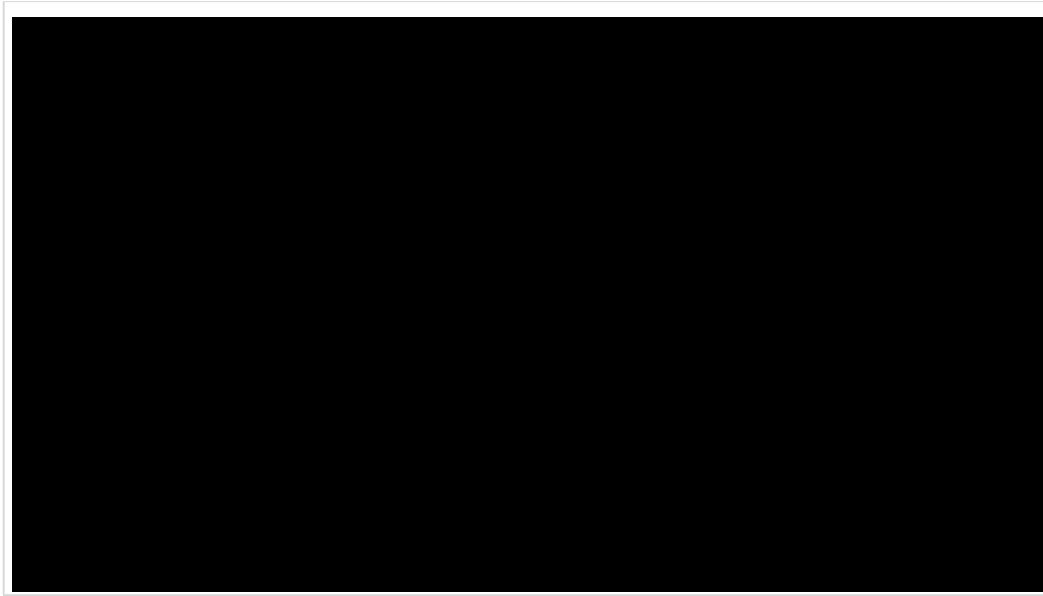[5] Submitted by Amazon

101. This data can also be graphically represented as below:

Graph 2: Market share of licensable smart mobile OSs

102. Based on the above analysis of the market share data, it is noted that the market of licensable smart mobile device (smartphones & tablets) OS, is heavily concentrated in favour of Google's Android due to its dominant, persistent and increasing share in the domestic market. In other words, Android which is controlled by Google has the largest installed user base of smart mobile devices. Microsoft's Windows phone OS, which entered the market in 2010, could not compete and had to exit the business of smartphone OS (and smartphones) in 2016. Even otherwise, Windows Phone OS had a negligible market share, and it could never pose any serious competitive threat to Google's Android OS.

103. Similarly, the Fire OS which was developed by Amazon as a 'forked' Android could not launch smart mobile phones in India. The Commission notes that barring sale of negligible number of tablets in 2013 and 2014, Amazon's Fire OS could not make even its presence felt in the market of licensable smart mobile OS

in India. Thus, all the competitors of Google's Android OS have been marginalized ever since it became the market leader in 2014.

104. In relation to incontrovertible position of Google in the relevant market, it is appropriate to refer to replies filed by various third parties which also portends that Google is the dominant enterprise in the relevant market for licensable OS for smart mobile devices comprising of smartphones & tablets in India. Some of the relevant excerpts are reproduced below:

104.1. Career 360 (an ed-tech company) has stated that:

> '...In India, **Android is the most preferred/ popular OS to develop mobile applications**. As per a research report the composition of mobile devices based on mobile operating system during the last 1 year is as follows:
> **-Android: 94 to 96%**
> -iOS: 2 to 3%
> -Other: 1 to 3%...'
>
> **(Emphasis supplied)**

104.2. Paytm First Games Private Limited has stated that:

> '...**Google's Android Operating System (OS) is the preferred OS for writing and developing mobile applications (App(s)) in India**. The development of an app requires the investment of significant time and resources and therefore, developers prefer developing apps where they could target the largest user base.
> **Given that Google's Android covers more than 96% of Indian smartphone devices, it is the most preferred mobile app development platform for app developers in India. In contrast, Apple, only holds approximately 3% of the smartphone sales in India...'**
>
> **(Emphasis supplied)**

104.3. Zomato Private Limited has stated that:

> '...**In India, primarily Google's Android OS is the most used mobile OS**. Apple's iOS is the other player in the market. **Most mobile applications target these Operating Systems due to their reach. As most applications want to maximise their audience, developers prefer to support these OSs at the very least**...'
>
> **(Emphasis supplied)**

c) Intra brand competition

105. Google has argued before the DG that unlike other mobile platforms, Android allows competition within its eco-system, thus promoting intra-brand competition whereby OEMs can customize and modify Android OS to create differentiated software and features. In this regard, the Commission notes that the issue of intra-brand competition within the Android OS is not relevant in assessing the market power of Google in the relevant market as these OEMs, even though compete with Google's Pixel and Google Nexus in the downstream sales market of smart mobile device, are dependent on Google for Android license and Android versions released by Google from time to time (already discussed *supra*).

106. Moreover, these OEMs (and the app developers), while customizing or modifying Google's Android, are required to comply with the minimum base line hardware and software requirements enumerated in the Android compatibility definition document published by Google from time to time. Therefore, the limited ability of customization of Android at the hands of the OEMs cannot be considered to pose any competitive constraint on Google's market power to control Android, in the market for licensable operating system for smart mobile devices.

d) Necessity of a Google Account

107. The Commission further notes that Android users do not need a Google Account to set up their Android device as during setup, users have the option to skip the Google Account sign-in screen and still use certain Google services-such as Search and Chrome-and third-party apps. However, Google Account is required to access certain other Google services on Android, such as Play Store (which is found to be a 'must have' app). A 'Google Account' gives users access to most Google products, such as Gmail and YouTube, using the same username and password. Accordingly, the need to have a Google Account is the only option for the users to avail various services of Android OS.

e) Availability of Applications – a key feature of OS

108.   The user's preference for a mobile OS is also driven by the ability of the OS to run applications as well as the number of applications available for that OS. The Commission notes that smart mobile device OS markets exhibit network effects. On one hand, the OS which can run/ perform maximum number of applications would be most popular among the users and thus would attract the greatest number of users. On the other hand, the app developers would prefer to develop apps for the OS which has the maximum number of users because access to the large user base would result in substantial economies of scale, given the heavy fixed costs and very low marginal cost associated with development of such apps. Thus, there is an 'indirect network effect' between users of an OS and app developers for such OS.

109.   In this regard, the following submission made by third parties are relevant to note:

109.1.   Microsoft's experience with its Windows Phone OS, has demonstrated that Windows phone devices potentially suffered because of the 'app gap'. The relevant reply is reproduced here for the sake of convenience:

> *'...unfortunately, Windows Phone OS was not a success. In part, **it suffered from entering the market later than its competitors. More importantly, Windows Phone devices potentially suffered because of the so-called "app gap." App developers did not find it economical to port and support their most popular apps for Windows Phone OS given its low market share compared to iOS and Android. As a result, the Windows Phone OS platform did not have many of the popular mobile apps on which consumers had come to rely. Without these apps, Windows Phone had trouble attracting and retaining users***...'*
>
> **(Emphasis supplied)**

109.2.   Amazon, another competitor in the relevant market with 'Android fork OS' (known as 'Fire OS'), has also faced similar challenges and has acknowledged that even though OS developers can develop a new OS (for smart mobiles/ tablets) from scratch, but the new OS is unlikely to succeed

and offer meaningful competition to an incumbent OS without a robust 'app and technology ecosystem'. Amazon also highlighted that a limited selection of apps, makes devices running on Android fork like Fire OS, less attractive to end users. This results in a vicious cycle where a limited app selection impedes Amazon's ability to distribute its Fire OS and the devices operating on the Fire OS; and the limited distribution of the Fire OS and the devices operating on Fire OS impede Amazon's ability to grow its app selection. The relevant portion of the reply is reproduced herein below:

> *'…The utility and success of an OS is determined, inter alia, by: (a) the presence of a significant number of active apps (for example, apps made available through the Google Play app store and Apple App Store); (b) willingness of original equipment manufacturers ('OEMs')/ original design manufacturers ('ODMs')/ contract manufacturers ('CMs') to manufacture devices running on the new OS8; and (c) user preference for the new OS.*
>
> *OS developers can develop a new OS (for smart mobiles/tablets) from scratch; however a new OS is unlikely to succeed and offer meaningful competition to an incumbent OS without a robust 'app and technology ecosystem'.*
>
> *'App and technology ecosystem' in this context refers to the network of developers who can create apps compatible with a particular OS to make it attractive for users. Such an ecosystem is often characterized by network effects. For example, OEMs/ODMs/CMs would be more incentivized to manufacture devices compatible with a particular OS if there are more users of such OS. Similarly, more users would be attracted to a particular OS if more developers create apps for such OS and vice versa. Therefore, developing a meaningful app and technology ecosystem requires the presence of a sufficient number of app developers, OEMs/ODMs/CMs, technology providers and users. Accordingly, the developer of the new OS would have to overcome two significant barriers to entry in order to be able to viably compete with an incumbent OS such as Android OS. Firstly, the developer of a new OS would require the technology related capability to develop a new OS, from scratch. Secondly, the developer would also have to overcome the technological barriers to entry, particularly, the application barriers to entry involved in developing an ecosystem which would make the OS commercially viable. In United States v. Microsoft, the US Court of Appeals upheld the District Court's observation that the*

> *'applications barrier to entry' - stems from two characteristics of the software market: (1) most consumers prefer the OS for which a large number of applications have already been written; and (2) most developers prefer to write for an OS that already has a substantial consumer base. Consequently, this 'chicken-and-egg' situation arising from applications barrier to entry ensures that applications will continue to be written for the already dominant OS, which in turn ensures that consumers will continue to prefer it over other competing OSs…'*

(Emphasis supplied)

110. In this regard, the DG has also referred to the Majority Staff Report and Recommendations- Subcommittee on Anti-trust, Commercial and Administrative Law *'Investigation of Competition in Digital Markets'*, United States 2020[6] (*US Antitrust Subcommittee Report*), which makes the following observations:

> *'..the mobile OS market is also characterized by strong network effects. In short, a new mobile OS must have a sufficiently large user base to attract app developers to build apps to run on the OS. **An OS with an insufficient number of users and developers is unlikely to receive support from mobile device manufacturers that will install the OS on their devices**, or mobile network operators that will support those devices on their networks. **The most important factor that developers consider before building apps for an OS is the install base of the OS—how many users have devices running the OS that can install the app. Developers will not build apps for an OS with few users. This reinforces the power of dominant mobile operating systems.** The more consumers use the OS, the more developers will build apps for the OS, increasing the value of the OS for users and attracting more consumers. **Over the past decade, several large technology companies have attempted and failed to leverage their large user bases to compete against Apple and Google in the mobile OS market**. Facebook and Amazon both tried to enter the market with variants of Google's Android OS. Both companies quickly exited the market because consumers were mostly accessing Facebook and Amazon content through apps on iOS and Android devices. **Technology reviewers also expressed disappointment that Amazon's Fire Phone did not offer the same extensive library of apps and services as iOS or Android devices**.'*

(Emphasis supplied)

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[6] Majority Staff Report and Recommendations – Subcommittee on Antitrust, Commercial and Administrative Law 'Investigation of Competition in Digital Markets', United States 2020 : https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf

111. The Android eco-system can be depicted as below
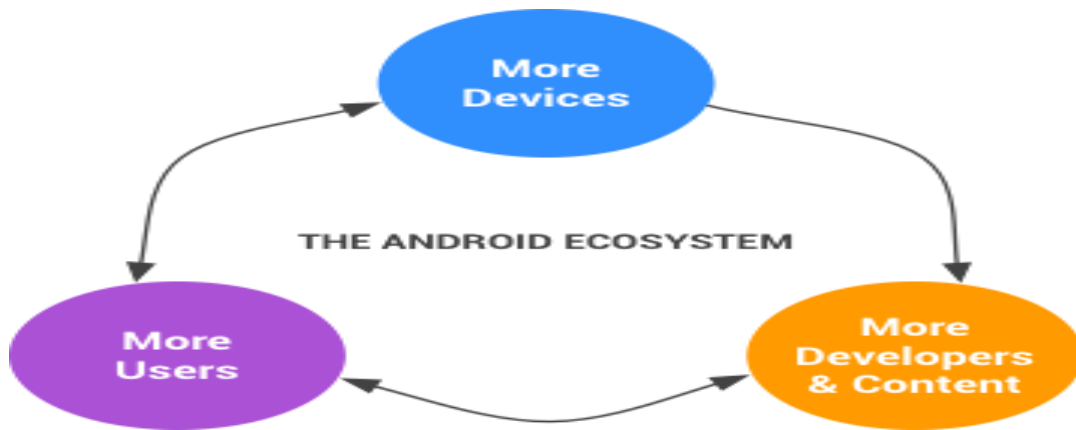
112. Thus, apart from design, functionality and features of Android OS, the main reason for its demand among the mobile users is rich app experience (with availability of more than 2.7 million apps) as compared to any other competing OS. Likewise, the significant numbers of the users of Android OS (which is over 95% in India) incentivises the app developers to write/ develop apps for Android OS as they can target a large audience by writing a single app. The large bouquet of apps thus reinforces demand for Android OS, augmenting Google's dominant position and thereby perpetuating app developers' incentives to write apps mainly for Android OS. This self - reinforcing cycle can also be referred to as 'positive feedback loop'.

113. Further, as depicted by the example of Amazon and Microsoft, the developer of a new OS would not only require the technology related capability to develop the OS from scratch but would have to overcome various other barriers to entry, particularly, the application barriers to entry discussed above. The OS developer has to convince the app developers to write apps for the new OS. However, app developers may find it prohibitively expensive to develop/ write apps for a new smart mobile OS, whose user base is not large enough. Moreover, due to variation in the architecture of various licensable OSs, the conversion of an app from one

licensable OS to another OS would be resource intensive and the app developer may not have incentive to do so without presence of adequate user base on the new OS. Likewise, the end users would not prefer to use the smart mobile OS which is having a limited number of apps available on its platform. Similarly, OEMs would also prefer a licensable OS which not only has sufficient user base but also sufficient app developer base.

114. Accordingly, the Commission notes that these entry barriers associated with development of alternate OS further consolidates Google's dominant position in the relevant market.

f) Entry barrier in OS market

115. The Investigation has examined the investments made by OS developers *viz.* Microsoft, Amazon, Mozilla, Google, *etc.* and the same has revealed that developing a smart mobile OS requires considerable investment which acts as another entry barrier for a new player.

116. Thus, apart from number of applications available for an OS which act as an entry barrier (as discussed *supra*), developing a smart mobile OS itself requires lot of capital and technological investments in terms of R&D. These investments are required not only at the stage of initial development, launch & marketing but also subsequently in maintenance, updating, development of new versions and new features/ release. This is evident from the reply of OS developers and various OEMs as enumerated below:

116.1. Microsoft, a leading Windows OS manufacturer for PC, entered as a competitor in the licensable smart mobile OS market and developed Windows OS specifically designed to run on smart mobile devices in 2010. As per Microsoft, the R&D, upkeep and maintenance activities necessary to create and run a smart mobile device OS are comparable to those

necessary for R&D for any other type of OS. Such activities include maintaining a large corpus of software developers, engineers, user experience designers, marketers, business people and others to write code, design user interfaces, create a store, work with app developers and perform tasks related to the design, testing, maintenance, de-bugging, patching and updating of OS and associated apps, along with the necessary infrastructure to deliver and update the OS.

116.2.   Xiaomi, a smart device OEM, has stated that,

"*...developing a new operating system for smart phones requires significant investment in research & development, in terms of time,* efforts*, resources and capital...*" also "*...the ecosystems of an existing app developers may pose a greater challenge for a new player trying to develop a smart OS. App developers must be willing to develop apps compatible with the new OS to enable the new OS to compete with the existing operating systems in the market. This requires time and effort on the part of the app developers, who would ordinarily prioritize developing and updating apps for a more popular OS than a new OS...*"

116.3.   According to Huawei, another smart device OEM,

'*...a new player in the market of smart mobile operating system faces two challenges due to Android's dominance: 1. The high cost of developer migration: The migration of millions developers to the new operating system requires substantial and long-term resource investment. 2. The support of Top apps: Some GMS applications of Google (such as Google Play, YouTube, Google map, etc.) occupy a monopoly position in the market. If these apps do not support the new operating system, the new operation system will not be recognized or accepted by users...*'

116.4.   According to OPPO, another smart device OEM,

'*...that the System ecology is the major entry barrier for a new player in the market of smart mobile Operating system as end users tend to choose system with more function and more third-party applications. Moreover, main obstacle to the late comers of the system is the shortage of the third-party applications and new features.*'

116.5.   According to Samsung, an OEM,

'*...a new player in the market of smart mobile operating system may take substantial time to gain acceptability from users. May be even developing a new operating system would require considerable research &*

development and expenditure of capital. Any new player, as also in almost any industry, is likely to face competition from the already established current players especially where any current player(s) enjoys customer loyalty.'

116.6. Amazon has stated that,

*"…Accordingly, the developer of the new OS would have to overcome two significant barriers to entry in order to be able to viably compete with an incumbent OS such as Android OS. **Firstly, the developer of a new OS would require the technology related capability to develop a new OS, from scratch. Secondly, the developer would also have to overcome the technological barriers to entry***, particularly, the application barriers to entry involved in developing an ecosystem which would make the OS commercially viable…"*

117. The DG has also referred to the US Antitrust Subcommittee Report which made the following observations in this respect:

*'…**companies like Mozilla and Alibaba have also attempted to enter the mobile OS market. Mozilla unveiled its Firefox OS in 2013 and exited the market altogether by 2016. In 2012, Chinese tech giant Alibaba developed a mobile OS called Aliyun for the Chinese market. However, Acer, Alibaba's hardware partner, abruptly canceled its collaboration with Alibaba before the launch of Acer's device running the OS***.*
Over the past decade, once-competitive mobile operating systems like Nokia, BlackBerry, and Microsoft struggled to survive as Apple and Google grew more dominant, eventually exiting the marketplace altogether. BlackBerry—once a leading mobile OS developer—now licenses the BlackBerry name to TCL to market TCL's smartphones. TCL's BlackBerry phones run on Android. In the last quarter of 2016, Windows devices accounted for less than half of 1% of new smartphone sales. In 2017 Microsoft abandoned its mobile OS business, and by that time, more than 99% of all new smartphones were running on iOS or Android and market observers expressed no confidence that new competition would emerge. One key factor leading to Microsoft's withdrawal from the mobile marketplace was that developers were reluctant to develop apps for a third mobile operating system when already building apps for iOS and Android. These market dynamics remain in place today…'

(Emphasis supplied)

118. The DG has further noted that the success of a licensable OS (and an OS eco-system) is also largely dependent on achieving scale. Licensing an OS to a range of manufacturers producing various devices with different specifications would make the OS more attractive to a wide range of users. This is because users

typically want to have a choice between different hardware specifications. On the other hand, when the OEMs perceive the features & specifications of the OS to be commercially attractive, they are more likely to adapt the OS. However, due to the compatibility obligations of OEMs following the Anti-Fragmentation Agreement/ ACC)/ Android compatibility documents (CDD) such OEMs were/ are restrained from manufacturing and selling devices incorporating the forked version of Android OS.

119. In relation to the entry barriers, the DG has also referred to few articles/papers which include a paper titled 'Android and Competition Law: Exploring and Assessing Google's Practices in Mobile'[7], which made the following observations:

> *'…Amazon's experience is illustrative. Amazon's Fire Phone and Fire Tablet both use alternative versions of Android, modified from Google's standard version. It seems Amazon was permitted to design and sell devices with this modified code precisely because Amazon is not a manufacturer of GMS-equipped phones that bind all of Amazon to the AFA. In contrast, if competing phone manufacturer Samsung were to attempt to sell the Fire (or any other device that, like Fire, was grounded in a modification of Android), that would breach the AFA and expose Samsung to cancellation of its license to distribute GMS, which Samsung of course relies on for its scores of other devices. The experience of phone manufacturer Acer offers a useful example. When Acer in 2012 planned to sell phones running a modified version of Android, the company reported that Google required it not to do so and threatened to withhold access to other Google software. **The AFA thus makes it commercially infeasible for established device manufacturers, including Samsung and others, from attempting the architectural innovation Amazon explored in Fire.** It is little stretch to think such innovation would be more successful by Samsung than by Amazon—Samsung's experience as the largest manufacturer of phones would likely help. **But the AFA denies Samsung this strategy and denies consumers the benefit of devices that combine Amazon's creative approach with Samsung's experience**…'*

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[7] Edelman, Benjamin G. and Geradin, Damien, Android and Competition Law: Exploring and Assessing Google's Practices in Mobile (October 24, 2016). European Competition Journal 12 (2016): 159-194, Harvard PON Working Paper, SSRN: https://ssrn.com/abstract=2833476 or http://dx.doi.org/10.2139/ssrn.2833476

120. The experience of Amazon with Fire OS which is derived from AOSP but is incompatible Android is worth noting. The Investigation has revealed that Amazon discussed the possibility of distributing its Fire OS with several smart phone OEMs and these OEMs in their negotiations with Amazon often cited the risk of losing their access to the Google mobile services (GMS) apps, if they were to work with Amazon because this could be viewed by Google as fragmentation of Android. Thus, the Commission notes that the restrictions on OEMs from developing devices for Android fork version also works as a major entry barrier which discouraged the developers from using the AOSP.

121. In this regard, it is further noted that despite free availability of AOSP license, a large number of OEMs have signed AFA/ ACC and MADA and obtained Google's APIs, which evidences that Google's Android is not constrained by instant and free availability of AOSP and the same is not a substitute of Google's Android. The Commission further notes that developing an OS even based on AOSP would require significant investment on the part of any such developer which would necessitate charging a license fee for the OS, at least initially. However, Google's Android being available at no cost to OEMs would deter the OEMs to opt for a paid Android fork OS. Further, Google's proprietary apps are not available on forked versions of Android and thus, the OS developer would also be required to offer various apps and other APIs (performing similar functionalities as that of Google Play Services) in order to compete effectively with Google. Therefore, it is not the OS alone that would be sufficient to constrain Google but a whole gamut of functionalities. As detailed subsequently, the restrictions imposed by AFA/ ACC ensured that the OEMs are tied to Google's Android and are not available for distributing alternative forked versions of Android. The AOSP based OSs do not stand any chance before Google and thus, are not in a position to constrain Google in any manner.

122. Further, as revealed by the Investigation, no new OS developer has been able to enter the market of licensable smart mobile OS in the last five years. On the contrary, the exit of Microsoft's Windows Phone OS the market in 2016 and inability of Amazon's Fire OS to make any footprint in the Indian market has further consolidated the market power of Android OS thereby leaving the OEMs much more dependent on Google. This further evidence the existence of entry barriers in the relevant market.

g) Lack of countervailing buyer power

123. The Commission notes that there are multiple smart device OEMs in India *viz.* Samsung, Xiaomi, Oppo, Huawei, Karbonn, Motorola, Lenovo, *etc.* who licenses Android from Google. Further, Android OS enjoys significant consumer demand as indicated by the market share analysis *supra.* Thus, the OEMs are actually devoid of any choice to select commercial alternatives to Android OS. Furthermore, due to significant technological barriers, it is generally not feasible for them to develop and be commercially successful in smart Mobile OS. In this regard, the DG has also referred to the experience of Samsung which had developed two mobile operating systems *i.e.*, Bada and Tizen; however, both of them could not be commercially successful.

124. Further, based on the responses of the mobile handset manufacturers, it is noted that they are fully dependent on Google's Android and are not in a position to either develop or promote entry of any alternative OS developer which could threaten Android OS. The major OEMs active in the Indian market of smart mobile devices having Android perceive Android OS as non-substitutable with any other licensable smart mobile operating system. In this regard, it is important to note submissions of following OEMs:

124.1. According to Samsung,

> '...the reason for popularity of Android in comparison with other OS may be as follows: (a) the number of apps available on Android

platform has grown tremendously over the years, (b) the variety of apps available on Android platform has and possibly is, much more than other OS, (c) Phones with Android OS are available in various and diverse choices- in terms of price range and features and hence end- users have more options across the price spectrum, (d) due to growing customer base, more app developers have worked on and developed apps suitable for Android OS and this has in turn let to increase in popularity…'

124.2.   According to Huawei, currently all its phones use only the Android OS.

Further, according to Huawei,

'The possible reasons may include: (i) Android is free, while some other OSs, like Windows Mobile required certain license fee, (ii) Android is open source, which allows OMEs to do certain differentiation by themselves and (iii) Google popular apps, like Gmail and Google Maps, meet customer needs better than other alternative solutions offered through other OSs.'

124.3.   According to Xiaomi,

'Xiaomi smartphones can only legally operate on the Android OS, therefore there are no legal substitutes for Android OS for Xiaomi smartphones in India…'

124.4.   According to OPPO,

'...the Company informs that there is no substitute system for Android.'

124.5.   According to Micromax,

'…Micromax in the category of mobile phones deals in feature phone and smartphone. With respect to smart mobile phones, Micromax brands phones work on Android Operating Software. However, Micromax once had launched Windows operating Software based smart mobile phone in the year 2014…'…………'…The Android OS has earned edge over Window OS gaining customer preferences, popularity and features like Gmail, Maps, Google search, Chrome, saving of Contract list on Gmail, YouTube, and availability of application in Play Store etc. Further, Microsoft has not shown any support for the Windows OS viz. marketing support, technical support, applications compatibility etc…'

124.6.   According to Motorola,

> '...to the best of our knowledge Motorola did not have any alternative OS [other than Android] shipped to India…'

124.7.   According to Lenovo,

> '...To the best of our knowledge Lenovo did not have any alternative OS [other than Android] shipped to India...'

125.   Thus, it is noted that OEMs are not in a position to bargain with Google due to almost non-existent alternatives. As already elaborated, the relevant market has not seen any new entry but rather, encountered exits by the rivals of Google. This has left the OEMs much more dependent on Google.

126.   Further, the lack of countervailing buyer power of OEMs is also evident from the manner of signing of the standard MADA & AFA/ACC by such OEMs without any material deviations. The OEMs are not able to influence the terms and conditions imposed by Google through these agreements.

127.   The DG has also examined the countervailing buying power on the part of smart mobile device users. In this regard, it is noted that in the absence of any viable alternative to the Android OS and associated app experience, majority of the smart mobile users are dependent on Android OS (including its periodic updates and latest version/ release) and therefore do not enjoy countervailing buying power. The price of the only alternative *i.e.,* iOS-based devices is significantly high as compared to starting price at which Android based devices are available in the market. As such iOS, which otherwise is not a part of the relevant market of licensable smart mobile device OS, cannot exercise competitive constraints on Android. The Investigation also revealed that users show a significant degree of loyalty to their existing smart mobile OS.

h) Other financial figures of Google

128. The DG has also examined the financial data of Google pertaining to capital expenditure, R&D expenditure, total assets and net worth from the year 2009 onwards, and noted that Google has huge financial resources, which provide it with substantial advantage and leverage to invest in and control the market of licensable OS in India.

129. The Commission is of the view that there is no dispute that from the mobile OEMs' viewpoint, only licensable mobile operating systems constitute the set of alternatives that they can rely on, for manufacturing mobile handsets. Thus, from the OEMs' perspective, licensable mobile operating systems is indispensable and cannot be substituted with non-licensable OSs.

130. Looking at situation from end user perspective, the Commission notes that smart device ecosystem of Apple (based on iOS) and Google (based on Android OS) have emerged as the two major mobile ecosystems, former being non-licensable and closed source whereas latter being licensable and open source. Some consumers may have preference for closed ecosystem like Apple and others may have a preference for open ecosystems like that of Google. Thus, in some limited sense the end consumer may have the choice of a smart device based on an alternate OS (*i.e.,* whether to buy iOS-based device or Android based device) and that too at the time of buying a smart device. Thereafter, the end consumer is locked-in to the OS and faces substantial switching costs, primarily in terms of cost of new smart device.

131. In this regard, the Commission notes that price of the alternate device is an important parameter for switching decision by the users. There is no denial of the fact that users preferring low-priced devices would not switch to Apple devices due to considerable price differences. However, users of high-priced devices may be in a position to switch to Apple devices, however, users in that case would need

to learn the new interface, transfer the existing data on devices, the need to download and purchase existing apps for the new smart mobile OS, *etc.* In this regard, the Commission also notes that Apple markets its devices based on its privacy friendly policies. Thus, some degree of brand loyalty of the users towards the OS cannot be denied. All these will operate as switching costs for the users. Thus, the users of smart mobile devices in India face considerable switching cost to shift to iOS between Android and iOS (and the need to download and purchase existing apps for the new smart mobile OS). The Commission also notes that switching by Android users on iOS to an extent would also be offset by the fact that Google has agreement with Apple under which Google's search engine has been set as the default search engine in the Safari browser which comes pre-installed on Apple devices. Thus, even the iOS users would be using Google search in iOS ecosystem which will minimize any negative impact on Google's business.

132. In relation to understanding the extent of competition between Google's Android ecosystem and Apple's iOS ecosystem, it is also important to note the difference in the two business models which affect the underlying incentives of business decisions. Apple's business is primarily based on a vertically integrated smart device ecosystem which focuses on sale of high-end smart devices with state of the art software components. Whereas Google's business is found to be driven by the ultimate intent of increasing users on its platforms so that they interact with its revenue earning service *i.e.,* online search which directly affects sale of online advertising services by Google. The Commission further notes that competition between devices based on iOS and Android, from end users' perspective, is primarily a competition between OEMs, *i.e.,* Apple for iOS based devices and numerous OEMs (*viz.* Samsung, Oppo, Xiaomi, Vivo, OnePlus, Google through pixel series, *etc.*) offering Android based devices. In the decision tree of the users, device OS is not the sole criteria but a multitude of other parameters also *viz.* hardware configuration, price of the device, after sales services, *etc.* and OS is

one of such criteria. Therefore, the competition between two ecosystems cannot be limited to OS alone.

133. For app developers, app stores have become a necessary medium for distribution of their apps to the end users. Now, availability of an app store is dependent on OS installed on a smart device *i.e.,* an app developer cannot use Apple's App Store for distributing apps to Android users and vice versa. Thus, from the app developers' perspective, the app store available on Android OS (a licensable mobile operating systems) cannot be substituted with an app store available on iOS (a non-licensable OS). Multi-homing by app developers should not be confused with demand side substitution. Even if app developers' multi-home across licensable and non-licensable mobile operating systems, such multi-homing does not tantamount to substitutability as they cannot substitute one operating system for the other. The Android users and iOS users are two different and distinct set of customers. The app developers, in order to maximise their reach to these set of consumers, would not like to confine their offerings exclusively to one of the ecosystems as it would imply losing a sizable portion of the potential consumers' revenue who are available on the other platform. Consequently, Google's claim that Apple iOS competes with Android to attract users and app developers cannot be accepted. This aspect from app developers' perspective is discussed in more detail while analysing the market for app stores and assessing Google's dominance.

134. An appreciation of the market dynamics in licensable mobile operating system in India makes it evident that Google's Android OS has successfully reaped the indirect network effects that characterize the market of operating systems, which essentially are multi-sided platforms. With its large user base, Android OS is the most preferred licensable OS for app developers and with a large universe of apps developed for the platform, it is the most valued licensable operating system for any new OEM. All relevant factors that define competition landscape, in unison, indicate that the relevant market of licensable mobile operating systems in India has tipped in favour of Google Android OS.

135. Thus, the Commission has no hesitation in concluding that Android OS and thus, Google, enjoys a dominant position in the relevant market of licensable operating system for smart mobile devices in India.

B. Market for app store for Android smart mobile OS in India

136. Mobile app stores are digital stores that enable software developers to distribute software applications ('apps') to mobile device users. A mobile app is a standardized piece of software optimized for use on a mobile device. Users can install this software to access digital content or services, share content, play games or make transactions for physical goods and services. These apps may be pre-installed on a mobile device as a component of the operating system by the device manufacturer, or downloaded from an app store, or loaded directly from the web using a browser- a process referred to as side-loading. Software developers upload apps and updates to the app stores and mobile device users can then install apps by downloading them from the app store to their devices. In addition to allowing users to install apps, app stores enable users to search, browse, and find reviews for apps, as well as remove apps from their devices.

137. It is also noted that app stores also offer tools and services to support developers to building apps for the app store. Further, app stores have rules that govern the types of apps permitted in the app store, conduct of app developers, how users pay for apps, the distribution of revenue between the app and the app store, and other details regarding the relationship between the app store operator and the app developers that distribute apps through the app store.

138. In relation to app stores, it is further noted that Google has offered an app store for Android OS since 2008. An early version of its app store was called Android Market, which in March 2012 was integrated into Google Play and became the Play Store. Further, the Play Store is part of Google Mobile Services (GMS), the bundle of Google apps and services that Google licenses together. The DG in its

report has also identified and provided details about the other app stores for Android OS which includes Samsung Galaxy App Store, Xiaomi App Store, Amazon App Store, Aptoide App Store, *etc.*

Relevant Market

139. The Commission notes that the DG has examined various aspects for the purpose of delineating relevant market related to app stores. Based on the analysis of the provisions of the Act and submissions of the parties, the DG has concluded that app stores are different from other apps, and app stores for other OSs do not belong to the same market as that for Android OS. Accordingly, the second relevant market delineated by the DG is 'the market for app store for Android OS in India'. Further, the DG also found Google to be dominant in the said market.

140. Google has contested both the market delineation as well as determination of Google's dominance in the said market. However, on holistic consideration of the entire Android ecosystem, findings of the DG as well as rival submissions made by Google along with other information available on record, the Commission is not convinced with the arguments put forth by Google for various reasons being recorded in this order. Thus, the Commission agrees with the findings of the DG.

141. The observations of the Commission in respect of delineation of the relevant market, are as follows:

   a.   App stores are different from other apps

142. The Commission notes the distinction between the app stores and standalone apps as brought out by the DG. App stores operate as a distribution channel for other apps, whereas these other apps, available for download on the app stores, are used for accessing specific content or service on a smart device. App stores also allows the user to search amongst various available apps for a specific purpose and also have the facility to submit the reviews of apps. Thus, from a demand side

perspective, app stores serve different purpose as compared to other apps and thus, cannot be replaced by other apps. Since, users expect to use multiple and varied apps on their device, presence of an app store is considered to be very critical for commercial success of the device. This is the reason why OEMs need to pre-install, on their smart mobile devices, at least one app store to allow users to download other 'apps'.

143. The Commission also notes that the development of an app store requires significant time and resources, regardless of whether the developer in question has already developed other apps. In particular, developers of other apps (*viz.* Amazon) have stated that the time and resources to develop an app store are significant. Thus, the Commission is of the view that other 'apps' do not belong to the same relevant market as that of app store.

b.   *Other app stores for Android OS*

144. Further, as already stated, there are multiple app stores for Android OS which includes, Samsung Galaxy App Store, Xiaomi App Store, Huawei App Store, Oppo App Store, Amazon App Store, Aptoide App Store, *etc.* These other app stores are primarily OEM specific (with very few exceptions *viz.* Aptoide) and are pre-installed by the respective OEM only, alongside Google's Play Store on their smart device. *E.g.,* Samsung Galaxy App Store is installed by Samsung in its devices only and is not installed by other OEMs. Thus, these other Android app stores though are substitutable with Google's Play Store individually, but in a limited manner only. This aspect is further elaborated while examining the dominance of Google in this market.

145. The Commission is of the opinion that all these app stores belong to the same relevant market as an OEM, in principle, can choose to pre-install its own app store along with Google Play Store, on its Android devices.

*c.   App stores for other licensable as well as non-licensable OS don't belong
to the same market*

146. The DG has also brought out the technical differences between the app stores
meant for different OSs. The Commission observes that app stores are developed
for a specific OS due to variation in the programming language, APIs and other
technical parameters. Thus, the app store developed for one particular OS (say
Android OS) cannot be substituted with the app store developed for another OS
(say Apple's iOS). The OEMs who have installed Android OS on their respective
smart mobile devices cannot opt for an app store which is technically
incompatible with Android OS. Therefore, from a demand side perspective, the
choice available to OEMs having installed Android OS on their smart devices is
restricted to app stores meant for Android OS.

147. Due to these technical differences between the different OSs and then resultant
un-availability of the incompatible app store, the user's choice of the app store is
also restricted to the alternative app store which is compatible with a specific OS.
The demand of app store for Android OS cannot be interchangeable or
substitutable with app stores developed for different OS.

148. Further, from a supply side perspective also, the developers of app stores for other
licensable or non-licensable smart mobile OSs are unlikely to switch to Android
OS as the development of an app store for a particular OS requires considerable
time and resources. Therefore, Microsoft which offered Windows Phone Store or
Apple which offers App Store (for their respective OSs), are unlikely to start
developing app store for Android OS. These players cannot be considered as a
competitor of Google's Play Store which is developed and designed only for
Android OS. Therefore, as rightly observed by the DG, the competition in the app
store market is essentially confined to the alternative app stores for Android OS.

149. In this context, it is pertinent to note the submissions made by a third party as well
as Google, as follows:

149.1. Data Ingenious Global Limited has stated that:

> '...***Apps developed for Android OS and iOS include different programming language, development tool kits, testing and interface requirements, other OS specific features*** (such as, iOS not having a back button like Android and therefore apps needing to be different) etc...'

(Emphasis supplied)

149.2. Google in its submission, recognized that,

> '*porting apps from one incompatible version of Android to another platform requires significant financial resources and time. The costs of porting to entirely different platforms generally are higher, because developers will often need to rewrite their apps to an entirely new set of platform-specific APIs.*'

150. The same lends credence to the assertion that the market for app store for Android smart mobile OS is a separate relevant market in itself as even the developers of the apps do not consider app stores for non-licensable smart mobiles to be a part of the same relevant market. The Commission finds that the demand of app store for Android OS cannot be interchangeable or substitutable with app stores developed for different OS.

151. Thus, based on the above analysis, the Commission finds that app stores for (a) other licensable smart mobile OSs *viz.* Microsoft Windows Phone OS, and (b) non-licensable smart mobile OSs *viz.* Apple's AppStore for iOS, do not belong to the same product market as that of app stores for Android OS.

152. Thus, after considering the aforementioned reasoning and the provisions of Section 19(7) of the Act, the Commission holds the '*market for app store for Android smart mobile OS*' as the second relevant product market for the present matter.

153. In relation to relevant geographic market, for the reasoning already mentioned in respect of previous relevant market, the Commission considers 'India' as the

relevant geographic market for market for app store for Android OS, in accordance with the provisions of Section 2(t) read with Section 19(6) of the Act.

154. Consequently, the Commission delineates the '*market for app store for Android smart mobile OS in India*' as the second relevant market in the present matter.

Assessment of Dominance of Google

155. The DG has examined the dominance of Google in the market for app store for Android smart mobile OS in India. After analysis of various factors such as substantial market share enjoyed by Google, quantity and popularly of apps available in Google Play Store, existence of significant entry barriers, importance of Play Store from users' perspective, existence of network effect in the operation of app stores, lack of countervailing buyer powers of OEMs, *etc.,* the DG has concluded that Google Play Store is in dominant position in the market for app store for Android OS in India. The observations of the Commission in this respect are as follows:

a. *Market Share Analysis*

156. As already stated, there are various app stores which have been developed for Android smart mobile OS which, in addition to Google's Play Store, includes Samsung Galaxy App Store, Xiaomi App Store (Mi-Store), OPPO App Store, Huawei App Store, Aptoid App Store, *etc*.

157. The Commission is of the view that market share is one of the primary though not determinative parameters to assess dominance in a relevant market. The Commission notes that DG has computed market share of various competitors in this market using two different data points. *Firstly*, calculating the share of Android based smart mobile devices on which a given app store is pre-installed. This method allows for an assessment of the economic strength of an Android app store at the level of OEMs, which pre-install app stores on their Android devices.

Secondly, calculating the share of a given Android app store on the basis of the number of apps downloaded from that store. This method allows for an assessment of the economic strength of an Android app store at the level of users of Android devices. Thus, both these methods will help in holistic understanding as to position enjoyed by Google in the market for app store for Android OS in India.

158. With respect to first method, it is noted Google's Play Store comes pre-installed in all Android devices as a part of GMS and other competing app stores are pre-installed by the OEMs in their respective devices, sold in India. Thus, based on their pre-installation on Android devices, the comparison of market share (in percentage terms) of different app stores for Android OS, in India, for the period from 2014 to 2018[8], presented by the DG, is as follows:

Table 3: Comparison of Play Store with competing app stores, pre-installed in Android devices

Year	Google Play Store[9] (% of GMS)	Samsung Galaxy App Store[10] (% of GMS)	Huawei App Store[11] (% of GMS)	Xiaomi App Store[12] (% of GMS)	Oppo App Store[13] (% of GMS)	App Bazar (in Karbonn)[14] (% of GMS)
2014	100	53.5	-	1.9	0.6	6.1
2015	100	34.7	-	5.1	3.7	3.9

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[8] The DG has considered the data for the period of 2014 to 2018 for market share analysis as either the previous years' data was not available and/or was not provided by majority of competing App stores to Play Store.

[9] Source of Data: Reply filed by Google

[10] Source of Data: Reply filed by Samsung. Samsung Galaxy App Store is pre-installed in devices sold by Samsung in India

[11] Source of Data: Reply filed by Huawei. Huawei App Store is pre-installed in devices sold by Huawei in India

[12] Source of Data: Reply filed by Xiaomi – Figures are based on comparative financial year. Xiaomi App Store can only be found and installed in Xiaomi devices i.e. pre-loaded in Xiaomi devices sold in India. However, not all Xiaomi devices support Xiaomi App Store, such as Mi A1 & Mi A2, whose OS only allows Google's Play Store.

[13] Source of Data: Reply filed by Oppo. Oppo pre-installs Oppo's App Store in devices sold by it in India. Figures from 2014 to 2015 are based on calendar year and from 2016 to 2018 are based on comparative financial year.

[14] Source of Data: Reply filed by Karbonn. App Bazar is pre-installed in devices sold by it in India.

2016	100	30.2	0.8	10.7	10.1	2.4
2017	100	25.6	0.9	23.8	9.1	1.6
2018	100	21.8	3.5	28.3	8.7	1.4

Notes -
(1) Since Play Store comes preinstalled in GMS devices, its share is taken as 100%.
(2) The % of yearly pre-installations of competing App Stores in Android devices has been computed from the absolute numbers, as % of Android GMS devices.

159. A perusal of this data indicates that Google's Play Store comes preinstalled in all Android devices and therefore, its share is 100% whereas, the respective app stores of the OEMs are pre-installed only on their own Android based smart mobile devices. The Commission further notes that Samsung's Galaxy App Store which was pre-installed in 53.5% in 2014 came down to 21.8% in the year 2018 of all Android smart mobile devices. Similarly, the share of Huawei App Store, Xiaomi App Store, Oppo App Store and App Bazar in 2018 was only 3.5%, 28.3%, 8.7% and 1.4%, respectively of smart mobile devices on which these app stores were pre-installed as compared to 100% pre-installations enjoyed by Google's Play Store.

160. Share of each Android app store on the basis of yearly apps downloaded is tabulated below:

Table 4: Number of apps downloaded from various app stores[15] (In crore)

Calendar Year	Google's Play Store	Samsung Galaxy App Store	Huawei	Xiaomi	Oppo	App Bazar (in Karbonn)	Amazon App Store	Aptoid App Store
2014	███	███						
2015	███	███					███	
2016	███	███			███		███	██
2017	███	███		███	███		███	███
2018	███	███	███	███	███	███	███	███

161. Based on the above data, it is noted that the number of apps downloaded from the Google Play Store were ██████ in 2013 which grew to ██████ in 2018. In comparison, number of app downloads from Samsung Galaxy App

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[15] Data provided by the respective app store developer/ OEM

Stores were ████████, from Huawei App Stores ██████████████, from Xiaomi's App Store were ████████, from Oppo App Store were ████████ and from App Bazar were ████████, in 2018. These numbers of app downloads from competing app stores of Google Play Store appear miniscule when compared to the apps downloaded from the Google Play Store which were ████████ in 2018. A bare perusal of this data evidences that in terms of number of app downloads, Google's Play Store is way ahead of its competitor app stores over the years.

162. On basis of the above analysis and data, the Commission notes that Google enjoys a very strong position in the relevant market and the same is not upended by competition from third party app stores (which anyways is restricted to OEMs own devices only).
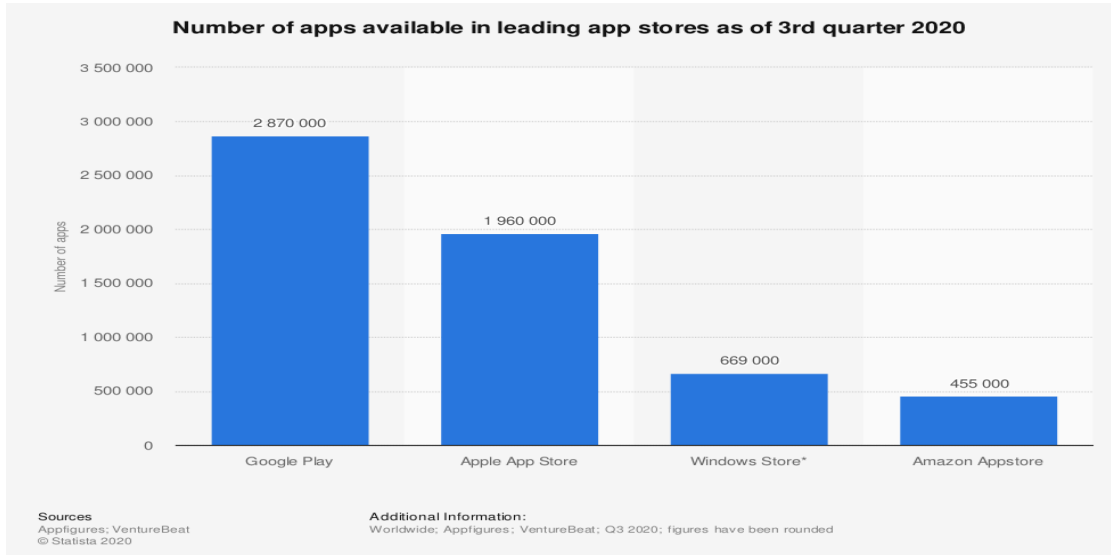
   b.   Quantity and popularly of apps available in Google Play Store

163. Another directly linked criteria to assess the economic strength of Google in the relevant market is the quantity and popularly of apps available on the Play Store. Based on the available data, the Commission notes that the Play Store is the app store with the largest quantity of apps. As per the data available from Statista, in the third quarter of 2020 (worldwide data), Android users were able to choose between 2.87 million apps, making Google Play app store with the biggest number of available apps therein. This is despite the fact that Apple App Store and Windows Store whose data is also included in the chart below, are not part of the relevant market. A screenshot of the said data is as follows:

Graph 3: Number of apps available in leading app stores as on 3rd Quarter 2020

Number of apps available in leading app stores as of 3rd quarter 2020

Google Play — 2 870 000
Apple App Store — 1 960 000
Windows Store* — 669 000
Amazon Appstore — 455 000

Sources
Appfigures; VentureBeat
© Statista 2020

Additional Information:
Worldwide; Appfigures; VentureBeat; Q3 2020; figures have been rounded

164.   Further, the below mentioned graph provides the insight into number of apps that are available on Google's Play store for users specific to India:

Graph 4: No. of Apps on Google Play Available to users in India over the years
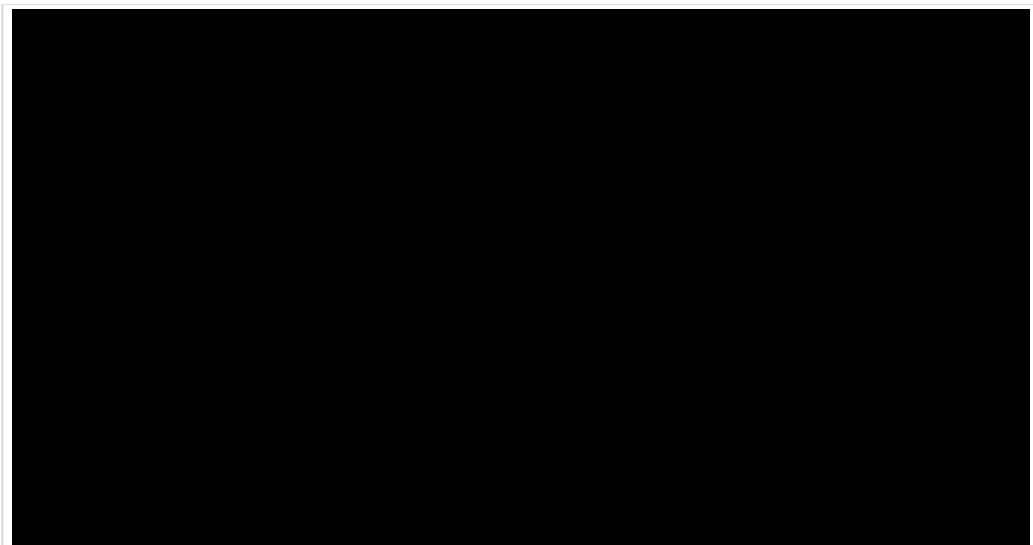
165. As per Google's own submissions, number of apps on Google Play available to users in India rose from ▮▮▮▮ in 2013 to ▮▮▮▮ in 2019. In contrast, Aptoide offered around ▮▮▮▮ apps while Amazon app store offered ▮▮▮▮ apps in 2019. Similarly, Samsung Galaxy app store offered ▮▮▮▮ apps in 2019.

166. Based on the data available, the Commission notes that other app stores lagged way behind in terms of number of apps available therein and seemed to provide no choice to customers or any credible alternative to Google Play Store in the market for app store for Android OS.

    c.   Entry Barriers: Requirement of significant investment

167. Based on the available information on record, the Commission notes that the relevant market for app store for Android OS is characterised by various entry barriers. The requirement of significant investment in developing, marketing, and updating an app store for Android OS is one of them. It is also noted that establishment of an app store for Android OS requires significant investment in APIs and automatic update functionalities. Google Play Service, introduced by Google in 2012, is a software layer working in the background of Android that is used to update Google apps and other apps from Google Play.

168. The Investigation has compared the investments made by different app store developers and noted that Google invested more than ▮▮▮▮ in Play Store, in the year 2018. However, compared to Google, Xiaomi's investment in its app store in India has been negligible at ▮▮▮▮ crore in 2018 and ▮▮▮▮ in 2019. Aptoide invested around ▮▮▮▮ in 2018 and Huawei has made cumulative global investment of around ▮▮▮▮ in Huawei App Gallery till 2018.

169. In this context, it is also pertinent to note the submission of two third parties, as follows:

169.1. According to Amazon,

'…*Amazon dedicated a large number of employees to educate developers and convince them to make their apps compatible with Fire OS. Amazon also worked with the third-party developers to address the compatibility issues arising in this regard. Amazon has also built a significant content operations team, consisting of hundreds of employees, to review apps prior to distribution, including for content appropriateness, functionality and bugs and errors…*'.

169.2. According to Samsung,

'*…We can characterized the type of investment in connection with R&D for its for Galaxy Store as application updating, introducing the new features on service, upkeep and maintenance and error detecting and correcting, security check and server management….the exact amount of investments made on R & D, up keep and maintenance, updating etc. by Samsung on its Galaxy Store is not available, however, the approximate expenditure maybe above few million USD...*'

170. Thus, the Commission notes that the relevant market requires significant investment which act as a major entry barrier.

d. Entry Barriers: Lack of availability of compatible APIs

171. Another entry barrier noted to be operating in the market is the lack of availability of compatible APIs. As already stated *supra*, Google Play Service APIs, is a software layer working in the background of Android that is used to update Google apps and other apps from Google Play. Most of the Android apps use Google Play Services API for their functioning and without access to same, these Android applications will simply fail to work. Google Play Services are provided along with Google Play and are not available separately. Moreover, any update to the Google Play Service is provided by Google automatically on all supported devices *via* the Google Play Store only. Whilst it is technically feasible to ship a phone without Google Play Services, OEMs who do so, will be at a significant disadvantage to OEMs that ship with Google Play Services. Android devices in which Google Play Store and Google Play Service is not pre-installed, may face difficulty in automatic software updates, new releases, bug fixes and enhancements included in the new versions of Android. Thus, the OEMs has to

agree to take license of Google Play from Google, in order to have access to Google Play Services.

172.   The same is corroborated from the below submission of Google:

> *"..An application programming interface ("API") enables connections between two or more services. Google builds various APIs, including:*
> *a. APIs distributed as part of the open-source Android OS, which enable third party applications to communicate with Android and function correctly on Android devices ("Android APIs"); and*
>
> *b. Proprietary APIs distributed as part of GMS, which enable third party services to communicate with Google's services such as Maps, Search, Gmail, and Translate on Android ("Google APIs").* ***Google Play Services houses these Google APIs. Google Play Services is a software layer included in Google Mobile Services that works in the background of Android inter alia to update Google and other apps from Google Play and enable developers to use the newest Google APIs for popular Google services****. Housing Google APIs in Google Play Services ensures effective integration of the latest Google APIs, thereby alleviating developer concerns that Android devices will not support their apps if they use Google services. Updates to Google Play Services, including new Google APIs, are also distributed automatically by the Google Play Store, meaning developers can take advantage of the latest Google services in their apps, even if an OEM does not update the underlying Android operating system version.*
>
> *Like the Android OS, Android APIs included in AOSP are open source. They are freely available to developers of compatible Android variants, and developers of incompatible Android variants (forks).*
>
> ***Google APIs are available on compatible Android variants where GMS is preinstalled****. ....to preinstall the GMS apps on an Android device, OEMs must sign the ACC, thus ensuring their Android build, even if highly customised, meets certain technical requirements so that Google's apps and also third-party Android apps will function correctly. Developers of incompatible Android variants are not AFA/ACC signatories, and so are unable to license GMS.* ***Google APIs are not therefore available on incompatible Android variants****.*
>
> **(Emphasis supplied)**

173.   In this regard, it is noted from the reply of Amazon that barriers that prevented it from scaling up its app store business include linking of Google's proprietary apps

which is not permissible in case of devices operating on forked version of Android. The third-party app developers build their apps using APIs. Majority of the most popular apps on Google Play Store rely on Google Play services APIs (that are not part of the Android operating system) to provide functionality that is essential to the operation of the apps. For instance, Google's popular Maps API, Cloud Messaging API, In-App Purchasing API, Google+ API, and many other APIs are all made available through Google Play services and not through the Android OS itself.

174. Amazon has further submitted that by excluding these APIs from the Android OS and not making Google Play services available on forked versions of Android, Google prevents apps that use these APIs from running properly on forked versions of Android without any additional developmental work which involves a cumbersome technical process, significant costs and time.

175. Based on the above, the Commission notes that a competing app store has to offer not only the store but also develop its own APIs with similar functionalities as those of Google Play Services. Thus, the un-availability of Google Play services APIs also acts as an entry barrier in the relevant market. This aspect of Google Play Service APIs has also been discussed in detail while assessing the alleged conduct of Google.

   e.   *Entry Barriers: Side loading of apps is a technical challenge*

176. It is noted that Google does not allow distribution of a competing app store through Play Store *i.e.,* an app store is not available for download by the user through pre-installed Play Store. Thus, any competing Android app store may face barriers in terms of discoverability by users as such app store can only be downloaded from the website and not through Google Play Store, which is also referred to '*side loading*'. Google argues that users can install additional app stores or apps onto their devices *via* side loading. However, Google itself discourages the users from downloading apps from outside of the pre-installed

app store by presenting them with a warning '*installing from unknown sources may be harmful to your device and personal data*' and also requiring them to agree that '*they are solely responsible for any damage to the device or loss of data that may result from using these applications.*'

177. In this regard, Google made the following submission:

> '*...Google notifies users of the potential risks of downloading apps directly from the internet, and requires users to confirm that they wish to install an app through a method that was not preloaded on the device (i.e., from an "unknown source") by adjusting their settings. This protects users from accidental downloads, which may be harmful.*
>
> *Thus, the "unknown sources" procedure is a general safety precaution, not targeted at any specific type of app or app store, that ensures a quality user experience. It lowers the risk of a user unintentionally installing harmful apps on their device, while enabling users to choose to do so if they prefer. Android simply asks users to confirm that they want to install new software. Requiring Google to remove this prompt may result in user harm, thereby degrading the Android experience.*'

178. However, various third parties through their submission have negated these assertions of Google. Extract from some of such third-party submissions and other reports, are as follows:

    178.1. According to Aptoide, '*...the biggest challenges to grow the user base and app portfolio are related with restrictions are imposed by Google (and Google Play Store) to other market players, due to Google's dominant position in the market.*' The relevant extracts from Aptoide is rehashed as under:

> '*...1. To **install Aptoide and other APP Stores which are not available on Google Play, users need to go through a process of enabling "unknown sources" and give permissions to those apps.** This **limits the possibilities of expanding Aptoide user base**, because the install (process) of Apps is not user-friendly and induces uncertainty in users about the security of the process and about the apps;*
>
> *2. **Aptoide and other App Stores or Apps distribution channels are not allowed to be published and distributed in Google Play Store**.*

*This situation, combined with (i) the fact that Google Play Store comes pre-installed in almost all devices and; (ii) **the distribution of Apps outside Google Play Store has restrictions imposed by Google to device manufacturers, causes a clear disadvantage in accessing the market for alternative stores;***

*3. Restrictions imposed to device manufacturers (OEMs) which have to pre-load Google Services and apps in their devices. In MADA agreements with OEM's Google determines that Google app must be installed in a bundle and also establishes guidelines about how Google apps should be highlighted in the user's device. **Because Google has a dominant position in the licensable mobile operating systems and search, the bundling of apps and services such as Search, GMS, App Store, Maps, Video, Email, restrict the options of users to adopt other services and reinforces Google position in the market....'***

(Emphasis supplied)

178.2. Data Ingenious Global Limited (an app developer) has stated as follows:

*'...at the outset, **Google discourages download and installation of apps from outside Play Store on devices which run on Android OS**. This process has been made very tedious both for users as well as app developers. **Unlike apps on the Google Play Store, users cannot download and use apps from outside the Play Store on just clicking on a link to install such an app and have to take several additional steps***...'

(Emphasis supplied)

178.3.   PhonePe Private Limited has stated that Google discourages side-loading of the apps. The relevant portion of the said reply is reproduced as under:

*'...37. In addition to problems created by Google Play Protect, **Google continues to strongly discourage side-loading apps by stating that these are apps are from "unknown sources" and may harm the user's device. Google's policy states that if a user downloads apps from unknown sources: (i) the user's phone could get damaged or lose data; and (ii) the users' personal information could be harmed or hacked.** A majority of users are **discouraged by Google's warning and do not side-load applications**. This makes Google's Play Store the only viable place for a user to download and install apps, thus, restricting and forcing app developers to route their app through the Play Store.*

*38. **Google utilizes these so-called 'security measures' to create a barrier around its basket of apps which lets them flourish at the***

*cost of competitors. This barrier is further reinforced through the mandatory and non-negotiable **Google Developer Agreement which states that, "you may not use Google Play to distribute or make available any Product that has a purpose that facilitates the distribution of software applications and games for use on Android devices outside of Google Play."***

*39. Therefore, competing app stores (i.e. Galaxy app store, Indus app store, etc.) are not listed on the Google Play Store and remain inaccessible to users. Further, **Google also restricts app developers from offering app-store like interfaces within their apps (mini app stores).** This stymies the ability of app developers from enabling the discovery of apps within an app. **This policy is akin to Google intruding in the development process of the app, and also controlling the user experience which constrains the creativity of app developers to provide a better in-app user experience.** Google's policy consistently limit innovation – throttling the growth of Indian app developers and stagnating user experience.*

*40. Google also creates barriers to updates for side-loaded apps. **Google Play Services is responsible for the updation of Google's own apps and third party apps downloaded from the Google Play Store**. Play Services automatically notifies the user on the availability of an update and also provides for automatic updation without manual user's intervention. **However, this same service is not available for any app that has been side-loaded on a smart mobile device…'***

(Emphasis supplied)

178.4. One97 Communications Limited in its submission has stated that,

*'...it is important to note that **Google discourages download and installation of apps from outside Play Store on devices which run on Android OS. Google has made the process of installation of apps from outside the Google Play Store very tedious both for users as well as app developers.** Unlike apps which are accessible on the Google Play Store, users cannot download and use apps from outside the Play Store on just clicking on a link to install such an app. Users need to take several additional steps to download and install the app. Users need to go to 'Settings' under the 'Security' tab and select the option of 'Unknown Sources to allow installation of apps from unknown sources.' On clicking on this link, the Android OS system gives a security warning to the user. Google Play Store also warns users against download of certain apps and disables some apps on devices. Google claims that it detects malicious activities and disabling those apps which engage in such activities.*

There is however no clear policy about what would be considered as 'malicious' in this regard…'

(Emphasis supplied)

178.5. The DG also referred to *US Antitrust Subcommittee Report*, which made following observation in this aspect*:*

> *"Google does permit sideloading on Android devices, but developers find that given the option, **consumers prefer to install apps from app stores and few opt for sideloading**. Google has created significant friction for sideloading apps to Android devices. One developer explained to Subcommittee staff that sideloading entails a complicated twenty-step process, and users encounter multiple security warnings designed to discourage sideloading. Additionally, software developers that have left the Play Store to distribute software to Android users via sideloading have experienced precipitous declines in downloads and revenue and report problems updating their apps. **Thus, the option for sideloading apps on mobile devices does not discipline the market power of dominant app stores**…*

179. Based on the above, it is noted that the process of side loading of alternative app store or apps, which involves risk of malware or harmful applications, acts as an entry barrier for the competitors in the market for app store for Android devices, as users that do not have technical knowledge would not like to run the risk of side loading. The cumbersome process of side loading and security threats involved further enhances the dependence of Android users on Google Play Store. Moreover, sideloading of apps does not allow automatic update functionality for the apps, which deters the users as well as app developers, in general to rely on side-loading a viable option. In other words, the ability for consumers to sideload apps (installing apps without using an app store) does not exert any constraint on Google in the Android app store market.

180. In relation to sideloading of apps and automatic updation of the apps sideloaded in the device, the Commission notes that Android 12 update (which was released in October 2021) allows the automatic updating of an app distributed outside of Google Play, where users have given the appropriate consent. However, the

Commission is of the view that *firstly*, the Commission is examining the conduct of Google on ex-post basis *i.e.,* where it was difficult to sideload the apps and users were not opting for side-loading. *Secondly*, Android 12 which has apparently allowed automatic update of side-loaded apps, was released only in October 2021. The impact of such change, if any, on the user behaviour and the app developers' option for distribution channels would manifest in future. As of now, there is no evidence that such change as well as the manner in which such change would be implemented will result in favour of the users and the app developers.

f. App Developers focus on developing apps for Play Store amongst the app stores for Android OS

181. The DG has also examined the importance placed by app developers on the Google Play Store in the Android OS for distribution of their apps. It is noted that Google Play Store has attracted the largest number App developers globally as well as in India due to its higher variety of supported devices and cheaper handsets.

182. ████████████████████████████████

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183. The app developers prefer to develop apps for Google Play Store as compared to any competing Android app store due to its vast user base and key features. The DG has noted that there are more than 23,841 Indian publisher/ developers on Google Play in India and there are more than 119,687 apps from Indian publishers

on Google Play. Further, Google Play Store is significant from the point of view of app developers which has been acknowledged by Google as well as other OEMs and app developers.

184. In this regard, Google has submitted that,

> *'...Android's free license attracts OEMs to Android, thereby increasing the number of available Android devices and customer using those Android devices. This, in turn, attracts developers to Android. Today, there are thousands of Android devices manufactured by numerous OEMs all competing for users. By developing an Android app, developers enjoy the opportunity to compete for millions of users' attention...'*

185. Further, it is pertinent to note the submissions of few third parties which are as follows:

   185.1. If the competing Android app store were to replace Play Store, app developer has to incur an extra cost when switching to such App Store. In this regard, Amazon has stated that.

> *'… a vast majority of developers, if not all, develop Android apps primarily for distribution through Google Play. If a developer decides to make its app available for Fire OS devices, it typically makes the work necessary to port the app to Fire OS, a secondary priority. This is because the distribution of an app through Google Play enables developers to access far more devices, than for example, through the Amazon Appstore. This increases user demand for the licensable Android OS and incentivizes mobile application developers to develop apps compatible with Android OS, thereby, further increasing the value of the Google Play app store for app developers, OEMs/ODMs/CMs and users…'*

   185.2. According to Huawei,

> *'...the major entry and expansion barrier of a new player is the availability of its own ecosystem and it is not easy to migrate the users from the app store he is relying on totally a new app gallery....most of Android apps have got GMS core integrated which enable the apps to be compatible with Android OS. Thus, the developer has to pay a high cost for adapting his app to a new OS which discourages him to support the new OS...'*

   185.3. OPPO has submitted that,

"…*third-party app stores on Android OS are difficult to survive because:*

*1. **They are** forbidden **to be released on Google Play according to Google Play's rules.***

2. They are not available on Google Play, thus they are not accepted to advertise in main ad platform like Facebook, Google, etc. to gain users. They only get poor traffic quality and few users.

3. They are not available on Google Play, thus they are not earning enough, not being accepted to integrate any monetization SDK like Facebook Audience Network.

*4. They are not recognized by developers on Android OS due to the low user base and influence. **Developers don't have enough motivation to enter other app market like OPPO App store, because they think Google Play is the mainstream distribution platform***…"

(Emphasis supplied)

185.4.   According to Samsung,

'…*as Google Play Store is already pre-loaded on all Android phones hence the primary entry barrier that a new app store player may face is that of user base. A new app store player will possibly take lot of time to achieve the substantial coverage in terms of users. Secondly, such a new app store player must struggle to show its relevance to any user as to why any user should use the new app store instead of Google Play Store. To show its uniqueness and supremacy over a well-established and already pre-loaded Google app store may not be an easy task…*'

'…*additionally, **another very important point to be considered is that of the challenges a new app store player may face in terms of attracting app developers to develop app for its new play store** (in addition to or in exclusion to Google play store) further, such a new app store may find it challenging to upload/manage and distribute app on a completely new eco-system. In fact, **setting up a new eco-system which includes developing an operating system, building large user base of service for developers to have some incentive to build, hosting and distribution of Apps etc. will also be a challenge.** 'Trust' in a new App store may also be an important factor **and lack of trust may be an impediment in the entry and/or expansion of a new App store as an app store can be a source of malware which could adversely affect user's devices**…*'

(Emphasis supplied)

186. Based on the above analysis, the Commission observes that within an ecosystem, the app developers prefer to focus on the development of apps for an app store which can facilitate reaching out to maximum number of users on Android OS. Given the sheer scale secured by Google for itself through pre-installation on virtually all of the Android devices has prompted to app developers to devote their resources in developing apps compatible with Play Store. As already stated, the OEM specific app stores have limited reach and therefore, the app developers would have to port/ modify their apps to make them compatible with each of such app stores. Whereas, through Play Store, they can reach 100% of Android users through one distribution channel. This has led to indirect network effect in favour of Play Store, wherein large number of app developers on the Play Store fuelled the number of users on the Android OS and *vice versa*.

g.   *Importance of play store from user's perspective*

187. The Commission notes that Google Play Store is significant from the point of view of smart mobile device users who consider this as a '*must have*' app. This has been acknowledged by Google as well as most of the OEMs. The relevant extracts from these submissions are as follows:

    187.1. According to Google,

> '*...the Play Store is a reliable and secure app store that users frequently used to search for and download apps...*'

    187.2. According to Samsung,

> '*...The significance from the point of view of users possibly is that Google Play store makes almost every app available to the users at one place/ platform. Further, history of apps installed by any user by way of Google Play store is centrally available at all times and upon migration by a user to a new device, same apps, along with connected data (if user opts for the option) can be installed with ease by a user...*'

    187.3. According to Huawei,

> '*...According to the agreement between Google and Huawei, Google's Play Store is required to be preloaded in all Huawei smart*

mobiles using GMS. Currently, there is no comparable substitute of Google's Play Store, as it has acquired a very high market share. Google has packed all its core services into GMS CORE, and most of Android apps have got GMS CORE integrated. While Google only allows GMS CORE to be installed in the mobile devices approved by itself, which leads to the unavailability of most Android apps to those mobile devices not approved by Google…'

187.4. According to Micromax,

'…Google Play Store is significant from user's preferences, demand, choice of applications available on Google Play Store, its compatibility with Android based OS…'

188. Given the fact that Google's Play Store offers highest number of apps and also offers a greater quality of apps, the Android device user seems to have a preference for Google Play Store and consider it as a '*must have*' app. This is also evident from the app download data as mentioned *supra* wherein despite the presence of a competing app store of the OEM concerned, the number of app downloads from Play Store were higher. Thus, the preference of the user also reinforces the dominant position of Googly in the relevant market for app stores for Android OS in India.

   h.   App store markets are characterized by network effects

189. The Investigation has revealed that the app store is a two-sided market in which Google has been able to attract a large number of Android users on one side (due to presence of large number of apps) and large number of app developers on the other side (due to potential to reach a large audience). Google thus enjoys a strong 'network effect' of large user base and apps developers in the market for app store for Android OS, which makes Google's position unassailable.

190. Commenting of the significance of Google Play Store for the App developers, Samsung has submitted that,

   *'…the **significance from the point of view of App developers is that not only can the App developers make their apps available on a common and widely accessed platform** (which is available across all android*

*devices irrespective of make) but **they can also manage distribution of their app(s) across numerous android devices from one place…'***

(Emphasis supplied)

191. In this regard, it is also important to note the submission made by Xiaomi that,

*'…the primary challenge for a new player in the app store market would be to build a healthy ecosystem of app developers. App developers must be sufficiently incentivized and motivated to upload and update their apps on a new app store. **Because Google's Play Store has a much stronger user recognition than other app stores, app developers prefer to create newer/ compatible versions of their apps for Google's Play Store over other app stores.** Further, app stores developers also need to make significant investment in research and development in terms of time, resources, effort and capital, to build and improve app distribution abilities like improving search and recommendation algorithms. Lastly, new app store developers may face challenges in relation to market penetration. This is because signatories to the MADA are prohibited from pre-installing third party app stores on their devices…'*

(Emphasis supplied)

192. The network effects exhibited by app store markets results in a vicious circle where a limited app selection due to limited number of app developers reduces the attractiveness of the same for the end users on one hand. Simultaneously, limited number of end users reduces the incentives for app developers to write apps for the new app store. Thus, network effects results in entry barriers for new entrants and make it much more difficult to achieve a commercially viable scale.

i.   *Lack of countervailing buyer powers of OEMs*

193. Few mobile device manufacturers have developed their own app store(s) *viz.* Samsung, Xiaomi, Vivo, Oppo, *etc.* which are pre-loaded in their Android smart mobile devices, in addition to Google's Play Store. However, based on the replies filed by various OEMs, the Commission notes that none of such OEMs consider their app store to be substitutable with Google's Play Store and therefore, they never asked Google to exempt them from pre-installing Play Store in the Android

devices. This signifies the importance attached to Google's Play Store by the OEMs. Further, this is attributable to high popularly of Play Store from the user's perspective, who consider it as indispensable in the Android devices mainly due to number and quality of apps available in Play Store, its automatic update functionalities and security features due to its close link with Google Play Service. In this regard, it is apposite to refer to the replies of two OEMs *i.e.,* Samsung and Xiaomi, as reproduced in previous section highlighting the competitive edge of Play Store and the challenges before the other app store developers.

194. Given this dependence of OEMs on Play Store, it is noted that OEMs lack countervailing bargaining power *vis-à-vis* Google. In this context, it is apposite to note replies of some of the OEM to show that device manufacturers lack adequate bargaining power, as follows:

194.1. Samsung which pre-loads its own app store *i.e.,* Samsung Galaxy App Store in its Android devices has stated that,

> *'...Samsung has not requested Google for exemption from pre-installation of Play Store on our Android devices. Many of Android OEMs including Samsung sell their Android devices with Google Play Store pre-installed to fulfill users' need as Google Play Store provides the most variety of apps and contents available to users...'*

194.2. Huawei, which pre-loads its own app store *i.e.,* Huawei App Gallery in its Android devices has stated that,

> *'...there is no exemption from Google to Huawei regarding the pre-installation of Google Play Store on our Android smart mobile devices...'*

194.3. Xiaomi which pre-installs its own app store *i.e.,* Xiaomi App Store/ Mi Store in its Android devices has stated that,

> *'...Xiaomi has not requested Google for exemption from pre-installation/ occupying less space by Google's Play Store on its Android smartphones. Not pre-installing Google's Play Store is also likely to lead to negative user feedback, which is why Xiaomi*

would prefer to pre-install Google's Play Store on its Android smartphones…'

194.4. OPPO, which pre-loads its own app store *i.e.,* OPPO App Store along with Google Play Store in its mobile devices has mentioned that,

> *'…OPPO didn't request any exemption from Google. If the company doesn't pre-install Google Play, then the company is not fulfilling its MADA and CTS requirements…'*

195. Thus, the Commission notes that in view of the large number as well as quality of apps available on Google Play Store, its automatic update functionalities, and close integration with Google Play Services, the OEMs have insufficient countervailing buyer power either to switch to the in-house app store or any third part app store for Android or to negotiate the terms & conditions seeking exemption from pre-installation of Play Store in their devices. The OEMs perceive that availability of Play Store is indispensable for commercial success of their respective handsets. Thus, the OEMs consider Play Store as a '*must have*' app in Android OS based devices.

j. App Store for non- Android smart mobile OSs

196. The DG has also examined the competitive constraints, if any, from the app store for non- Android OS and concluded that they exercise inadequate indirect constraints on Google's dominant position in the Indian market for Android apps store. In this regard, it is noted in order to switch to non-Android app stores such as Apple App Store, the users of Play Store would require purchasing a new smart mobile device running on non-Android OS such as Apple. However, users would not change the Android OS primarily due to higher switching cost (already discussed in detail *supra*). Thus, Apple's App Store available in App iOS does not pose any indirect competitive constraints on Google.

197. Thus, based on the foregoing comprehensive analysis, the Commission holds Google to be dominant in the relevant market of app stores for Android smart mobile OS in India.

Google's Submissions

198. Google has argued that the Investigation Report erred in its assessment of market definition and dominance for Play as it excludes app stores installed on other platforms, in particular, the Apple App Store, which runs on Apple iOS, as well as other distribution channels available to developers. The arguments made by Google are summarised below:

   198.1.   The Investigation Report fails to satisfy the Act's legal requirements to define a relevant product market. The DG erroneously ignored the constraint from Apple's App Store, which competes head-to-head on innovation and quality with Play. Further, in addition to Apple's App Store, Play faces competitive pressure from multiple other distribution channels both within and outside of Android.

   198.2.   The Investigation Report focussed on the issues of sideloading, supply side issues, costs to port apps between Android versions and other platforms, differences between app stores and OSs and Google's agreements with OEMs, which in fact has nothing to do with substitutability of Play and other products based on characteristics, prices and intended use.

   198.3.   The DG also failed to identify the '*consumer*' for the purposes of market definition assessment. In this regard, Google submitted that while defining the market for app stores for Android OS, the DG did not identify as to who the consumers were; although, at several places in the investigation report, the DG has discussed OEMs, app store developers and app users.

   198.4.   Google has denied the findings of the Investigation Report that app stores on non-Android platforms do not compete with Play because users do not switch away from Android devices due to switching costs associated with

moving to a non- Android device. Google argues that available evidence suggests switching between Android and Apple including their respective app stores. Google also submitted that while purchasing a smartphone for the first time, there are no conceivable switching costs for users.

198.5. DG Report mentions the difference in the average price between Android and Apple devices as a reason for concluding that the Android OS and Play Store are not constrained by Apple's iOS and its App Store. But the difference in the average price between Android and Apple devices does not indicate a lack of competition between Google Play and the Apple App Store.

198.6. Google also submits that, as per the DG, Apple does not exert competitive pressure on Android and Play because of its "negligible market share" in the "Indian smart mobile handset market". Google denies such contentions *inter alia* because app stores compete with each other on both a global and local basis.

198.7. Google also argues that Apple is the leading app store player, which precludes Play's dominance. Revenue-based market shares, based on ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ data, reveal that Apple App Store has a ▮▮▮ market share globally, much higher than Play's ▮▮ share.

198.8. Besides Apple, Google argues that there are many other competitive constraints on Play including other Android app stores, preloaded Android OEM and third-party apps, sideloading and peer-to-peer sharing, web-based services as alternatives to native apps, and software distribution channels on other platforms for particular app or software categories. Competitive constraints also include file sharing services, which are very popular in India and are regularly used to distribute apps outside of conventional app stores.

199. The Commission has perused and examined various submissions of Google as summarised above, however, the same is not convincing because of following reasons:

   199.1. An app store is a specific kind of application, which offers marketplace services to connect apps/app developers with users. These app stores are specific to the OS for which it has been developed (as already discussed *supra*) and cannot be used interchangeably due to difference in source code and APIs. Apple's App Store can be used on iOS whereas, Google's Play Store can be used on Android OS.

   199.2. The demand for the app stores come from three different sets of consumers *i.e.,* (a) Smart device OEMs who wish to install an app store to make their smart devices commercially viable and marketable; (b) app developers, who want to offer their services to the end users; and (c) end users to wish to access app stores to access content or avail other services. For reasons already discussed above, an OEM can only choose to pre-install an app store which supports the OS being used by the OEM. Since, presently, there are only two smart device OSs prevailing in the mobile ecosystem *i.e.,* Apple's iOS (which is a non-licensable OS) and Android OS, which is virtually and practically the only OS available to those OEMs who are dependent on third party OSs for their smart devices. Thus, once the OEM has chosen to manufacture smart devices using Android OS, they can only choose app stores which are written for Android OS (*viz.* Google's Play Store and other OEM specific app stores). For these OEMs, Apple's App Store is not an option at all and thus cannot be considered as a substitute.

   199.3. Once the OEM has installed particular app store on its devices, the same becomes a gateway between app developers and the users. An app developer to reach the user base on a particular OS/ ecosystem (*i.e.,* Android or iOS), must rely on the app store on that particular OS only. In

other words, an app developer cannot reach an iOS user through Google's Play Store and an Android user through Apple's App Store. Therefore, the two app stores are not considered as substitute by the app developers. The app developers, in order to expand their reach to maximum set of consumers, would not like to confine their offerings exclusively to one of the ecosystems as it would imply losing a sizable portion of the potential consumers' revenue who are available on the other platform. Therefore, they multi-home and offer apps on both the platforms. Further, recognising cross side network effects, app developers have to develop and innovate for each of the ecosystem to be able to maximise their revenue and provide a wider consumer choice.

199.4.   Now, examining the substitutability between Google's Play Store and Apple's App Store from an end user perspective, the Commission notes that the natural corollary of the above mentioned reasoning is that an Android user cannot use Apple App store for downloading apps on her device. Similarly, an Apple user cannot use an app store meant for Android OS to download apps. The end user does not multi-home across app stores on different operating systems/platforms for their requirements. Thus, from an end user perspective also, Google's Play Store and Apple's App Store are not substitutable. The Commission further notes that there might be some degree of competition between the two mobile ecosystems *i.e.,* Android and Apple, however, that too is also limited at the time of deciding as to which device to buy. At that stage also, the Commission is of the considered view that the primary and the most significant factor in the mind of an end user is the hardware specification and the device price. The Commission find it hard to accept that the end user also considers the app store present in the respective OSs as the primary factor, while deciding as to which device to buy. Google has not presented any evidence let alone a convincing one to establish the same.

199.5. Further, in the present matter, the allegations have been made from the perspective of the OEMs. In this regard, it is apposite to note the following observations of the Hon'ble Supreme Court of India, in Civil Appeal No. 6691 of 2014 in the case of *Competition Commission of India v. Co-ordination Committee of Artists and Technicians of WB. Film and Television and Ors*.:

> "......*The relevant product and geographic market for a particular product may vary depending on the nature of the buyers and suppliers concerned by the conduct under examination and their position in the supply chain. For example, if the questionable conduct is concerned at the wholesale level, the relevant market has to be defined from the perspective of the wholesale buyers. On the other hand, if the concern is to examine the conduct at the retail level, the relevant market needs to be defined from the perspective of buyers of retail products...*"

Following the observations of the Hon'ble Supreme Court, the relevant market in the present matter, needs to be defined from the perspective of the OEMs. Accordingly, for the OEMs manufacturing smart mobile devices based on Android OS, Apple's App Store is not an option at all and thus cannot be considered as a substitute.

199.6. The Commission of the view that the limited competition between Android and Apple ecosystems (and not between the respective app stores *per se*) from the perspective of end user, is not sufficient to constrain the behaviour of Google while laying down policies *w.r.t.* OEMs, which is the basis of the present matter (as already discussed *supra*).

199.7. Even from the two other constituents of the demand side of app stores *i.e.,* app developers and the end users, the Commission find that there is no substitutability between Google's Play Store and Apple's App Store. Accordingly, the Commission is not convinced by the arguments of Google and notes that Apple's App Store cannot be considered to be the same relevant market as that of Google Play Store. Once Apple App Store

is excluded from the relevant market for Google Play Store, there is no question of exercising any competitive constraints from Apple App Store.

199.8. Further, Google has attempted to use a literal interpretation of Section 2(t) of the Act, to claim similarity between Play Store and Apples' App Store based on characteristics, prices and intended use. After examining the averments of Google, the Commission is of the view that *firstly*, the interpretation of any statutory provision and specifically of economic legislations, cannot be divorced from the commercial reality and technical feasibility. For various reasons already discussed above which reflect the actual market outcomes, Google's Play Store and Apple's App Store cannot be considered as substitutes. *Secondly*, even the literal interpretation adopted by Google is also devoid of any merit and thus needs to be rejected. Section 2(t) provides that relevant product market comprises of all those products or services which are regarded as *interchangeable or substitutable by the consumer*, by reason of characteristics of the products or services, their prices and intended use. In the present matter, none of the constituents of the demand side of app stores considers Google's Play Store and Apple's App Store as interchangeable or substitutable, as discussed *supra*.

199.9. The claim of Google that it competes with Apple's App Store is also demolished from a bare perusal of the fact that Google, as an app developer, offers its proprietary apps *viz.* Google Search, Google Chrome, Google YouTube, Google Maps, *etc.* on Apple's App Store (or erstwhile Windows Store) but not on the other app stores for Android OS. Google realises that app stores are an important gateway to reach the users in each of such ecosystems. Google has secured access to 100% of the users on the Android platform by way of imposing pre-installation through MADA on all Android devices. However, in order to reach users on iOS platform, Google need to provide its apps available for download on Apple App

Store. In pursuit of this objective, Google has also entered into an agreement with Apple for being the default search engine on Safari Browser. The Commission is of the view that like any other app developer, Google cannot afford to lose a sizable portion of the potential consumers available on iOS platform. This in itself, indicates that Google's Play Store and Apple's App Store are two different distribution channels for reaching out to, two distinct set of customers.

199.10. Google also claims that apart from app store, there are other distribution channels for the apps *viz.* sideloading, web apps, file sharing, *etc.* The Commission notes that *firstly*, Google is conflating the market delineation from the OEM's perspective with market delineation from the app developer/user perspective. It is not feasible for an OEM to market a smart device without an app store. The OEM cannot simply rely on these theoretical possibilities of other distribution channels for the apps and expect users to meet their requirements of apps from these sources. Google has not placed any example on record, where an OEM has launched or marketed a device without an app store. *Secondly*, these other distribution channels have inherent flaws and limitations and thus, the same cannot be considered as substitute to distribution of apps through app stores. The problems associated with sideloading have already been discussed *supra*.

200. Google also argues that the OS and app store can compete together as a system against other mobile OSs and App stores. In this regard, it is noted that there are multiple reasons as to why the same is not found to be the case. App stores and smart mobile OSs are distinct products with different functionalities/ purpose. The OS is system software that controls the basic functions of a smart mobile device while the app store is an online marketplace which act as gateway between users and the app developers and thus, enables the users to download, install and manage the app. Further, there are separate set of players who offer smart mobile OS and those who offer app stores. *E.g.,* Aptoide only offers an app store for

Android but does not offer any smart device OS. Similarly, OEMs have their respective app stores which are pre-installed on their devices along with Play Store, but they are fully dependent on Google for the Android OS. Having said that, the Commission is of the view that even if Google's arguments of a systems market approach were to be accepted, the findings in respect of lack of competitive constraints would remain same. The choice of the app store is dependent on the OS being installed in the device and accordingly, the competitive constraints in the OS market would affect the competitive constraints in the app store market. As such, the two mutually reinforce each other in terms of thwarting competitive constraints.

201. The Commission has holistically examined various averments of Google in relation to competitive constraints from Apple (as detailed *supra* while delineating the relevant markets as well as assessing dominance of Google in the same) and is of the considered view that even if Google's arguments are accepted then the constraints from Apple are not significant enough to have any bearing on the conduct of Google which is under examination in the present matter.

202. The Commission notes that Play Store is by far the most important app marketplace on the Android ecosystem. Play Store is significant from the point of view of smart mobile device users who consider this as a '*must have*' app. The OEMs too perceive Play Store to be indispensable for the commercial success of their handsets. The dominance of Play Store *inter alia* stems from the strong indirect network effects that work in its favour, with its large user base on one side and a large number of app developers on the other side, who depend on Play Store to access these users and maximise their reach and revenue potential. These factors, in conjunction with Play Store's automatic update functionalities, its close integration with Google Play Services lack of substitutability between android app store and other OS app stores, and high entry barriers lead to a reasonable conclusion that Google Play Store occupies a dominant position in the relevant market of app stores for Android OS in India.

203. In view of the aforesaid, the Commission rejects the averments made by Google and concurs with the findings of the DG as to delineation of relevant market as the *market for app store for Android smart mobile OS in India* as well as Google being dominant in the said relevant market.

C. Market for general web search in India

204. Search services allow users to search for information across the Internet. The DG has noted that there are three main categories of search algorithms: general search algorithms, specialized search algorithms and search advertisement algorithms. General search algorithms run across all types of pages, whereas specialized search algorithms are specifically optimized for identifying relevant results for a particular type of information, such as news, local businesses or product information. In addition to the general and specialized search algorithms, search advertisement algorithms provide search advertisements matching a user's search query.

Relevant Market

205. The Commission notes that the DG has examined various aspects for the purpose of delineating relevant market related to mobile operating systems. Based on the analysis of the provisions of the Act and submissions of the parties, the DG has concluded that provision of general search service is an economic activity, browser and search engine are two different products, general search service is different from vertical search service as well as content sites and search on social networking sites. Accordingly, the DG has delineated the '*market for General web search in India*' as the third relevant market in the present case. Further, the DG has found Google to be dominant in this market.

206. On the other hand, Google argues that the DG's assessment of market definition and dominance related to general search services does not fit its theory of abuse. The Commission has given a thoughtful consideration to the findings of the DG

as well as rival submissions made by Google along with other information available on record and the Commission agrees with the findings of the DG for various reasons being recorded in this order.

207. Thus, the observations of the Commission in respect of delineation of the relevant market are as follows:

a) Provision of general search service is an economic activity

208. Google in its reply before the DG has stated that it provides its search services to users for free and it does not charge websites for appearing in free (organic) search results. The DG while examining this aspect noted that offering a service free of charge is an advantageous commercial strategy for two-sided platforms such as general search platforms that connect distinct but interdependent demands. General search services and online search advertising constitute the two sides of a general search platform. Search engines (*viz.* Google[16], Microsoft, Yandex) collect and process data of the users of their respective search services which is monetized on the search advertising side of the platform. Therefore, advertisers indirectly fund the general search services offered to users. Accordingly, the DG concluded that the availability of online general web search service for free to the users has no bearing while examining the violation of the provisions of Section 4 of the Act.

209. The Commission earlier had the occasion to examine this aspect in Case No. 07 & 30 of 2012 wherein, the Commission *vide* its order dated 31.01.2018[17] held that,

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[16] Google's Privacy & Terms : https://policies.google.com/privacy?hl=en&gl=in and https://policies.google.com/terms?hl=en&gl=in#toc-account

[17] Order of the Commission dated 31.01.2018 in Case No. 07 & 30 of 2012, https://cci.gov.in/antitrust/orders/details/746/0

"...users offer indirect consideration to Google by: (a) providing their attention or "eyeballs" to SERP; and (b) allowing Google to collect and use their information, both of which facilitates generation of revenues by Google as it attracts more advertisers.

*84. **The Commission observes that it has been contended by Google that the search services offered by it is free and hence there is no purchase or sale of goods or services.** In markets that are characterized with more than one side, any market assessment that relies only on the side where the service offered is free to consumers distorts the true picture and leads to a biased assessment of the nature of competition in such markets. Whenever any users places a search requisition for a particular keyword or phrase through a search engine, the search platform seeks certain information from such users such as IP address, device information, location, information regarding Operating System etc. apart from the information with respect to date and time of search and the keyword or phrase searched for. **The huge volume of such information generated from each and every search conducted on such platforms constitutes what is known as 'big data' by aid of which search platforms are able to attract advertisers, target relevant ads and conduct their search business.** ..."*

85...

86....

*87. ...**The revenue earned by search platforms' through provision of search based ad services bears testimony to not only to the potential of ad services offered by them but also negates the view that search services offered by such platforms are free.** In view of the above, the Commission disagrees with the contention raised by Google that in case of online search there is no purchase or sale of goods or services and consequently holds that online search falls within the ambit of Section 4 of the Act.'*

*88.   **The Commission notes that it is not unusual for one-side in a multi-sided market to receive services subsidized by customers on the other side of the market. Several mobile applications and websites work through an advertiser funded model and free-to-air television channels are also based solely on advertising revenue.** This, however, is not suggestive of the fact that users are not providing any consideration for availing these products and services. **In such cases also, a commercial relationship exists and the conduct of the participants in such commercial relationships can be examined within the four corners of the Act.***'*

(Emphasis supplied)

210. Given the ever expanding importance placed by technology players on collecting user data and monetising the same for funding business operations, the Commission feels that the same reasoning still holds good. Accordingly, the Commission concurs with the findings of the DG that provision of general search service is an economic activity.

   b) *Browser and search engine are different products*

211. Google had also contended before the DG that web browsers are prominent source of search queries and thus, the developers of competing search and browser apps compete with Google search service to reach million users. In this regard, it is noted that search engine and web browser are two distinct products with different functionalities and intended use. A search engine enables the user to carry out search across the databases according to the user queries. When the user inserts a search query, the search engine pops out the most relevant search results on the webpage. On the other hand, web browsers allow the user to access the internet by retrieving data from webpages.

212. Further, as noted by the DG, the web browsers also provide direct search option *i.e.,* where a user can access a website by typing its Uniform Resource Locator (URL). However, most of the users might not remember more than a handful of URLs of the websites and therefore have to rely on search engine to explore the vast alternative online sources of information. Due to the limitation of direct search through web browsers, the browsers enter into a partnership with web search engines. For example, the default search engine for the UC Browser is Google Search. Thus, as contended by Google, direct search option involving URL (search through web browser) cannot be considered as substitutable with online general web search through a search engine. The relevant observations of the Commission in Case No. 07 & 30 of 2012, on this aspect, are noted in succeeding paragraph.

c)   General search service is different from vertical search service

213.   Google has also argued before the DG that general search services face strong competition from other services such as vertical search services, social networks, and online encyclopaedias. In this regard, the DG has referred to the decisions of the European Commission in (a) Microsoft/ Yahoo Merger case[18] dated 18.02.2010 and (b) Case AT.39740 — Google Search Shopping dated 27.06.2017. The DG also referred to the Commission's order dated 31.01.2018 in Case No. 07 & 30 of 2012, the relevant extract of the same are as follows:

> '92……… **While general purpose search engines allow internet users to search information on a wide range of topics, specialized search services permit online searches for information limited to particular topics or areas such as news, shopping, travel, entertainment** *etc. Further, in response to a search query, general purpose web searches show information from across the web while specialized search results yield information from a limited source, i.e., either its own contents or from the contents of certain specified websites. Additionally, pricing and registration requirements stipulated by general purpose online searches and specialized searches are also different. Accordingly, the DG has concluded that online general web search services are not substitutable with site-specific search and specialised search services as there are variations in terms of their characteristics, intended use, price etc.….'*

> '93. **The Commission** *finds no reason to differ with the analysis of the DG and* **agrees that online general web search services cannot be substituted with direct search option by typing URL of websites in the internet browsers**. *Users may not be aware of URLs of all websites that offer the information they are searching or looking for. In these circumstances, search engines become the first port of call for a user looking for information online.* **Any comparison of general web search service with direct search option would be thoroughly misplaced**. **Further, the Commission notes that online general web search services cannot be equated with specialised search services.**'

(Emphasis supplied)

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[18] Case No COMP/M.5727 - MICROSOFT/ YAHOO! Merger procedure

214. Thus, the Commission in the said case has concluded that online general web search services is not substitutable with specialised search services. General search service enables internet users to search a wide variety of information from the entire web, whereas specialised search services enable online searches for information limited to particular topics or subjects and that too from limited sources. Further, search facility given in the vertical or specialized website is designed to assist the user in exploring the information available in the particular website or websites of the third parties. Accordingly, the search results from general search services would be relatively broader and search results from vertical search services would only be a subset of these broader results.

215. The Commission also notes that there are multiple companies which offer specialised search services without offering a general web search service. *E.g.,* trivago.in which enables users to search for and compare hotels and other accommodations. Therefore, the Commission finds that online general search services cannot be considered as substitutable or interchangeable with vertical or specialized search services.

216. The Commission further notes that from a demand-side perspective general search services and content sites serve different purpose. General search service primarily seeks to guide users to other sites, while content websites themselves are the destination of such search. Thus, the online content websites, which provide factual responses to user queries across a range of information due to specific user preference and features, cannot be considered as a substitute to online general web search.

217. The DG has also differentiated general search service from search on social networking sites and concluded that they are not a substitute for the former. In this regard, the Commission notes that from a demand side perspective, general search services and social networking sites offer different services. General search services direct users to the most appropriate content as per the search query,

whereas social networks offer means to users to connect and interact with other people. Further, while certain social networks offer a search function on their own websites, however, their search is limited to their own websites. On the other hand, general web search services offer search from across the web. The Investigation has also revealed that none of these social networking sites use their own general search technology and instead, they rely on existing third-party search service providers to power these searches.

218. Thus, after considering the aforementioned reasoning and the provisions of Section 19(7) of the Act, the Commission holds '*market for general web search*' as third relevant market for the present matter.

219. In respect of relevant geographic market, it is noted that even though general search services can be accessed by users anywhere in the world, the main general search services offer localized sites in different countries and in a variety of language versions. Moreover, the majority of users make use of the website of their own country/ language when making searches. Thus, the conditions for supply and demand of General search service are homogenous and distinct in India. Accordingly, the Commission holds 'India' as the relevant geographic market for general web search, in accordance with the provisions of Section 2(t) read with Section 19(6) of the Act. This is also consistent with the findings of the Commission in Case No. 07 & 30 of 2012.

220. Accordingly, the Commission determines the third relevant market in the present matter as the '*market for general web search in India*'.

Assessment of Dominance of Google

221. The DG has examined the dominance of Google in the market for licensable OS for general web search in India. After analysis of various factors such as high market share enjoyed by Google, low downloads of competing search apps by the users, little competition to pre-install alternative search app, low revenues of

competing players, existence of significant entry barriers, existence of revenue sharing arrangement between Google and OEMs, access to huge amount of data by Google, *etc.*, the DG has concluded that Google is dominant in the relevant market for general web search in India. The observations of the Commission in this respect are as follows:

a)   *Market Share Analysis*

222.   The DG has presented the comparative data on the market share of various competitors in the search engine market in India between 2009 and 2019 (up to October 2019) through the following graphical representation.

Graph 5: Search Engine Market Share (All Platform): 2009-2019
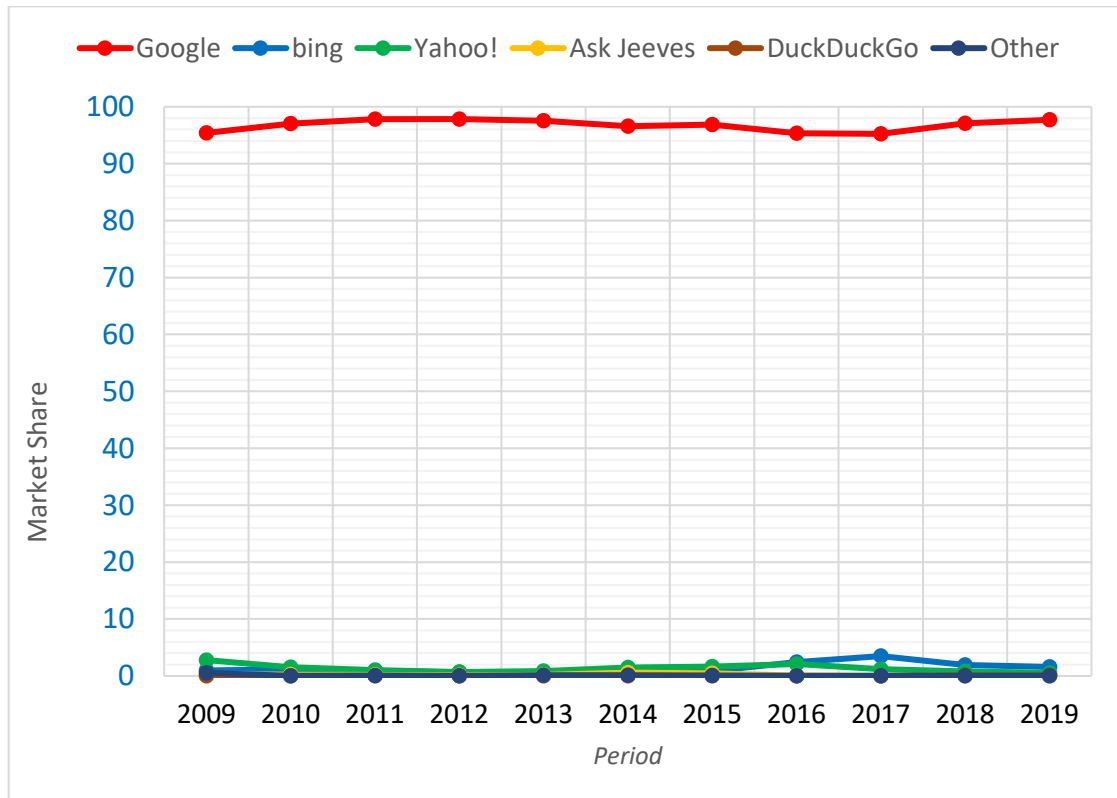
223. Further, according to a StatCounter which is a web traffic analysis website, the market share of various competitors in the search engine market in India between 2009 and 2019 (up to October 2019) is tabulated as under:

Table 5: Market Share in the search engine market in India

Year*	Google	Bing	Yahoo!	Others
2009	95.43	0.96	2.79	0.82
2010	97.05	1.16	1.51	0.28
2011	97.82	0.89	1.04	0.25
2012	97.84	0.61	0.69	0.86
2013	97.56	0.66	0.84	0.94
2014	96.56	0.97	1.48	0.99
2015	96.87	0.88	1.64	0.61
2016	95.32	2.43	2.07	0.18
2017	95.24	3.49	1.21	0.06
2018	97.11	1.95	0.8	0.14
2019**	97.69	1.61	0.55	0.15

On calendar year basis
*** From January 2019 to October 2019*

224. Based on the above data, the Commission notes that Google has a market share of more than 95% consistently since 2009. Thus, Google occupies not only the most significant position in the general web search market, but its position has been un-assailable over these years. Based on the abovementioned data, it is noted that the competing search services have not been able to overcome the competitive advantage secured by Google through pre-installation of its Search app as well as other search entry points *viz.* search widget, chrome browser, *etc.* on Android devices through MADA, as pre-installation of search app in MADA devices is an important channel of distribution. This has also been acknowledged by Google, wherein it has stated that preloading of revenue generating apps like Google search app is effectively a promotional opportunity that compensates Google for its investment in Android platform.

225. The DG has also examined the significance of smart mobile devices as well as Android devices within the smart mobile devices, in generating search queries

volume for Google. The search related data provided by Google, reveals that the contribution of the search queries (in Google search) *via* mobile has increased considerably from ▮▮▮▮▮ in 2011 to ▮▮▮▮▮ in 2019, while the corresponding contribution of search queries *via* desktop has declined drastically from ▮▮▮▮▮ in 2011 to mere ▮▮▮▮▮ in 2019. This reflects that significant number of search queries are being generated by users on the mobile platform.

226. Further, out of total mobile queries on Google Search, the search queries made *via* Android device and non-Android mobile devices in India reveal that the Android device which had a small contribution of mere ▮▮▮▮ in 2011 and ▮▮▮▮ in 2012 continuously increased and touched ▮▮▮▮ in 2017. In 2019, Android contributed ▮▮▮ of the mobile search queries on Google.

227. It is further noted that the Android OS has become an important platform for Google from the point of view of Google search. Over the years, the Android users have made a large number of search queries in Google search when compared to remaining platforms including desktop/ PC and all other mobile queries in India. This is evident from the break-up of Google search queries made through Android devices in India as against the other platforms/ devices, as presented below:

Table 6: Source Queries from Android vis-à-vis other platforms

Year	Search queries *via* Android from users in India (%)	Search queries *via* other platforms from users in India (%)
2011	▮▮▮	▮▮▮
2012	▮▮▮	▮▮▮
2013	▮▮▮	▮▮▮
2014	▮▮▮	▮▮▮
2015	▮▮▮	▮▮▮
2016	▮▮▮	▮▮▮
2017	▮▮▮	▮▮▮
2018	▮▮▮	▮▮▮
2019*	▮▮▮	▮▮▮

Up to March 2019

228. In addition the Investigation has revealed that mobile searches tend to be more valuable because of its localized nature and therefore, allows collection of valuable user data including location data. This data set and the ability to understand user intent while searching on mobile devices is important to creating a truly competitive search offering. It allows general search services to improve their services to offer better search advertisement services which fund the platform. Due to positive feedback effects on both the sides, any entrant also needs to obtain sufficient scale with both sides of the market, *i.e.,* users (queries) and advertisers.

229. Based on the above analysis, the Commission notes that Google enjoys a insurmountable position in the search engine market and Android has been an important distribution channel for Google's Search (the revenue earning app for Google).

   b)   *Search App downloads from Google Play Store in India*

230. Google has argued before the DG that mandatory pre-installation of bundle of its apps and services including Google Search in the default home screen of MADA devices is a promotional measure that compensates Google for its investment in Android platform. Google has further argued that the end users are free to download competing apps from Play Store with a lot of ease. In this regard, the DG has examined the data on numbers of competing search app downloads from Google Play Store in India which is tabulated as below:

Table 7: Competing Search App Downloads from Google Play Store in India

Year	Pre-installed Google Search	Download of competing search apps		
		Bing Search	Yahoo	Others

2011	███		█		█		█
2012	███		█		███		███
2013	████		███		███		███
2014	████		███		███		███
2015	████		███		███		███
2016	████		███		███		███
2017	████		████		███		████
2018	████		████		███		████

231. A comparison of number of Google Search pre-installed in GMS devices and download of other competing search apps such as Bing, Yahoo, *etc.* reveal that the download of these search apps together constitutes less than ███ of the pre-installation of Google search apps in Android devices in India. Thus, with the pre-installation of the Google Search app in Android devices, the mobile users rarely download the competing search app in Android.

232. Above data also reveals that even though the Play Store allows for downloading of apps (including of general search apps) for free and in an easy and convenient manner, the Google search app, which comes pre-installed in the default home screen of Android devices as per MADA, enjoys considerable competitive advantage and the competing search apps, are unable to overcome the *status quo* bias of mobile users who are generally reluctant to download the competing search apps.

233. The examination of the data presented by Microsoft in relation to pre-installation of its Bing Search on Windows OS phones also reveal the significance and prevalence of *status quo* bias amongst Indian smart device users. ████████

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Graph 6: Search queries made via Windows mobile OS
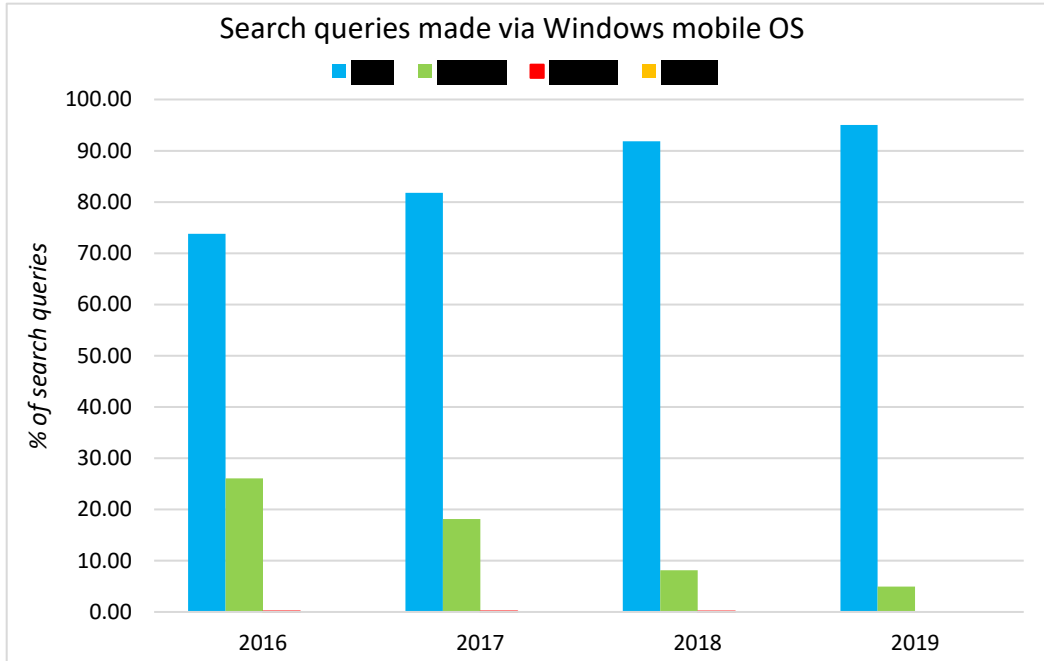
234. This data on user behaviour of Windows phone reveals that ▮▮▮▮▮▮▮▮
▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮
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235. The usage of Google search in Microsoft's Windows Phones in India, is far less at ▮▮▮▮▮▮ in 2017, ▮▮▮▮▮ in 2018 and ▮▮▮▮▮▮ in 2019 when compared with its overall market share of over 95% as per StatCounter data (as discussed *supra*). Based on this analysis, the Commission notes that Google's share of general search queries is lower on Microsoft's Windows mobile phone where the Google search app is not pre-installed (or set as a default search engine for native browser) in comparison to Android where the Google search app is pre-installed in the default home screen. This analysis also demonstrates *status quo* bias amongst the mobile users in India *i.e.,* users generally do not download a competing search

apps where they are presented with an existing pre-installed search app on their mobile devices.

236. Similar observation is noted from the data provided by Apple. Google submitted that Apple preloads Apple Maps, Apple Safari and Apple Music on all iPhones. Even though, Apple and its product do not fall in the relevant market, however, the DG sought response from Apple to understand the advantage accorded by pre-loading of apps. The Investigation has examined the downloads by the users in India from Apple's App Store on the Apple iPhones of Google's proprietary apps such as Google Maps, Chrome browser and Google Play Music. In this regard, the Investigation revealed that currently Apple doesn't have its own search engine and Google Search is the default search engine for search queries in Safari browser which is pre-installed by Apple in all its devices. Further, Google Search app can also be downloaded by iPhone users in India from Apple's App Store.

237. This data is tabulated below:

Table 8: Download data of Google's apps on iPhones

Year	(% of iPhones in which Apple Apps* available)	(% of iPhones in which downloaded)			
		Google Maps downloads in iPhones in India	Google Chrome downloads in iPhones in India	Google Play Music downloads in iPhones in India	Google Search App downloads in iPhones in India
2012	■	■	■	│	■
2013	■	■	■	│	■
2014	■	■	■	│	■
2015	■	■	■	│	■
2016	■	■	■	■	■
2017	■	■	■	■	■
2018	■	■	■	■	■
2019	■	■	■	■	■
2020	■	■	■	■	■

Apple Apps include Apple Maps, Apple Safari and Apple Music

238. Based on the above data, it is noted that when Apple apps such as Apple Maps, Apple Safari and Apple Music are pre-loaded in all the iPhones shipped to India, the other competing Google apps such as Google Maps, Chrome browser and Google Play Music are not downloaded by the iPhone users from Apple App store. The Commission notes that this data goes to emphasize not only the importance of pre-installation as a distribution channel for app developers (elaborated in detail subsequently in this decision) as well as presence of *status-quo* bias with the users wherein majority of the users tend to stick to the usage of the pre-loaded apps and do not download other apps which may be perceived to provide the same kind of services.

   c)   *Little competition to pre-install alternative search app*

239. Pursuant to obligations imposed under MADA ███████████████████ ██████████████████████████████████████ ████████████████████████ In relation to this default positioning of Google, Microsoft which operates a competing search engine *i.e.,* Bing has stated that,

> '…*A user is more likely to use a search widget on its home screen or use a browser, than open an app specifically for search, especially when this app may not even be on the home screen. Accordingly, the Google search on home screen and default search setting in the default browser, drive a significant number of searches on mobile devices, and Microsoft believes that a pre-installed dedicated search application on a device drives significant internet search usage…*'

240. The same has also been seconded by the reply of Yahoo, wherein it has stated that:

> '*...As far as impact on users due to pre-installation, **pre-installation, premium placement and default settings are extremely important when establishing scale.** For example, to our understanding, on Android mobile devices, Google Search has historically been pre-installed on all of those devices. For Android devices in particular, Google could have control over the out-of-the-box user experience. For instance, **when a consumer opens the box and sets up their new device, they are automatically in the Google ecosystem as the default experience. Every other search provider has to**

take additional steps to get the end user to download, install and use their services and apps…'

(Emphasis supplied)

241. The importance of Google Search widget or Google Search App in perpetuating dominance of Google in the market for general web search in India is also noticeable from the reply of Mozilla Corporation, wherein it stated as follows:

> *'…The **Google Search widget or application (Google Search App) is one of the most important ways users of Google's Android Operating System (OS) visit web pages.** Rather than open a browser, many users will begin a session with a search in the Google Search App, and then will click a link in the Google Search App. **When users click a link in the Google Search App, the page will open within the Google Search App, using Google's custom in-app browser…..The page will open within Google's in-app browser even if the user has selected Firefox as their default browser…'***

(Emphasis supplied)

242. In relation to the default position enjoyed by Google, the DG has also referred to the *US Antitrust Subcommittee Report*, which made the following observations:

> *'…A third barrier to competition in general online search is that Google has established extensive default positions across both browsers and mobile devices. Among desktop browsers, **Google enjoys default placement in Chrome (which captures 51% of the U.S. market), Safari (31%), and Firefox (5%)—or 87% of the browser market. Meanwhile, Microsoft's Edge, which captures 4% of the desktop browser market, sets Bing as its search default, leaving little opening for independent search engine.***
>
> ***Google won itself default placement across the mobile and desktop ecosystem through both integration and contractual arrangements.** By owning Android, the world's most popular mobile operating system, **Google ensured that Google Search remained dominant even as mobile replaced desktop as the critical entry point to the Internet…'***

(Emphasis supplied)

243. Referring to a consumer survey, Google argued that Indian Android user is not influenced by pre-installation of GMS apps on its devices and stated that so many competing apps are downloaded by Indian users and as such - no status quo bias

exists in India, as such. While examining the same, the DG has noted that *firstly*, online survey of around ▮ participants is incapable of representing the user behaviour of millions of Indian Android users. *Secondly*, the survey result is not in synchronization with the ground reality that downloading and usage of competing search app in Android is very minuscule. Accordingly, the Commission concurs with the finding of the DG that the survey result, cited by Google, does not represent a true picture as to the behaviour of Android users.

d) Revenues of the key players in India

244. The DG has also examined the yearly revenue of three general web search competitors *i.e.,* Google, Bing and Yahoo, in India from online general web search service from 2011 to 2018. It is noted that Bing and Yahoo have miniscule revenue from online general web search service in comparison to Google. Based on the actual revenue data presented by the DG, the Commission notes that Google is much ahead than its other two competitors, who have been gradually marginalized in subsequent years. Thus, the ability to convert web usage into revenue indicates the strong position of Google as compared to its competitors in India. The increased revenue of Google from the search business enables it to invest in R&D for improving the user and advertiser's experience, which further reinforces its dominance in the online general web search market in India.

e) Entry barriers

245. The DG also examined the entry barriers and noted that the market of online general web search market in India is characterized by the existence of several barriers to entry and expansion. The Commission notes that developing a competitive and commercially successful search engine would require significant investment in terms of time and other resources. The developer needs to acquire and maintain sufficient hardware to process the data required, hire skilled developers to build the necessary algorithms and the software services, build a

comprehensive search index, and most importantly, attract and then process user queries.

246. In this context, it is apposite to refer to submissions of Microsoft (which offers a competing search engine – Bing) which has comprehensively identified other major entry barriers for a new player in the market of General search services. The same is reproduced here as follows:

> '...Developing a competitive and successful general online search platform **would require significant investment (billions of dollars) to acquire and maintain sufficient hardware to process the data required, retain skilled developers to build** the **necessary algorithms and software services, build a sufficiently comprehensive search index, and ultimately to attract and then process user queries.**
>
> The last of these items, i.e., attracting and processing user queries, may be the most difficult to access, and hence, is a major entry barrier. Obtaining sufficient query data to provide relevant and accurate results is extremely challenging and cannot be overcome, even with sufficient funds and engineering talent.
>
> Microsoft knows of no readily available alternative data sources that could be used by market entrants. Other data sources - including non-search engine partners and browser data - contain less information than user feedback from searches on the search engine. Additionally, the information available through other data sources is less reliable, less complete and not eligible for experimentation, and, thus, is not a sufficient substitute for proprietary traffic. **Moreover, much of this data is controlled by Google today, given its control of the Chrome Browser and Android.**
>
> Notably, with respect to users and their query data, the scale necessary to compete today is much greater than the scale needed in prior years**. The growth of the internet has increased the cost of indexing. User queries have become more sophisticated and, accordingly, a search engine must respond effectively to many different kinds of requests.** Search results have become more complex and feature-rich, requiring scale for development and improvement of search algorithms. Because relative quality matters to consumers, the minimum investment required to achieve quality that is acceptable to consumers has grown over time. Additionally, given the growth in mobile searches, any entrant would need access to query data from mobile devices as well. Indeed, mobile searches tend to be more localized (a user searching for a Starbucks at the point in time he wants to walk to one). As such, location data and the ability to understand

user intent while searching on mobile devices is important to creating a truly competitive search offering.

Aside from the necessary inputs to succeed at building a search engine, any entrant also needs to obtain sufficient scale with respect to both sides of the market, i.e., users** (queries) **and advertisers. Without sufficient access and engagement by advertisers, search engines cannot survive as a viable business. *The advertiser scale necessary to compete effectively is relative vis a vis Google Search. Advertisers consider relative scale when determining their entry, engagement, bidding, and budgets. On the publisher side of the market, the platform that generates higher revenue per search on the advertising side will attract more advertisers. This additional advertising revenue also attracts more users through the ability to negotiate default search agreements with mobile operators, browsers, and other publishers…'*

'*…**Microsoft faces several barriers in relation to the growth of Bing search and related** advertising**. Below** are **the more significant ongoing challenges***:

- *Limited availability of search entry points. **With respect to PCs, most users elect to use Google Chrome as their default browser. Within Google Chrome, Google Search is typically set as the default search engine and most users elect to use it.*** *The same is true for almost all other major browsers, including nearly all distributions of Mozilla Firefox and Apple's Safari browser.* ***With respect to mobile devices, Google Search is the default search provider on the two most popular mobile device operating systems worldwide and in India, i.e., Android and iOS. In India, Android accounts for over 90 percent mobile share and iOS accounts for around 2 percent. Thus, there are relatively few options left available for Microsoft, especially on mobile devices.***

- *Low share of mobile queries and users. **With the growth of** mobile **devices, mobile search has become critical. Lack of access to this data makes Microsoft's offerings less relevant. Additionally, lack of queries from mobile users makes Microsoft's advertising platform much less attractive to advertisers. Through Google's control of the default search entry points on Android and iOS (given that Google Search is the default search provider (through search widgets or default settings of the browser) in Android and** iOS *devices)**, Microsoft has few options to gain critical mobile queries.***

- *Advertiser reluctance to port and manage campaigns on multiple platforms. **With Google accounting for over 98.5 percent of searches in the India according to StatCounter***, advertisers have very little incentive to do the work necessary to place advertisements on Bing, as they can reach nearly all users (and especially mobile users) through Google.** *Advertisers tend to create advertising campaigns for*

Google first, and then decide whether they want to port those campaigns to Bing.

(Emphasis supplied)

247. Yandex has also identified major entry barrier into the search market. The same is reproduced as under:

> *'As far as we are concerned, the **major barriers to entry into the search market and to expand are the following**:*
> * *Gatekeeper position of Google in all the distribution channels on most global markets, which makes it challenging or even impossible for competing general web search engines to gain market share and, therefore, to monetize;*
> * *Need of significant investments to build the indexing and crawling technology;*
> * *Necessity to compete with major players to which most users are attracted. In order to improve the quality of a search engine it is necessary that users actively interact with it (so that the search algorithms could be taught and improved).'*

(Emphasis supplied)

248. The DG has also referred to the *US Antitrust Subcommittee Report* and noted that high cost of crawling is an important entry barrier. The relevant excerpt is as follows:

> *'...**Several online search features tilt the market towards the dominant incumbent and make entry by new market participants difficult**. First, web crawling is costly and strongly favors first-movers. In a submission to the Subcommittee, one expert described how Google's early efforts have locked in its dominance. In particular, **Google was the first company to crawl the entirety of the Internet, a feat motivated in part due to its PageRank algorithm**, which used links between pages to identify the most relevant webpages for specific topics and queries. **Unlike most search engine algorithms at the time, the quality of PageRank results improved with more webpages, incentivizing Google to crawl a greater portion of the web.***
> .
> .
> *The high cost of maintaining a fresh index and the decision by many large webpages to block most crawlers significantly limits new search engine entrants. In 2018, Findx—a privacy-oriented search engine that had attempted to build its own index—shut down its crawler, citing the*

impossibility of building a comprehensive search index when many large websites only permit crawlers from Google and Bing. Today the only English-language search engines that maintain their own comprehensive webpage index are Google and Bing. Other search engines—including Yahoo and DuckDuckGo—must purchase access to the index from Google and/or Bing …'

(Emphasis supplied)

249. The Commission has also examined these entry barriers in Case No. 07 & 30 of 2012 and *vide* its order dated 31.01.2018, observed that,

> *" for a search engine, it is extremely important to be able to crawl the web and index the data. Google has a significant head start in this regard, and the cost of crawling the entire internet, in terms of servers and technology, is prohibitive for a new entrant. As Google has an insurmountable scale advantage and given that only market participants in the online general web search market can compete in the search advertising market, the barriers in the online general web search market also effectively restrict entry into the search advertising market…"*

250. The Commission notes that general search service rely on volume of search queries of the users to refine relevance of the search results and accordingly, greater is the number of search queries, the faster is its ability to observe the user behaviour and refine and update the search results. Therefore, any competing search service need to attract and process user queries to refine its algorithm for populating most relevant search results. However, it's easier said than done and therefore, it acts as a major entry barrier for competing search services. Moreover, there are no readily available alternative data sources that could be used by market entrants.

251. It is further noted that the market of online general web search market is also characterized by the existence of the expansion barriers. As already explained *supra* two major sources of search queries are mobile devices and the PCs. With respect to mobile devices, Google Search is pre-installed and *de facto* is the default search provider on the two most popular mobile device operating systems in India, *i.e.,* Android and iOS. With regard to PCs, Microsoft has submitted that

most users elect to use Google Chrome as their default browser wherein, Google Search is typically set as the default search engine and most users elect to use it. The same is true for other major browsers, including nearly all distributions of Mozilla Firefox and Apple's Safari browser. Thus, there are relatively few options left available for competing search engines to have access to user search queries. With growth of mobile devices in generating search queries, access to mobile search becomes essential for the competitors.

252. The Commission further notes that positive feedback loop between the two sides of the search platform *i.e.,* general search services and online search advertising also operate as entry barriers. When a search engine does not have a sufficient scale on the search user side, the advertisers would not be willing to use the search advertising services of such search engine. As noted by the DG, with Google accounting for over 98.5% of searches in the India, advertisers have very little incentive to do the work necessary to place advertisements through competing search engines like Bing, as they can reach nearly all search users (and especially mobile users) through Google.

253. The Commission also notes that the market has not witnessed any significant entry by a new player or expansion by an existing player. This corroborates the finding of the prevalence of entry barriers in the market.

254. In view of the foregoing analysis, the Commission do not find any reason to differ from the conclusion drawn by the DG that the relevant market exhibits multiple entry and expansion barriers.

f) Revenue Sharing Agreement (RSA) reflecting lack of countervailing buyer power

255. The DG has noted that amongst other Agreements, entered into by Google with OEMs of Android smart mobiles, RSA is an important agreement. RSA *inter-alia* provides for exclusive pre-installation of Google Search app in 'qualified device'

of OEMs. ███████████████████████████████████

██

████████████████████████████████ Google shared

with OEMs search advertising revenues provided that the OEMs did not pre-install any competing general search service on any device within an agreed portfolio. ███████████████████████████████

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257. Google has entered into RSAs with several OEMs that are manufacturing/ distributing Android Smart Mobile Devices in India and the prominent amongst them are ████████████████████████████████

258. The Commission notes that OEMs who have ███████████████████

██

███████████████████, because they did not find any other option in terms of alternative search service provider(s) who could possibly compensate them in the event of their search app being pre-installed in the handsets. In this regard, the

DG has compared the amount shared by Google with OEMs with the earnings of competing search service providers. ███████████████████

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259. Based on the foregoing, the Commission observes that Google determined RSAs not only indicate inadequate bargaining power of OEMs *vis-à-vis* Google, but the quantum of payments made under RSAs by Google to the OEMs also operate as an entry barrier for the competing search engines. A comparison of such amount by Google vis-à-vis cumulative earnings of Microsoft Bing and Yahoo!, as stated *supra*, clearly demonstrate that the competitors are in no position to match Google in terms of revenue share offered to avail pre-installation of their respective search services.

260. Similarly, the users whose individual search queries are insignificant when compared with overall volume of search queries on Google, also have insufficient bargaining power *vis-à-vis* Google.

g) *Access to vast trove of data by Google*

261. The DG has also found that collection of data through various services offered by Google – pooling of data by integration of various apps facilitates also offers clear advantage to Google in market for online general search service as compared to that of its competitors. As already stated, access to this data facilitates refining the search algorithm and thus, better advertisement revenue.

262. In this regard, the DG has referred to the *US Antitrust Subcommittee Report* which highlighted access to huge amount of data as one of the factors providing

competitive edge. The same relevant portion from the said Report is reproduced as under:

> '*...A second major competitive advantage enjoyed by search engine incumbents is their access to voluminous click-and-query data. This data, which tracks what users searched for and how they interacted with the search results, benefits search engines in several key ways. First, search engines rely on click-and-query data to guide their search index's upkeep, as this data helps identify which webpages are most relevant and should be most regularly updated in the index. Second, click-and query-data is used to refine the search algorithm and the relevance of search results, as past user interactions improve the algorithm's ability to predict future interactions*.
>
> *...Today Google is ubiquitous across the digital economy, serving as the infrastructure for core products and services online. It has grown and maintained its search engine dominance, such that "Googling" something is now synonymous with online search itself*. *The company is now also the largest provider of digital advertising, a leading web browser, a dominant mobile operating system, and a major provider of digital mapping, email, cloud computing, and voice assistant services, alongside dozens of other offerings. Nine of Google's products— Android, Chrome, Gmail, Google Search, Google Drive, Google Maps, Google Photos, Google Play Store, and YouTube—have more than a billion users each. Each of these services provides Google with a trove of user data, reinforcing its dominance across markets and driving greater monetization through online ads...*'

> **(Emphasis supplied)**

263. Based on the above, the Commission notes that vertically integrated business operations of Google allow to pool the data gathered from each service, and process the same to refine the service offered. The same results in a superior monetization through online ads. This gives a significant and overwhelming competitive edge to Google over its competitors.

264. Thus, based on the foregoing comprehensive analysis, the Commission holds Google to be dominant in the relevant market for general web search in India.

Google's Submissions

265. As per Google, the DG's assessment of market definition and dominance related to general search services does not fit its theory of abuse. The submission of Google in this respect are summarised below:

265.1. The Investigation Report alleges that Google is dominant in "general web search services" offered to end users. But the alleged abuses concern the conditions under which Google licenses the Google Search app to OEMs. The alleged abuse is not an abuse of dominance in search services provided to users, nor in any way linked to the Investigation Report's dominance allegations.

265.2. The Investigation Report's alleged abuse regarding the mandatory pre-installation of the GMS suite under the MADA involves the conditions under which Google licenses its Search app to OEMs. It does not concern the conditions under which Google offers its general search service to user.

265.3. The Investigation Report's claim that signing the AFA/ACC as a condition for OEMs to preinstall Google's proprietary apps on Android devices amounts to an abusive practice also does not concern Google's general search service. It involves again the conditions under which Google's Search app is licensed to OEMs—and in fact, the Report mainly turns its attention to the "must have" nature of Play to establish this alleged abuse.

265.4. The DG failed to show the dominance of Google in licensing of general search apps to OEMs. Instead, the DG conflated Google's alleged dominance in general search services provided to end users with a position of dominance in the licensing of search apps to OEMs.

265.5. To find that Google has market power in the licensing of general search apps to OEMs, the DG ought to have established that a license to preinstall that app is a "must-have" for OEMs that enables Google to act independently of competition in the licensing of its Search app to OEMs. The Investigation Report does not attempt such an analysis, nor can it be assumed.

266. The Commission has perused and examined various submissions of Google as summarised above. At the outset, as detailed subsequently in this order, it has emerged from the analysis that Google has used its dominant position in the app store for Android OS market to protect its position in the general search services market and restricting entry of a competitor. As per the scheme of the Act, there is no requirement of an entity leveraging its dominance to be dominant in the leveraged market. Notwithstanding that, the Commission does not find any merit in the distinction being asserted by Google between its general search services and services offered through Google Search App, for the purpose of examining the instant issue. . Google Search app act as an important entry point for Google's general search services. The Commission further notes that obligations under MADA give pre-eminence to Google's search services by securing pre-installation of various search entry points *viz.* search app, search widget, chrome browser, *etc.* as a condition to licensing of Play Store.

267. In view of the foregoing, the contentions of Google are rejected, being devoid of merit and the Commission concurs with the findings of the DG as to delineation of relevant market as *market for general web search in India* as well as Google being dominant in the said relevant market.

D. Market for non-OS specific web browsers in India

268. A web browser ('browser') is a software that retrieves and displays pages from the Internet. People often use browsers to navigate to and spend time on websites,

to search the web and access content. A web browser allows users to interact with web pages and other dynamic contents *via* hyperlinks that provides navigation facility *i.e.,* to go to different locations by clicking on links that makes internet surfing easy. There are a number of browsers that are designed to access the web using a mobile device. A mobile browser is optimized to display web content on smaller screens of mobiles and to perform efficiently on these computing devices, which have far less computing power and memory capacity, compared to a desktop or laptop.

269. Google also offers a web browser named '*Chrome*' which was released for Windows OS in 2008 and subsequently, Google ported Chrome to several other leading desktop and mobile platform, including MacOS (2010), Linux (2010), Android (2012) and iOS (2012). Google Chrome does not require registration, but certain features are reserved for registered users, including the synchronization of bookmarks, passwords, and settings across all of user's devices. Other web browsers include Mozilla Firefox, Internet Explorer, Edge, *etc.*

Relevant Market

270. The Commission notes that the DG has examined various aspects for the purpose of delineating relevant market related to web browsers. Based on the analysis of the provisions of the Act and submissions of the parties, the DG has concluded that web browsers for PC are different from web browsers for mobile, mobile web browsers are different from other apps, mobile web browsers are specific to the OS for which they are developed, and OS specific mobile web browsers are not part of the same market. Accordingly, the fourth relevant market delineated by the DG in the present matter is '*market for non-OS specific web browsers in India*'. The observations of the Commission in this respect are as follows:

  a) *Personal Computer (PC) web browser are different from Mobile web browser*

271. The Investigation has revealed that the characteristics and features of web browsers for PCs are different from web browsers for mobiles. The Commission notes that the DG has concisely brought forward the differences between the two products. It is noted that PC web browsers and mobile web browsers rely on different technologies.

272. In this respect, following submissions of various parties are pertinent to note:

272.1. Mozilla, in its reply to the DG, has explained the technical difference between the two versions of web browsers and stated that:

> "...*Mobile devices differ from desktop computers in many ways including:*
> 1. *smaller screens and keyboards that are touch-enabled;*
> 2. *gyroscopic, geolocation, and other sensors;*
> 3. *greater capacity for personalization;*
> 4. *heavier usage of photo and video functionality;*
> 5. *more affordable price points;*
> 6. *slower connection speeds;*
> 7. *different power management and memory considerations; and*
> 8. *reliance on critical services such as app stores (which are offered exclusively on certain OSs), maps and navigation, location services, payments, search, voice assistants, and translation. Another key difference between mobile and desktop applications is the reliance on the mobile OS integrated services, for example: In-app billing, cloud messaging (to send push notifications), analytics, location, maps, identity authorization and voice commands/support...*"

272.2. Google has stated that,
> "…*The primary feature distinctions between the desktop and mobile versions reflect the difference in form factors. Given the difference between the form factors, not all features in desktop Chrome are available in the corresponding version of Chrome for Android, however. For example, Google has implemented the open-source Native Client project in the Chrome browser on Windows, Mac, Linux and Chrome OS, but not on Chrome for Android…*"

272.3. Microsoft has stated that,
> "…*With respect to Microsoft's browsers, the primary difference is the HTML rendering engine and related platform technologies.*

Internet Explorer is based on the Trident rendering engine which has been part of Windows for over 20 years. Edge on Windows devices is based on the Edge.html rendering engine, although Microsoft will be transitioning to a Chromium based version of Edge that will rely on the Blink rendering engine……By switching to a Chromium based browser, Microsoft hopes to eliminate most website incompatibilities."

273. Further, some of the developers of PC web browsers have also developed web browsers for mobile (*viz.* Microsoft, Google, Mozilla, *etc.*), but the same requires a significant incremental investment in technology and capital. Many developers like Samsung, Amazon Silk browser, Xiaomi, Huawei, *etc.* who offer web browser for mobile have not developed web browsers for PC. Based on these parameters, the Commission concurs with the DG that the web browsers for PC do not belong to the same relevant product market as mobile web browsers.

274. The DG has also examined the difference between mobile web browsers and other mobile applications. In this regard, it is observed that although web browser is also an app in mobile device, however, the intended use and characteristics of the two products are different. A mobile based web browser is used by the users to access varied content and services online. Some website owners have also developed the apps for the content/ service available on their respective websites but still there are thousands of websites who have not launched their apps. Therefore, the user has to rely on web browsers to access these websites. Thus, while there could be some level of substitutability between accessing content *via* a mobile web browser and a respective dedicated native app, users neither download an app for each web page they visit, nor apps exist for every webpage. Further, from supply side perspective, the development of a mobile web browser requires time and resources. Therefore, the Commission finds that mobile web browsers are different from other apps.

b) *Browsers for different mobile OSs*

275. As already stated earlier, each OS varies in terms of programming language, APIs and other technical parameters. Therefore, mobile web browsers are specific to the OS for which they are developed. Mobile web browsers developed for one particular OS cannot be substituted with the web browser developed for another OS. Thus, OEMs can pre-install web browsers that are developed for the OS on which their devices are based. Similarly, a mobile user's choice for a web browser is also restricted to either the web browser which is pre-installed or those web browsers which are compatible with a specific OS. The demand for a mobile web browser for Android OS cannot be interchangeable or substitutable with mobile web browsers developed for a different OS.

276. In this regard, it is pertinent to note the following submissions:

    276.1.   According to Google,
"...Google Chrome is available on Android desktop 32-bit/ 64-bit Windows, Mac OS, iOS, Linus and Android. It is not available on Windows Phone OS/ Windows Mobile. Chrome is largely consistent across platforms; however, due to Apple's requirements, Chrome for iOS uses Apple's Webkit rendering engine (i.e., the software component of a browser that creates the visual representation of the web page from the underlying code. Specifically, Apple's developer rules prevent Google from using its own rendering engine for Chrome)..."

    276.2.   According to Mozilla,
"...The primary technical difference between Firefox (browser) for Android and iOS is the browser engine. Firefox has always been developed on Gecko across the desktop, mobile and IoT markets. The only exceptions have been for Windows Phone OS (which required use of Microsoft's Trident browser engine) and Apple iOS (which requires use of Apple's Webkit engine) ..."

277. From a supply side perspective, the Commission notes that there are multiple mobile web browsers which are available on both of the prominent smart mobile OSs *i.e.,* Android OS and iOS. The DG has also noted that a large number of developers of mobile web browsers offer their web browsers for variety of OSs such as Google (Chrome on Android and iOS), Mozilla (Firefox for Android and

iOS), Microsoft Edge, UC Browser, *etc*. Thus, these mobile web browsers form part of the same product market.

 c) OS specific mobile web browsers vis-à-vis non-OS specific mobile web browsers

278. The Commission notes that there are few mobile web browsers which are specific to the OS and are not available for download outside the ecosystem of the concerned OS. This category includes web browsers developed by Apple and Blackberry for their respective OSs. These OS specific mobile web browsers which are available only as a part of a non-licensable smart mobile OS, cannot be considered as an alternative for other OEMs and thus, are not part of the relevant product market of the mobile web browsers.

279. On the other hand, there are non-OS specific mobile web browsers which are not tied to a specific OS and available for download by mobile users and available for pre-installation by the OEMs on different OSs. As already stated *supra*, as of now there are only two prominent OSs *i.e.,* Android and iOS and multiple mobile web browsers are available on both the platforms (e.g., Google's Chrome, Mozilla's Firefox, Microsoft's Edge, *etc.*). All these non-OS specific mobile web browsers are in a position to constrain each other and thus form part of the same market. Whereas, OS specific mobile web browsers, being not available on other OSs, do not constrain other mobile web browsers.

280. Thus, after considering the aforementioned reasoning and the provisions of Section 19(7) of the Act, the Commission holds '*market for non-OS specific mobile web browsers*' as fourth relevant product market in the present matter.

281. In respect of relevant geographic market, the Commission notes that the conditions for supply and demand of mobile web browsers are homogenous and distinct in India. There are also language-specific demand characteristics for a

web browser. Therefore, the Commission finds 'India' as the relevant geographic market for market for non-OS specific web browsers, in accordance with the provisions of Section 2(t) read with Section 19(6) of the Act.

282. Therefore, the Commission determines the fourth relevant market in the present matter as the '*market for non-OS specific mobile web browsers in India*'.

Assessment of Dominance of Google

283. Further, the DG has examined the dominance of Google in the market for non-OS specific mobile web browsers in India. After analysis of various factors such as high market share of Google's Chrome browser app, entry barrier for competing browser apps in form of pre-installation, indirect network effects, *etc*., the DG has concluded that Google has a dominant position in the said market. The observations of the Commission in this respect are as follows:

a) *Market Share Analysis*

284. The DG has relied on the data obtained from StatCounter to depict the market share of various competing web browsers in the relevant market. The tabular representation as to the market share of the competing web browser in mobiles in India is represented as under:

Table 9: Market Share (%) of web browsers in India – Mobile (As per StatCounter)

Year	Chrome	UC Browser	Opera	Samsung Internet	Firefox
2009	0	0	61.43	0	0
2010	0	0	61.28	0	0
2011	0	4.14	52.52	0	0
2012	0.04	20.72	34.96	0	0.40
2013	0.71	29.87	29.16	0	0.10
2014	4.92	35.73	24.61	0	0.12
2015	12.38	48.81	20.91	0	0.12

2016	18.13	55.56	15.27	1.91	0.03
2017	32.20	48.8	9.86	2.92	0.32
2018	44.97	36.08	8.58	2.56	0.53
2019	61.49	23.27	5.14	2.83	0.14
2020	71.90	17.65	3.11	2.47	0.16

285. Further, the market share of the top five competing web browser in desktop segment in India as per StatCounter data, may be depicted in the below mentioned table:

Table 10: Market Share (%) of web browsers in India- Desktop
(As per StatCounter)

Date	Chrome	Firefox	IE	Opera	UC Browser
2009	7.74	31.23	56.56	3.26	0
2010	17.75	32.37	46.25	2.52	0
2011	29.79	33.23	33.03	2.67	0
2012	42.37	33.57	19.29	2.79	0.01
2013	52.67	29.36	14.72	1.87	0.01
2014	59.70	26.55	10.30	2.03	0
2015	66.83	22.23	7.39	2.17	0
2016	72.99	17.95	4.35	1.92	0.68
2017	73.20	16.15	2.66	1.86	3.27
2018	75.31	11.02	1.44	1.76	7.40
2019	79.88	10.39	0.95	1.67	2.81
2020	82.07	8.74	0.67	1.50	1.46

286. Based on its examination of the market share data, it is noted that Google Chrome holds by far the leading market share. In the mobile segment, Google's Chrome has gained significant market over last few years and is the market leader with 72% market share for the year 2020.

 b) *Entry barrier in form of pre-installation and other issues*

287. The DG has further noted that the market for non-OS specific mobile web browser is characterized by the existence of several barriers to entry and expansion. In this regard, the Commission observes that Chrome browser comes pre-installed on

Android mobile devices which command over ███ of the smart mobile market in India. Further, Chrome browser is also set as default web browser for Google search, which is dominant in its relevant market in India. The same operates as a significant barrier to entry and expansion for the rival players. Google has also acknowledged that Chrome web browser is an important source on Google search.

288. It is pertinent to refer to submissions made by third parties while examining existence of the entry/expansion barrier in the market which are mentioned below:

288.1. According to UC Web,

'...In order to be a competitive web browser, investments need to be focused on both browser research and development as well as continuing efforts towards testing, project development and operations, and sales. According to UC-Web's experience, at least 30 core technical professionals are needed in the research and development department and at least another 30 employees are needed to handle testing, project operation and sales. For operational purposes, a web browser will also need capital investment for the infrastructure and hardware equipment for the above purposes...'

288.2. On the challenges regarding distribution of UC browser, UC Web has further submitted that,

*'...as UC Browser is a third-party web browser, Original Equipment Manufacturers' (OEMs) are an important means for its distribution. **However, as a result of its control over Android, Google may be in a position to further leverage this position vis-à-vis OEMs to benefit its Chrome browser. First, Google offers the Google Mobile Service (GMS) i.e., certain apps of Google, as a package to OEMs.** This package includes Google search, Gmail, Maps, YouTube, etc., and Google Chrome. **In order to clear the Android Compatibility Test Suite, OEMs are required to pre-install the GMS and, once installed, these apps cannot be uninstalled. This acts as a barrier for other web browsers who then need to extend the functions of their browsers, such as providing integrated news feed and other accessory functions to even be considered by users.** This involves extra technological and capital investment, the exact amount of which is difficult to calculate.   Second, while currently paying OEMs for pre-installation on their smart mobile devices is still one of the most effective methods of distribution for third party browsers, **given the market position of Google's Android ecosystem and the***

revenue incentives that Google offers to OEMs for pre-installation of Chrome, OEMs continue to pre-install Google Chrome. Consequently, the capital investment to incentivize OEMs to pre-install other third-party browsers will be significant...'

(Emphasis supplied)

288.3.　As per Mozilla,

'...Common barriers to entry and expansion for web browser developers include: (1) the high cost of technological development (2) Pre-installed bundling of dominant digital platforms' products and services; (3) limitations on consumers to easily replace fixed default pre-installed settings with alternatives; and (4) commercial terms and policies imposed by gatekeeper digital platforms. In addition, in order to expand, organizations must develop products across platforms which can be expensive and time consuming. For example, although the Google Android Operating System is dominant in India, Mozilla must still develop for the iOS platform. This is because Mozilla cannot have a competitive web browser in the global mobile market without developing for both the iOS and Android OS...'

'...Mobile browser default bundles present a major entry barrier for web browser developers. The other ways that users can use other mobile web browsers are (1) pre-installation distribution agreements with OEMs; (2) downloads from the OS app store; and (3) downloads by users from the web...'

288.4.　As per Amazon,

'...Developing the Silk web browser was a significant *task, requiring sizeable manpower and capital resources...it took Amazon hundreds of people and total investment exceeding tens of millions of dollars over approximately six years to develop the Silk browser. With respect to distribution a significant entry barrier for Amazon Silk was the terms required for OEMs using Google apps and services on their devices. OEMs indicated to Amazon that their terms with Google, which they agreed to in order to have Gmail, Chrome browser, Play Store, and other Google apps on their devices require them to favour Google apps in certain ways, including having Google Chrome configured as the default web browser of their device and positioned on the home screen of the device....'*

288.5.   According to Samsung,

> '...the industry (web browser) is characterized by high fixed and mostly sunk costs, since providers are required to operate a huge infrastructure and finance intensive R & D activities. Switching costs for users and advertisers are too high. This cost structure may act as a barrier to entry apart from other factors...'

288.6.   According to Xiaomi,

> '...developing a new web browser for smartphones requires significant investment in research and development in terms of time, efforts, resources and capital. The extent of the time, effort, resources, and capital required in the necessary engineering work would broadly depend on (a) the complexity of the smartphone: (b) the operating system for which the web browser is being developed; and (c) the targeted user base. Xiaomi estimates that developer require an approximate time frame of one year to build and provide a web browser with a suitable core and user interface. Significant capital investment is also required to promote the web browser and acquire users...'

288.7.   As per Microsoft,

> '...being pre-installed on a smart mobile device with premium placement derives a significant amount of usage share for the browsers. For example, iOS account for 2.2 percent of mobile OS usage in India (as per gs.statcounter data), and the usage of browser pre-installed on these devices (i.e. Safari) is roughly the same at 2 percent. Android accounts for 94.2 percent in India and Google Chrome (which is the pre-installed browser on Android devices), leads in browser usage at roughly 67 percent...'

288.8.   Yandex has also submitted on the importance of placement requirement and it acting as entry barrier in the following words:

> '*Whilst pre-installation is a necessary condition for the success of Yandex applications and therefore its share of search, it is not sufficient.* **The positioning and type of pre-installation is also important in determining how successful pre-installation is. For example, being able to pre-install Yandex's browser as the default browser, with Yandex search set as the default search engine, and ensuring it appears on the home screen without any other browsers, will be much more effective than merely having a pre-installed 'favourite' set within the browser.**
> *.*

.

Yandex's average share of search across different OEMs increases from 26% when no Yandex product is installed, to nearly 90% when Yandex Kit (Yandex's complete firmware kit for Android smartphones) is installed on a mobile device. Moreover, Yandex's average share of search consistently increases the more prominent the type of Yandex preinstallation.

(Emphasis supplied)

288.9.   Mozilla has stated that pre-installation of apps including browser app is an important entry and expansion barrier. The same is reproduced herein under:

> *'...Major OEMs that manufacture mobile devices in India include MicroMax, Spice, Karbonn, Apple, Samsung, LG, Nokia and Motorola. These companies' pre-install mobile devices with software applications including web browsers which are necessary to access the web.* **The pre-installed default web browser is the primary means by which most end users discover and use their web browser on a mobile device. The fact that consumers infrequently change default settings on mobile devices puts independent web browser developers at an automatic disadvantage in the face of fixed web browser defaults by dominant competitors***. This general principle has been recognized by other competition agencies, including the Australian Competition and Consumer Commission (ACCC) and the EC...'*
>
> *'...After preinstalled apps, consumers are next most likely to discover and download apps from their mobile device app stores. As previously mentioned, in this context***, it is not easy for consumers to set an alternative web browser as the default on Android***...'*
>
> *'...***Downloading apps from the web is possible but difficult on Android devices, and is not a popular means for mobile device users to obtain/download apps. To do so, users must change their device preferences in advance by several clicks and scrolls that involve 'Settings/ More/ Security/Unknown Sources' and then selecting the option "Allow installation of apps from sources other than the Play store."*** If this is not done in advance, the first time a user attempts to install an app from the web, the below prompt appears:*
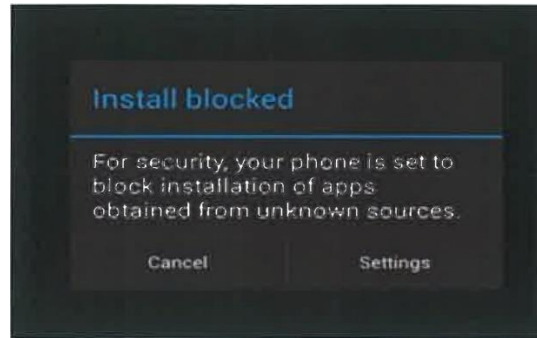
'...The user's options are to either to click on "Cancel" or "Settings." Navigating to Settings isn't useful unless the user has prior knowledge of the course of action to be taken...'

*'...**This is a challenging experience particularly given the fact that downloading directly from the web is the usual practice on desktop computers.** This is also particularly restrictive for users who wish to avoid accessing the Google Play Store, such as users who do not have credit/debit cards (which is required to create a Google Play Store account). **These consumers are confined to usage of preinstalled apps on the device unless they know how to navigate the settings**...'*

(Emphasis supplied)

288.10. According to Samsung,

'...Pre-installation [in Samsung Mobile] of Samsung Internet [Browser] helps in easy discovery of the app and hence improved app usage...'

288.11. On the challenges being faced by UC Browser especially with reference to the Indian market, it has stated as follows:

*'...finding an efficient and direct way to approach to the end users is a key factor for distribution. **Normally, an OEM selling an Android system device could preload three to four web browsers i.e., Google Chrome, OEM's own browser (which is developed by the OEM itself) and a third-party browser, such as, UC Browser or Opera Mini. However, as the size of mobile phone screen is compact, this limits the preloaded browser choice of the OEMs. More than 50% of the end users do not express a preference for any particular web browser and a majority of the users prefer to continue to use the default browser.** Therefore, being pre-installed on an Android device is important to every third-party browser developer. **As Google Chrome is part of the GMS, and for the reasons discussed above, almost all of Android devices preload Chrome on the "home" screen.***

Further, as consideration for pre-installation of Google Chrome, Google provides OEMs with a percentage of its search revenue from their devices (which given its scale can be substantial). Accordingly, a majority of the OEMs cooperate with Google and preload Google Chrome as the default browser without any way of uninstalling it. This situation not only makes it difficult for UC-Web to be a viable and available alternative the end users but has also resulted in increasing the cost of preloading the UC Browser on Android mobile devices…'

(Emphasis supplied)

288.12.   On the issue of default browser, according to Mozilla,

'…Mozilla struggled on mobile without any major distribution opportunities for Firefox on Android in global markets, including India, where Mozilla was engaged in discussions with OEMs but was unable to get placement as the default browser or in the home dock because of restrictions they faced…'

'…it was told by ▉▉▉ during 2016 negotiations for distribution of Firefox for Android (including in India) that CTS guidelines prevented placing a third-party web browser as the default. The most that ▉▉▉ was able to offer Mozilla was to pre-install Firefox as a secondary web browser option on the home screen… ▉▉▉ observation was that 60-70% of users tried the secondary web browser option but more than 70% users returned to Chrome since Chrome sits on hot seat…'

'…this high retention on Chrome is also likely because (1) most users do not take steps to change the web browser default in preference; and (2) even if they do, the Android OS does not open the user selected default web browser in key places such as Google search widget, which is shown prominently on the home screen…'

'…The Google Search widget or application (Google Search App) is one of the most important ways users of Google's Android Operating System (OS) visit web pages. Rather than open a browser, many users will begin a session with a search in the Google Search App, and then will click a link in the Google Search App. When users click a link in the Google Search App, the page will open within the Google Search App, using Google's custom in-app browser. …… The page will open within Google's in-app browser even if the user has selected Firefox as their default browser...'

289. Based on the aforesaid analysis of the replies of the third parties, the Commission notes that the market for non-OS specific mobile web browsers in India exhibits significant entry and expansion barriers.

    c) Network Effects

290. The DG has also examined the network effects emanating from linkages between general web search market and the adjacent web browser market. In this regard, the Commission notes that Google's dominance in general web search market has a significant impact on the web browser market due to close links between the web browser market and general web search market. Chrome browser is the default web browser for Google Search app and Google Search is the default search engine in the Chrome browser. This vertical integration of Google search and its Chrome browser entails cross platform 'network effect'.

291. The Investigation has revealed that since, Google is a dominant player in the relevant market of online general web search service in India, through indirect network effect, it also adds power to Google's position in Chrome web browser (which even Google has acknowledged as an important source of search queries, given its large market share in mobile web browser in India). The Commission finds no reason to differ from the findings of the DG in this regard.

292. Thus, based on the foregoing comprehensive analysis, the Commission holds that Google enjoys a dominant position in market for non-OS specific mobile web browsers in India.

E. Market for online video hosting platform (OVHP) in India

293. The basic function of Online Video Hosting Platforms (OVHP) is to host and stream mainly user generated/ uploaded video content and allow the user to convert, share and play back these videos. OVHP is mainly used for watching entertainment videos *viz.* sports, music, recipe, comedy and other users' uploaded

content and it generates revenue mainly from advertising. Google in its submissions to the DG has stated that YouTube allows the users to upload, view, rate, share, add to favourites, report and comment on videos, subscribe to other users. Thus, Google's YouTube is an online video hosting platform. It has also been submitted that users are not required to register with YouTube to watch videos, but certain functions (*e.g.,* creating custom playlists, subscribing to other users or channels, commenting on videos) require users to create an account.

Relevant market

294. The Commission notes that the DG has examined various aspects for the purpose of delineating relevant market related to video hosting platforms. Based on the analysis of the provisions of the Act and submissions of the parties, the DG has concluded that online video hosting platforms (OVHP) are different from video on demand service, videos on social networking sites, short format video apps, *etc*. Accordingly, the fifth relevant market in the present case has been delineated by the DG as the '*market for online video hosting platform (OVHP) in India*'. The observations of the Commission in this respect are as follows:

   a) *OVHP is different from video on demand service ('VODS')*

295. The Informants and Google have made rival submissions on this aspect. The Informants have claimed that VODS does not provide a video hosting service and its users cannot upload, convert, store and play back videos. Further, VODS uses a subscription-based business model that requires users to pay a monthly fee in order to access the content (like Netflix, Amazon prime video and Hotstar) whereas OVHPs like YouTube monetises its online business through online video advertising. Google on the other hand has claimed that YouTube competes with a variety of video streaming services in India.

296. In this respect, it is appropriate to refer to few responses/ replies received during the course of investigation:

296.1.   Bytedance (India) Technology Private Limited (Bytedance), a technology company which operates a range of content platforms, has submitted that,

> *'…The phrase 'online video hosting platform' is not a defined term but in industry parlance any platform which hosts video content online could generally be considered as 'online video hosting platform'. These platforms can operate in distinct and several ways for example, to share and/ or distribute video files, for creative expression with both videos and photos, a video- watching platform etc…'*

296.2.   Dailymotion SA, a freely accessible video hosting platform, has described in detail the meaning of OVHP and differentiated it from VODS. The relevant extract from its submissions is reproduced below:

> *'…**online video hosting platforms offer video hosting solutions to their users and their partners, allow them to access, display and editorialize their content themselves, without any content editorialization operated by the platform itself**. Users and partners can also freely share their content on their own environment, or allow it to be shared by others on third party websites or social networks.*
>
> ***Online video hosting platforms are freely accessible to visitors. User-generated content usually represent a substantial part of all the content accessible on these platforms***…'
>
> *'…The **service provided by video hosting platforms is fundamentally different from video on-demand platforms or catch-up TV platforms**:*
>
> *- catch-up TV platforms cannot be separated from linear TV broadcasts, whether they are freely accessible or not. These **catch-up TV services editorialize content after they have been first aired on linear TV**;*
>
> *- video on-demand ("VOD") dedicated platforms allow users to access video entertainment, without the constraints of a typical static broadcasting schedule. **Access to VOD platforms is subject to a payment from the user, usually in the form of subscription. As opposed to online video hosting platforms, VOD platforms do not allow user-generated content, and they do deeply editorialize the content published on their platform***…'
>
> *'…Moreover, **the nature of the premium content accessible on an online video hosting platform is usually distinct from the content***

accessible on a VOD platform: full-length premium content (sports competitions, films, series, etc.) are rarely made entirely accessible on video hosting platforms by rights holders. The video hosting platforms are sometimes used as audience relays for VOD services, and will only display movie trailers, best-of scenes, a soccer game's best moments, etc…'

(Emphasis supplied)

296.3. Google while explaining about its online Movies & TV services, has also stated that:

> *'…Google Play Movies & TV is a cross-platform online video on demand service. Google launched Google Play Movies & TV in India in 2013. Users can rent or purchase movies and TV series in standard or high definition, and download content for offline viewing on computers, tablets, and mobile devices. Google Play Movies & TV allows users to search for movies and TV series or view curated lists by category (e.g., Action & Adventure, Thriller, Top Charts, New Releases). Free trailers are generally available for each video on the platform. Users can rate and review hosted content…'*

(Emphasis supplied)

297. Based on the above, the Commission notes that characteristics and intended use of the OVHP services is different from that of Video on Demand Services as the latter is basically a streaming service through which either content produced by the service provider or acquired from other producers is streamed. VODS does not provide a video hosting service for its users hence their users cannot upload, convert, store and play back videos. It is mainly used for watching Movies and TV shows.

298. As far as price is concerned, it is noted that revenue model of OVHP services like YouTube is quite different from VOD services. VODSs mainly use a subscription-based revenue model which requires users to pay a monthly/ annual subscription fee in order to access their content. While YouTube generates major portion of its revenue from advertising, it also offers subscription-based service which allows users to view and download videos ad-free. In the revenue model followed by

OVHPs, even user/ subscriber who uploads the videos also gets opportunity to earn money. YouTube grants option to the consumers to create a personalized channel with a brand, business or any other name and register it for AdSense programme and the consumer becomes its channel partner. If the channel/ video of a subscriber becomes popular and viewed by a large number of other users, the revenue generated by YouTube through such channel is shared with the user/ subscriber of such channel/video.

299. Based on the above, the Commission notes that the services offered by OVHP are distinct from the VOD services including catch-up TV as Google itself offers separate services like YouTube and online Movies & TV services. In light of the different revenue model, characteristics and intended use of OVHPs as compared to VODS, the Commission finds that OVHP and VODS are non-substitutable for consumer/ user.

b) OVHP is different from other products

300. Google has claimed before the DG that YouTube competes with online video service platforms offering video streaming services in India such as TikTok; video expansion services provided by entities traditionally focused on online social networks services such as Facebook Watch; traditional ad-supported/ free video streaming platforms such as Dailymotion; music video and streaming platforms such as Spotify; and also face potential competition from international services not currently in India *viz.* Hulu, Crackle, *etc.*

301. In this regard, it is noted that though some social networking sites have introduced an additional feature of video uploading and sharing in their platform, however, their basic feature is to enable their users to find and make friends with other site members by creating and sharing personal profile. Hence, these platforms cannot be deemed to be video hosting platforms. Similarly, some messaging apps have video uploading and sharing facility in their platform.

However, their basic function remains instant messaging/ chatting that enables messages to be sent and received instantly. Hence these platforms also cannot be deemed to be video hosting platforms.

302. In this regard, the DG has also referred to a market study report of the United Kingdom's Competition and Markets Authority (CMA)[19] wherein the CMA noted that YouTube is primarily a market for consuming video content rather than a market for communication. As it noted, "…*consumers use YouTube for particularly distinctive reasons, compared to the reasons why they use Facebook* …" and also "...*YouTube does not currently appear to provide a strong competitive constraint on Facebook, despite its comparable reach and levels of consumer engagement*…".

303. In the context of examination of social networking sites, the DG has also referred to the *US Antitrust Subcommittee Report*, which made the following observations:

> '*...**In sum, social networking sites have a robust social graph, whereas content-centric sites do not. Although users can share videos or stream events on Facebook and YouTube in similar ways, there is a fundamental difference between sharing a video among a person's social network on Facebook, Instagram, or WhatsApp***—such as a child's first steps—and broadcasting it publicly on YouTube. **While people may spend significant time on both YouTube and Facebook, these firms provide distinct services to their users, and including both in the same market would be inconsistent with how users engage with each platform***...'*

(Emphasis supplied)

304. From the submission made by Bytedance, the Commission notes that short term video apps such as TikTok and Vigo video are different from YouTube. The relevant extract from the submission made by Bytedance is as follows:

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[19] Market Study Final Report dated 01.07.2020, published by UK CMA titled *Online Platforms and Digital Advertising*:
https://assets.publishing.service.gov.uk/media/5fa557668fa8f5788db46efc/Final_report_Digital_ALT_TEXT.pdf

> *'…typical online video hosting platform such as YouTube, and TikTok and Vigo Video differ due to the following:*
> - *the duration for which the content that can be uploaded on these platforms vary– for instance, TikTok is a platform for short-form videos, and YouTube allows users to share and/or distribute both shorter and longer video files; and*
> - *other typical online video hosting platform such as **YouTube can be accessed on the desktop web along with the mobile application, whereas the desktop version of TikTok is far more limited in terms of functionality than the mobile version.***
> - ***TikTok also offers some easy-to-use tools, including special effects, filters, etc.,** and TikTok's integrated editing tools allow users to easily trim, cut, merge and duplicate video clips without leaving the app…'*

(Emphasis supplied)

305. The fact that YouTube launched a short video format service *i.e.,* '*shorts*' evidences that short format video market is different from the traditional services being offered through YouTube. Shorts compete directly with another short video platform like TikTok and Vego. Therefore, Google by its business decision has tacitly accepted that YouTube was unable to address short video demand market. Thus, YouTube does not belong to short format video market.

306. In the light of the aforesaid analysis, the Commission delineates '*market for online video hosting platform (OVHP)*' as another relevant product market in the present matter. Further, in terms of delineation of relevant geographic market, it appears that the conditions for supply and demand of OVHPs are homogenous and distinct in India. Thus, 'India' has been considered as the relevant geographic market for online video hosting platform, in accordance with the provisions of Section 2(t) read with Section 19(6) of the Act. Therefore, fifth relevant market in the present case has been delineated, as the '*market for online video hosting platform in India*'.

Assessment of dominance of Google

307. The DG has examined the dominance of Google in the market for online video hosting platform (OVHP) in India. After analysis of various factors such as large

market share of YouTube; high & ever-increasing revenue of YouTube; high content availability; low downloads of competing apps, *etc.,* the DG has concluded that Google enjoys dominant position in market for online video hosting platform in India. The observations of the Commission in this respect are as follows:

a) Market Share Analysis

308. The Commission notes that the DG has used the data provided by Datanyze to examine the market share of YouTube and its closest competitor in the relevant market. Based on the same, it is noted that YouTube enjoys a market share of 88.24% in India amongst the online video platforms and is remotely followed by Vimeo with 7.91%.

309. Dailymotion in its reply has provided an insight into market share of the competing OVHP. The relevant excerpts from the reply are reproduced as under:

> *'...**Dailymotion has never conducted any specific research over the years to determine the market shares of our competitors.** Therefore, the only information we have access to are the publicly available ones. **According to Datanyze, a company owned by ZoomInfo, "YouTube's market share in the online video platforms market in India is 88.27%,** followed by Vimeo with a market share of 7.51%. **Dailymotion is not listed in this category, and only appears in the "other audio, video, graphics software" ranking since our service is mostly made of our video player**, and **Dailymotion's share in such market in India is 0.89% (tenth on the list), the first one being an open-source video player technology, MediaElement.js.** The ranking is based on the number of domains on which a given technology is used across the Internet…'*

> **(Emphasis supplied)**

310. Based on the above, it in noted that YouTube enjoys a high market share compared to any of its competitors.

b) Pre-installation v. Downloads

311. The DG has noted that YouTube comes pre-installed in all Android devices ▮▮ ▮▮▮▮▮▮▮ However, the mobile user has to specifically download and install

competing apps of YouTube. As already examined earlier, downloading a competing app from the app store cannot offset the advantage available to Google (YouTube) which is pre-installed and placed on the home screen of Android. This is also evident from the comparison of YouTube and its competing apps, as given below:

Table 11: Comparison of YouTube preinstalled in Android with competing apps downloaded through Play Store[20]

CY	YouTube (% of GMS)	Vimeo (% of GMS)	Dailymotion (% of GMS)
2011	■	▮	▮
2012	■	▮	■
2013	■	▮	■
2014	■	■	■
2015	■	■	■
2016	■	■	■
2017	■	■	■
2018	■	■	■

Notes:

(1) Since YouTube comes preinstalled in GMS devices, its share is taken as 100%.

(2) The number of yearly downloads (from Play Store) of key competing online video hosting platforms in Android have been indicated in absolute numbers and as % of GMS devices.

312. Based on this data, it is noted that Vimeo was downloaded by Android users in only ▮▮▮▮ of devices in India in 2015. The downloaded share increased to ▮▮▮▮ in 2017 before declining to ▮▮▮▮ in 2018. Dailymotion, in 2012 was downloaded by only ▮▮▮▮ of Android users in India but declined below ▮▮ downloads in subsequent years and in 2018 went down to as low as ▮▮▮▮ The share of downloads of competing apps to YouTube in OVHP market in India such as Vimeo and Dailymotion is abysmally low and insignificant which reflects the absolute dominance of YouTube in OVHP market in India. The same is corroborated from the data provided by Dailymotion.

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[20] Data provided by Google

313. A perusal of the aforesaid downloaded data of the competing apps to YouTube in India which is provided by Google itself and also corroborated by Dailymotion suggest that YouTube enjoys a dominant market share, and the customer/ user of the Android smart phones continue to have *status quo* bias in favor of pre-installed app *i.e.,* YouTube in India.

314. The DG has also examined the investment required in developing and maintaining an OVHP service. Google has made huge investments to develop its Online Video Hosting Platform *i.e.,* YouTube to bring it to a position of dominance. Google has provided data on the investments made by it on development of YouTube. In this respect, in the year 2015, Google spent ▮▮▮▮▮▮▮▮ which got increased to ▮▮▮▮▮▮▮▮ in the year 2018. Further, Google has spent high volume of yearly operating expenses as well on YouTube. This is visible from the fact that Google incurred operating expenses of ▮▮▮▮▮▮▮▮ in the year 2018 and of ▮▮▮▮▮▮ in the year 2019 for YouTube.

315. In this context, it is appropriate to refer to the reply of Dailymotion, the relevant extracts of which are provided hereunder:

> *'...There is no particular investment only made for the Indian territory. Our investments on R&D, upkeep and maintenance and updated are mostly related to data centers costs on a worldwide basis. Indeed,* ***Dailymotion spends approximately*** ▮▮▮▮▮▮▮▮▮▮▮▮*****,** which* ***corresponds to*** ▮▮▮ ***of our capital expenditures*** *(CAPEX), to purchase new servers, replace defective IT material, upgrade and maintain data centers' material'*

> **(Emphasis supplied)**

316. From the above comparison of investments made by Google with that by Dailymotion, the Commission notes that Dailymotion is nowhere in a position to invest and incur expenses for its product which may compete with YouTube. Its global investment for development of its product stands nowhere in comparison to what is incurred by Google for development of YouTube as seen from the data provided by Google.

c) Revenue of YouTube

317. The DG has noted that the importance and contribution of YouTube in earnings of Google is evident from the advertising revenue of YouTube. Referring to the Annual Report of Alphabet Inc. for the year 2019 filed with United States SEC[21], the DG has noted that advertising revenue of YouTube has registered a remarkable growth of more than 35% in 2019 (over the values of the year 2018) as against total Google advertising revenue growth of 15% (over the values of the year 2018).

318. The DG has also referred to the the press release dated 03.02.2020 issued by Alphabet Inc.,[22] while announcing the financial results for the Year 2019 which substantiates the story of the growth and dominance of YouTube as below:

> *'...I'm really pleased with our **continued progress in Search and in building two of our newer growth areas — YouTube, already at $15 billion in annual ad revenue**, and Cloud, which is now on a $10 billion revenue run rate....'*
> *Sundar Pichai, CEO of Alphabet and Google.*

(Emphasis supplied)

319. The importance and contribution of YouTube can further be gauged from the comments made about YouTube in the part titled '*Management's Discussion and Analysis of Financial Condition and Results of Operations*' as contained in the Annual Report of Alphabet Inc. for the year 2019 filed with United States SEC, which is reproduced here under:

> *'...As interactions between users and advertisers change and as online user behaviour evolves, we continue to expand and evolve our product offerings to serve their changing needs. Over time, we expect our monetization trends to fluctuate. **For example, we have seen an***

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[21] Form 10-K, filed with UNITED STATES, SECURITIES AND EXCHANGE COMMISSION: https://www.sec.gov/Archives/edgar/data/0001652044/000165204420000008/goog10-k2019.htm

[22] YouTube earned $15 billion in ad revenue in 2019, reveals Alphabet: https://www.businessinsider.in/advertising/ad-tech/news/youtube-earned-15-billion-in-ad-revenue-in-2019-reveals-alphabet/articleshow/73931935.cms

increase in YouTube engagement ads, which monetize at a lower rate than traditional search ads…'

...

YouTube ads

YouTube ads revenues increased $3,994 million from 2018 to 2019 and increased $3,005 million from 2017 to 2018. The largest contributors to the growth during both periods were our direct response and brand advertising products, *both of which benefited from improvements to ad formats and delivery and increased advertiser spending...'*

(Emphasis supplied)

320. In this regard, the DG has also examined the advertising revenue of YouTube in India which has also registered significant growth over the years. It is noted from the said data that advertising revenue of YouTube in India has grown exponentially during the years 2013 to 2018. From being only ▮▮▮▮▮ crores in year 2013, it grew to ▮▮▮▮▮ crores in 2018. Further, year to year percentage growth in the advertising revenue of YouTube in India during 2014 to 2018 has been significant and is in the range of ▮▮▮ in 2016 to ▮▮▮ in 2014. In 2018 also it registered a significant growth of ▮▮▮

321. In this regard, the annual revenue of competitors of YouTube, as noted by the DG is as follows: Combined revenue of TikTok and Vigo Video in India – Rs. ▮▮▮▮ in FY 2018-19, Revenue of Vimeo in India - Rs. ▮▮▮▮ and that of Dailymotion - Rs. ▮▮▮▮. A bare perusal and comparison of this data reveals that competitors of YouTube are far behind and have negligible revenue in comparison to that of YouTube.

d) Content availability and users on YouTube

322. The DG has also examined the content available on YouTube submitted by Google. Based on the same, it is noted that the number of video available on YouTube in India has gone up ▮▮▮▮ during the period 2011-2019. The number videos available on YouTube have increased from ▮▮▮▮ in 2011 to ▮▮▮▮ in first quarter of 2019. Further, YouTube is also found to be the largest

source of videos and it also plays a huge role in social media and brand awareness development. YouTube drives the largest amount of traffics for videos and host the largest internal search engine through which video can be traced/ tracked from its library.

323. As regards number of active users of YouTube in India, the number of logged in monthly active users on YouTube in India on an annual basis, as provided by Google, is tabulated below:

Table 12: Average Number of accounts which Accessed YouTube at least once in the 28 Days Preceding the End of the Year

Year	Mobile				PC/ Desktop	%	Total
	Android	%	Non-Android	%			
2015	███	█	███		███████████████		
2016	███	█	███		██████████████		
2017	█████		████		██████		████
2018	█████		███		██████		████
2019	█████		███		██████		████

324. Based on the above, it is noted that YouTube had ████████ users in 2015 which kept on increasing in subsequent years and in 2019 it has ███████ users in India. In the last five years, the Android platform in which YouTube comes pre-installed has become one of the most important platforms for viewership in terms of monthly active users. The active users of YouTube through Android which was ████████ in 2015 increased steadily and has gone up to ███████ in 2016, ████████ in 2017, ████████ in 2018 and to ████████ at the end of March 2019. The active users of YouTube through Android in March 2019 constitute a massive ████ of the total viewership of YouTube in India.

325. Further, as of May 2019[23], more than ▮▮▮▮▮▮ of video were uploaded to YouTube every minute. This equates to approximately ▮▮▮▮▮▮ of newly uploaded content per hour. The amount of content on YouTube has increased dramatically as consumer's appetites for online video has grown.

326. The DG has also noted that YouTube occupies the top position in the video streaming apps including in India. Based on the available data, the Commission notes that in India, top five video streaming apps in sequence of ranking are YouTube, Hotstar, JioTV, Amazon Prime Video and Voot. As already stated, pure streaming services (*viz.* Hotstar, Jio TV, Amazon Prime Video and Voot) are already outside the scope of relevant market in the present case. Thus, none of the competitors of YouTube feature in this list which signifies its competitive strength over its rivals.

327. Lastly, Google's dominance in the market for online video hosting platform in India is also depicted by the below provided data[24] which helps understand its dominance from different parameters in India such as number of hours of YouTube content watched in India, growth in the YouTube watch time by users in India, huge number of users base of YouTube in India etc.:

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[23] Data on *Hours of video uploaded to YouTube* published at,
https://www.statista.com/statistics/259477/hours-of-video-uploaded-to-youtube-every-minute/
[24] Why Businesses Need YouTube SEO?: https://www.chirpin.in/youtube-seo/
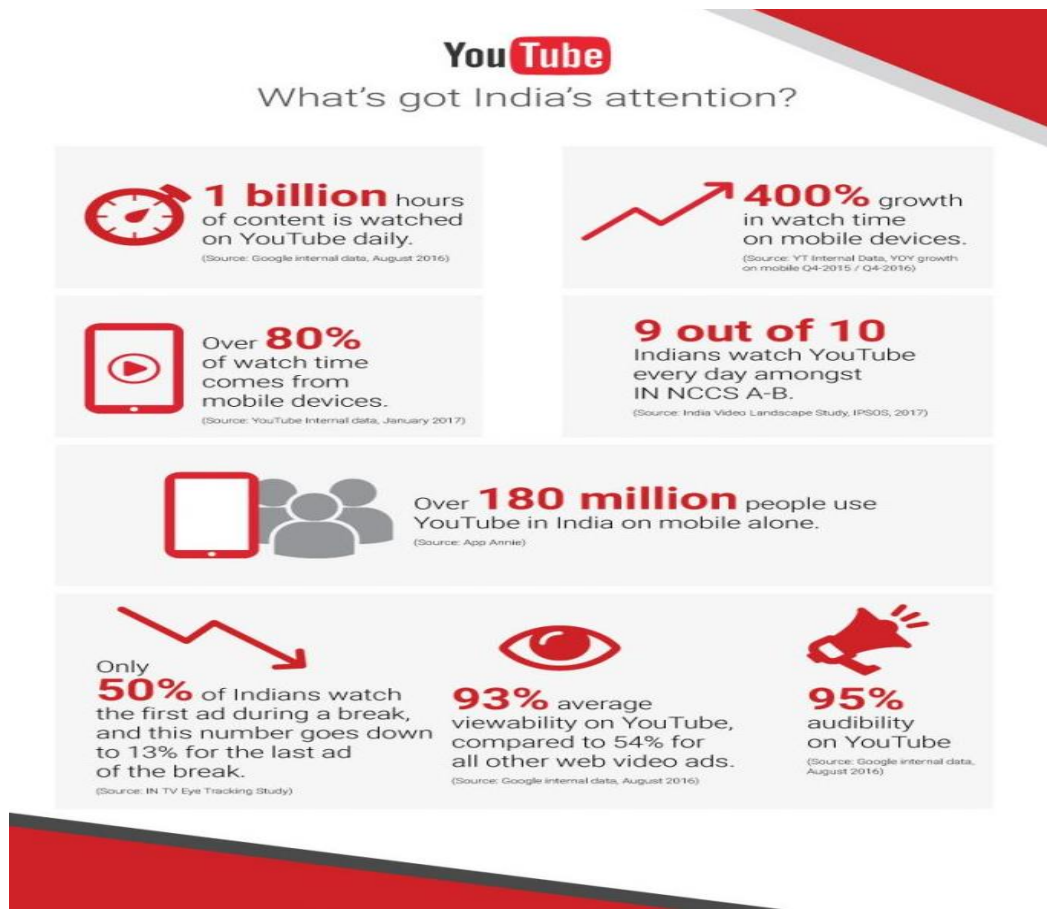
328. Thus, based on the aforementioned analysis, the Commission holds that Google's YouTube enjoys dominant position in market for online video hosting platform in India.

329. To summarize, the Commission determines following five relevant markets in the present matter:

  a. Market for licensable OS for smart mobile devices in India

  b. Market for app store for Android smart mobile OS in India

  c. Market for general web search services in India

  d. Market for non-OS specific mobile web browsers in India

  e. Market for online video hosting platform (OVHP) in India.

330. Further, the Commission also holds Google to be dominant in all these relevant markets.

331. After delineation of the relevant market as well as determination of dominance of Google in these markets, the Commission now proceeds to examine the alleged conduct as to whether the same amounts to abuse of its dominant position by Google, in violation of Section 4 of the Act.

Assessment of alleged abuse of dominant position by Google

332. The Commission notes that the instant case relates to the alleged abuse of dominant position by Google in the mobile operating system and related markets in contravention of the provisions of Section 4 of the Act. In terms of Section 4 of the Act, an enterprise or a group, enjoying a dominant position in a market, is prohibited from abusing its dominant position in the relevant market. Section 4(2) of the Act lists out various conducts which tantamount to abuse of dominant position. At this stage, it would be prudent to reiterate the provisions of Section 4(2), which reads as follows:

> *(2) There shall be an abuse of dominant position under sub-section (1), if an enterprise or a group, —-*
>
> *(a) directly or indirectly, imposes unfair or discriminatory—*
>   *(i) condition in purchase or sale of goods or service; or*
>   *(ii) price in purchase or sale (including predatory price) of goods or service.*
>
> *Explanation.— For the purposes of this clause, the unfair or discriminatory condition in purchase or sale of goods or service referred to in sub-clause (i) and unfair or discriminatory price in purchase or sale of goods (including predatory price) or service referred to in sub-clause (ii) shall not include such discriminatory condition or price which may be adopted to meet the competition; or*
>
> *(b) limits or restricts—*
>   *(i) production of goods or provision of services or market therefor; or*

(ii) technical or scientific development relating to goods or services to the prejudice of consumers; or

(c) indulges in practice or practices resulting in denial of market access in any manner; or

(d) makes conclusion of contracts subject to acceptance by other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts; or

(e) uses its dominant position in one relevant market to enter into, or protect, other relevant market.

333. Based on the allegations against Google, the DG has identified 7 different issues for determination *i.e.,* whether Google has abused its dominant position or not in respect of each of such alleged conduct.

334. The reasoning and findings of the DG, submissions of Google on these issues and the analysis of the Commission, in this regard, is given in succeeding paragraphs. Considering the commonality between various issues, five of them are being discussed together in the following part of the order which will be followed by Google's submissions on MADA/ RSAs and the Commission's analysis of the same.

ISSUE I: Whether mandatory pre-installation of entire GMS suite under MADA amounts to imposition of unfair condition on the device manufacturers and thereby infract provisions of Section 4(2)(a)(i) and Section 4(2)(d) of the Act?

ISSUE II: Whether Google has perpetuated its dominant position in the online search market resulting in denial of market access for competing search apps in contravention of Section 4(2)(c) of the Act?

ISSUE III: Whether Google has leveraged its dominant position in Play Store to protect its dominant position in online general search in contravention of Section 4(2)(e) of the Act?

ISSUE IV: Whether Google has abused its dominant position by tying up of Google Chrome App with Play Store and thereby violated provisions of Section 4(2)(e) of the Act?

ISSUE V: Whether Google has abused its dominant position by tying up of YouTube App with Play Store and thereby violated provisions of Section 4(2)(e) of the Act?

335. In the instant case, the Informant(s) have alleged that Google hindered the development and market access of rival mobile apps or services by requiring smartphone and tablet manufacturers to exclusively pre-install Google's own apps and/ or services in order to get access to Google Mobile Services ('GMS'). It has also been alleged that Google offers its mobile apps and services to device manufacturers (OEMs) as a bundle, which includes the Google Play Store, the Google Search App, YouTube and Google Chrome Browser etc. An OEM seeking to go beyond the 'bare Android version' and to make use of any of the Google Apps must sign a Mobile Application Distribution Agreement ('MADA'). Further, as per the Informant(s), the said agreement not only mandates 'pre-loading' of these Google apps but also determines the 'placement' of Google apps on the device.

336. The Informant(s) have further alleged that MADA place restrictions on the device manufacturer's choice of apps by requiring them to avail all Google apps, even if the manufacturer need to avail benefit of only one or two apps of Google. Thus, as per the Informant(s), Google 'ties' or 'bundles' certain Google apps and services (such as Google Chrome, YouTube, Google Search *etc*.) distributed on

Android devices in India with other Google applications, services and/ or application programming interfaces of Google.

337. It has further been stated that Google Play and YouTube are applications without which Android based smart phone devices might not find consumer preference. Moreover, as per the Informant(s), Google withholds competing app stores from providing Google's own apps like YouTube. Further, it has also been alleged that licensing of the Play Store which provides access to Google's own apps as well as third party apps on Android device is conditional on Google search being pre-installed and set as default search service.

338. It has also been alleged that the MADA implements Google's strategy of making GMS an 'all-or-nothing' choice for OEMs, increasing the likelihood of OEMs choosing the Google's app suite and correspondingly increasing the barriers against competition from makers of rival apps. Moreover, a competitor is unlikely to agree to an inferior placement adjacent to Google apps. It is alleged that this, thus, leads to deference to default for the user of pre-installed GMS apps.

339. The observations of the Commission, in this regard are elaborated in succeeding paragraphs.

A. Pre-installation and premium placement of GMS under MADA

340. The DG examined the obligations laid down in MADA based on various factors such as lack of bargaining power of OEMs *vis-à-vis* Google; need for 'must have' apps which compel OEMs to sign MADA; failure of some OEMs suggesting signing of MADA is a mandatory requirement for success of their smart phone device; GMS apps being not available on Android's Play Store; number of mandatory apps of GMS decided at sole discretion of Google and independent apps bundled as a 'group'; MADA to be signed in conjunction with AFA; *etc.* Based on these parameters, the DG has concluded that pre-installation of entire GMS suite under MADA amounts to imposition of unfair condition on the device

manufacturers and thereby infract provisions of Section 4(2)(a)(i) and Section 4(2)(d) of the Act.

341. Before adverting to the issues at hand, it would be apt to refer to the contentious clauses of MADA. The relevant extract of MADA between Google and ██████ ████████████████ dated ██████████ are reproduced below:

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[REDACTED]

(Emphasis supplied)

342. The Investigation has revealed that most of the MADA agreements entered into during 2011-14 were extended till 2017. The obligations entailed under these agreements are summarized as follows:

    342.1. OEMs have to pre-install all of the Google's proprietary applications (including Play Store, Search, Chrome, YouTube, Maps, *etc.*) on each smart device.

    342.2. Placement of Google Search Widget, an icon labelled as 'Google' that provides direct access to collection of icons for Google applications specifically mentioned and Google Play Client icon, on the default home screen of each device.

    342.3. All other Google applications pre-installed are placed no more than one level below the default home screen.

    342.4. Google search to be set as default search provider for all web search access points on the device (including the pre-installed browser).

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27 Hotword means voice activated trigger that enables voice commands on the Device.

342.5. Ensure that by long pressing the 'Home' button on devices with physical navigation buttons, or long touch activities on devices with soft navigation, Google search app is accessed.

342.6. Implement the Google hot word if the device supports multiple hot words and Google's Hotword must directly launch Google's search unless otherwise approved by Google in writing.

343. Google, *vide* its submission filed in 2019, stated that,

> '...***Today the MADA imposes no search default requirement***. *A* ***default search app on Android is an app that has been configured by the OEM or end user to respond to an Android search intent***. ***Intents let an app ask another app to open and carry out a task*** *(e.g., inserting an appointment in the calendar, answering a search query).* ***"Explicit" intents ask a specific app (e.g., Google Search) to carry out the task. "Implicit" intents ask Android to identify an app capable of fulfilling the request. If more than one app can carry out an implicit intent (e.g., Google Search and Bing) and no default is set, the user will see a choice screen.***

344. Accordingly, the Investigation also examined MADA agreements entered later on by Google with OEMs and in this context, as an example, the relevant extract of MADA between Google and ███████████████████████████████ are reproduced herein below:

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[REDACTED]

(Emphasis supplied)

345. The Commission notes that the Investigation has revealed that most of the MADA agreements entered into during 2011-14 were extended till 2015-2017, wherein Google search is mandated to be set as default search provider for all access points on the device. The MADA executed thereafter (*e.g.,* MADA executed in 2018 mentioned above), the requirement to set Google search as default search provider for all web search access points on the device, has been removed. However, the Commission is of the view that the same is rendered less effective to a large extent by various factors *viz.* requirement of setting up Google as the default Assist App

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[29] Assist App means an Android system application that an End User may use to obtain information and perform actions.

which in turn relies on Google's search services for providing appropriate results to the users, replacement of Google search with Google Assist for long press and long touch activities. Further, the Commission notes that the requirement to set Google as the default and exclusive search service, are now provided under the RSAs (discussed separately in this order).

346. Thus, the MADAs, executed in 2014 and earlier, mandated Google search to be set as default search provider which helped Google to secure a competitive edge over its rivals. Thereafter, this requirement is governed by RSAs and thus, the MADA alone cannot be read to determine the issues at hand and all the relevant agreements *i.e.,* MADA, RSAs and AFA/ ACC have to be read together to come to a conclusion.

347. To examine the bargaining power of Google *vis-à-vis* OEMs while finalizing the terms and conditions of MADA, the Investigation asked a question to Google as to *'what kind of negotiations take place between Google and OEMs in relation to MADA?'*. To this query, Google in its response submitted *inter-alia* the following:

[REDACTED]

348. Further, in response to query of the Investigation as to *'whether OEMs have any* choice *to pick and choose Google's proprietary apps from GMS bundle for installation in their Android handset under MADA?'*, Google has stated as follows:

[REDACTED]

(Emphasis supplied)

349. In this regard, it is important to refer to the submissions of the OEMs, which are extracted below:

349.1. Xiaomi has submitted that,

> *'...The **pre-installation/ placement of Google applications under MADA have continued without any changes since Android 4. Since then, there have been no negotiations with respect to these placement obligations under the MADA**. Some of the other pre-installation deals with Google, for example for Google Lens, were negotiated with Google, with regard to placement and commercial terms...'*

(Emphasis supplied)

349.2.   Oppo has submitted that:

> '...*The company do hereby kindly submit that **there was no such specific negotiation happened regarding regard to pre-installation/ placement if Google application under MADA**...*'
>
> **(Emphasis supplied)**

349.3.   Huawei has emphasized that:

> '...*For pre-installation/ placement of Google applications, **Huawei just follows Google's request in the MADA Agreement**...*'
>
> **(Emphasis supplied)**

349.4.   Karbonn has submitted that:

> '...***there were no negotiations between Google and Karbonn** with regard to pre installation of Google Applications under MADA...*'
>
> **(Emphasis supplied)**

349.5.   Vivo has submitted that:

> '...***to use Google's GMS, Vivo need to follow Google's GMS and CDD requirement, and need to pass a series of tests that is provided by Google for every software build**, such as CTS/GTS/VTS……*'
>
> **(Emphasis supplied)**

350.   In the context of OEMs not having the ability to negotiate MADA terms, Google claims that the DG completely ignored Samsung's submission that Samsung and Google negotiate various issues regarding the parties' rights and obligations under the MADA. The Commission notes that as per Google's admitted position as quoted above, Google does not negotiate on the key terms related to pre-installation of entire GMS suit as well as the placement thereof. Therefore, the argument made by Google becomes moot. In addition, various OEMs have also submitted that there are no negotiations with Google *w.r.t.* MADA. Thus, there is no merit in the argument advanced by Google.

Weak countervailing buyer power with OEMs

351.   The Investigation has further revealed the critical importance of Play Store and other '*must have*' app such as Google Play Services for the OEMs which invariably coerce them to sign MADA. In this regard, based on the replies/data of

the OEMs, it is noted that ██

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indicates the criticality of Google Play store, YouTube, Google APIs, *etc.* as '*must have*' apps for the devices of the OEMs to succeed in the market.

352. The Commission is of the view that Google Play as well as Google's version of Android is regarded by OEMs as a 'must have' product for Android mobile devices. As already discussed, Google Play is by far the largest supplier of Android applications even over other competing app stores. This is consistent with Google's own description of Google Play as '*the premier store for distributing Android apps*'. Similarly, Google's Android include various updated APIs which are not available in AOSP. Google Play Services[30] handles important functions in the background and without access to these APIs, a vast majority of Android apps which rely on these services to interact with the OS and the hardware, will simply fail to work. Given the fact that Android based applications are written to work with Google Play Services, a smart device without Google Play Services would not be commercially viable or at-least the OEM offering these devices would be competitively disadvantaged. In this regard, the DG has noted that mobile search functionality within AOSP stopped developing around Android version 2.2, while, Google has continued to develop the search functionality within Google Play Services with later versions of Android. The Investigation has used following picture to depict the difference in search results in two devices:

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[30] This is a software layer which gives access to a host of application programming interfaces ('APIs') which developers can use in order to interface their applications with Google online services. These range from APIs required to interface specifically with individual functionality of Google applications, to APIs which are required to provide general levels of functionality within Android.

Example of difference between AOSP Search and Google Search, 2013
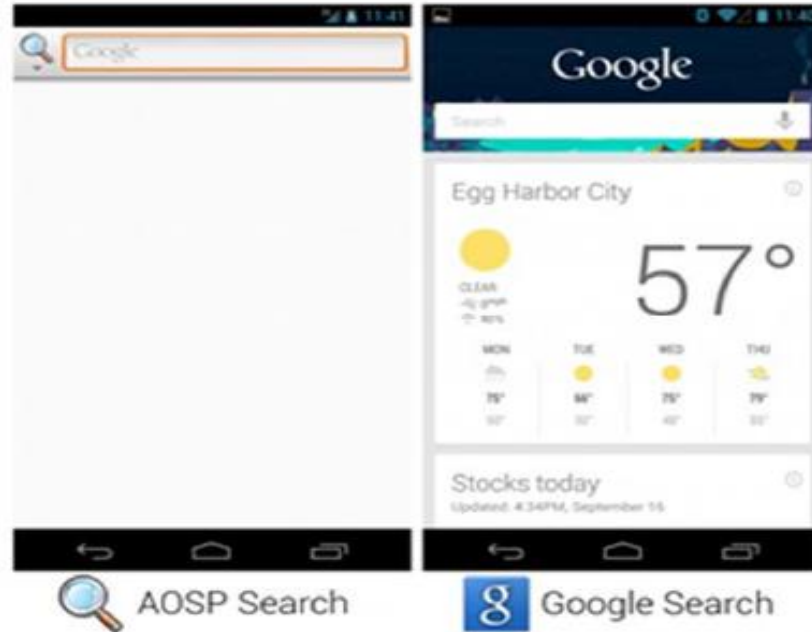
353. The Investigation has further noted that the Google version has search by voice, audio search, text-to-speech, an answer service, and it contains Google Now, the company's predictive assistant feature. The AOSP version can do only Web and local searches but provides none of the additional functionalities. The Investigation further revealed that new APIs are now found only within Google Play Services. Further, Google Play Services automatically runs in the background of every Android phone with GMS. Contrary to other applications, it is updated automatically, without the user's explicit permission or knowledge. This means that every Android mobile device that has Google Play Services always has the latest version of Google Play Services.

354. It is further noted that Google's apps covered in GMS have attained a status that without them, the customers would not be find a smart device attractive. Accordingly, the OEMs would not be in a position to offer devices with 'bare Android' and the same has been evidenced by the submissions of OEMs, where they prefer to offer devices with Google's GMS apps. The Investigation also revealed that if a device manufacturer is prepared to offer a 'bare' Android device,

it need only pass technical tests and accept the Android License Agreement. This approach reduces the contractual restrictions the OEM must accept, potentially increasing flexibility to configure a device as the manufacturer sees fit. However, this approach foregoes several key benefits that most device manufacturers seek, *e.g.,* bare Android devices are not permitted to include any Google apps (the distribution of which is conditioned on other contracts such as MADA and AFA). For some Google apps, the device manufacturer may substitute an alternative, perhaps MapmyIndia Maps instead of Google Maps. But for other Google apps which are considered 'must have' such as Play Store, the alternative is less clear. Without Google Play, from bare Android devices, users cannot easily obtain the apps both of Google and of independent app developers which they typically expect to obtain.

355. Google Play and Google Play Services which are considered to be very important for OEMs, are not available for independent download by users. Therefore, any OEM who wants to offer these 'must have' services to its customers must sign, and accept the restrictions laid down in MADA, AFA/ ACC and thereafter, RSAs to maximize the revenue. The tying by Google of its must have apps with other apps (which have competing apps) results in securing competitive edge over competitors. However, in this entire set up, the competition in the market suffers which is evident from the failure of Google's competitors in the OS as well as search market which ultimately results in less choice for users.

356. In this regard, it is pertinent to note the example of Amazon's Fire Phone which was based on 'bare Android'. The Investigation noted that Amazon began to distribute Fire Phones which did not preload any Google apps and indeed were not marketed with the Android name or logo, in July 2014. Furthermore, if a consumer had already purchased a paid app *via* Google Play for a prior Android device, a non-Google-Play device would be unable to recognize the prior purchase or install the app—requiring the customer to repurchase every such app. With these limitations, the Fire Phone was not commercially viable, and Amazon

discontinued it just one year after launch. Amazon in its reply has brought out the negative impact of MADA agreement on device manufacturers in both direct and indirect ways. The relevant extracts from the response of Amazon are reproduced as under:

> *'...**Amazon expected that signing the MADA would have an adverse impact on the use of the Amazon Appstore, Amazon's Silk browser, and potentially any other Amazon app that competes with Google's apps or services because Google mandates pre-installation and premium placement of all the GMS apps on Android devices.** The availability of the Google Play app store on Amazon devices would have led to app developers choosing to focus on developing apps for the Google Play app store, which would have made the Amazon Appstore less attractive to end users, and therefore, hindered the growth of the Amazon Appstore business.*
> ***In conclusion, considering the over-arching powers that are conferred on Google through Google's Mandatory Terms,** Amazon decided against choosing the second option...'*

> *'...**Moreover, the restrictions imposed by Google in relation to the access to GMS (which was contingent upon signing the MADA) and other limitations precluding the interoperability of Android apps would continue to serve as a significant impediment to the adoption of smartphone devices running on the Fire OS,** irrespective of the availability of a broad range of such devices. **Consequently, Amazon had to focus on distributing the Fire OS on the Amazon- branded smart mobile devices only, rather than by partnering with OEMs...'***

> *'...███████████ (i.e., **Amazon's program to develop its own branded smartphone, the Fire Phone**) was launched in 2014. Foxconn was the ODM manufacturing the Amazon branded Fire Phone. **However,** ███████████ **also failed to become a commercial success. It is submitted that the failure of** ███████████ **is attributable, inter alia, to (a) the lack of access to GMS on account of Amazon not signing the MADA; (b) the lack of access to Google Play and (c) the lack of associated mobile applications...'***

> **(Emphasis supplied)**

357. Another example referred to in the Investigation Report in this regard is that of Nokia which was later acquired by Microsoft. In 2014, Nokia X platform, a forked Android operating system developed by Nokia was introduced for a new line of smartphones. This operating system provided several innovative features to

consumers and developers, including low application cost maintenance and new in-app payment software. Because Nokia X was based on bare Android, the operating system could not pre-install Google apps. Thus, Nokia developed an entire ecosystem of apps to replace Google's GMS suite, including the Nokia Store to replace the Play Store. Despite providing these alternative apps, Nokia faced poor reviews and customer complaints due to the lack of Google apps on Nokia X.

358. Subsequently, in April 2014, Microsoft announced its purchase of Nokia so as to become a manufacturer of smart mobile devices as well as a provider of OSs for smart devices. However, Microsoft also could not succeed due to 'app gap' as Windows phone OS platform did not have many of the popular mobile apps on which consumers had come to rely. In this context, it is pertinent to refer to the extract of the reply submitted by Microsoft, which is provided hereunder:

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(Emphasis supplied)

359. The Investigation further referred the experience of mobile software firm Cyanogen which, in 2014, launched 'Google-free' version of Android, substituting third-party services for each component of GMS. But Cyanogen's suite of competing apps could not match Google's functionality. Moreover, Cyanogen's strategy was limited by Google's various restrictions, including preventing Cyanogen and manufacturers from selecting desired Google apps (due to MADA restrictions) and preventing manufacturers from shipping some Cyanogen devices and some GMS devices (per the Anti-Fragmentation Agreement).

360. The Commission further notes that Google apps like Search, Chrome, YouTube, Gmail, Maps & Navigation, *etc.* can be downloaded separately through Microsoft Windows Phone & Apple iOS but not on Android smart phones through competing app stores. The abovementioned practice of Google squeezes the market presence of competing Android app stores due to absence of 'must have' apps of Google. Google argues that "…*GMS apps are not distributed through Android app stores other than the Play Store because third-party app stores may suffer from security issues, malware, and unreliable experiences that compromise the high quality, secure, and reliable experiences that users associate with Google's apps...*". The whole argument of Google for various obligations/ restrictions is towards providing a secured and safe environment to users. The Commission however, notes that Google's conduct is driven by the fact that to reach users on other platforms *viz.* iOS and the erstwhile windows phone OS, it needs to make its applications available on these platforms through their respective app stores. In case of Android based devices, Google already has access to all the Android users. Distributing its proprietary apps through competing app stores on Android would strengthen these app stores and weaken the grip of Google on the Android ecosystem. By way of this conduct, Google ensures that

OEMs are dependent on its Play Store and restricted the growth of alternative app stores. In view of the foregoing, the Commission finds that Google's selective approach in allowing/ not allowing its apps to be downloaded through other app stores is being driven by commercial considerations and not by safety consideration concerns, as claimed by Google.

361. Based on the above, the Commission concurs with the findings of the DG that Google Play Services is a critical input for Android OEMs, and that this importance is only increasing. Thus, the OEMs consider Google Play Store, Google Play Services, *etc.* as 'must have' apps and services. Further, device manufacturers seeking to offer commercially viable Android devices have no choice but to sign the MADA thereby accepting the significant restrictions it contains and any deviations may increase the likelihood of failure of device based on 'bare android'. Accordingly, it compels OEMs to sign MADA with Google, even if unwillingly.

Determination of GMS apps at sole discretion of Google

362. The Investigation also revealed that the number of mandatory Google apps in most of MADA increased until 2017. Apart from search widget and Google Play icon, Google folder on default home screen contains 11 applications namely Chrome, Gmail, Google Map, Google Play Music, Google Play Movies, Google Drive, YouTube, Google Photos, *etc.* Google's licensing agreement gave Google the right to amend the list of apps it required device manufacturers to pre-install.

363. In this regard, the Investigation also referred to the *US Antitrust Subcommittee Report*, the extract from which is reproduced below:

> '...***Documents show that market participants expressed frustration at Google's ability to set the terms and also change them routinely***. *Explaining the situation, Mr. Brady wrote,* ***Some OEMs . . . do not like the idea of signing up to undefined requirements, but most of our partners are somewhat used to this as the [c]ompatibility***

requirements evolve with each release, and our [Google Mobile Services] suite expands (incl. mandatory apps) over time…'

*'…Other smartphone manufacturers also attempted to resist Google's terms, noting that the **requirements were crowding out placement for other apps while also taking up significant memory. For example, in 2014 one hardware manufacturer requested that Google "reduce the number of preloaded apps on the device . . . so that we don't clutter our products with apps that may not be necessary for the majority of users and we give them as much space as possible,"** adding that this would also "help us deal with complaints from governments, NGOs and end users."*

….

Despite complaints that Android's pre-install conditions favored Google's products at the expense of user experience, Google maintained its requirements. Interviews with market participants suggest that Google's ability to set the terms of commerce hurt mobile device manufacturers as well as third-party developers, both of which had their own apps they were seeking to distribute. In a submission to the Subcommittee, one third party recalled being informed by a device manufacturer "that it could not provide home screen placement for our preloaded app due in part to contractual agreements to preload [Google's competing app].'

(Emphasis supplied)

364. The Commission is of the view that Google Play and other apps of Google covered under GMS *viz.* Search, YouTube, Chrome have different functionalities and thus, there is no technical necessity to offer these services together. Google also admits that the pre-installation requirement is a promotional opportunity for Google. The essence of the obligations imposed by Google under MADA is that if an OEM finds even a single Google app essential to the commercial success of its mobile devices, it must preload all other Google apps. As already noted, some Google apps *viz.* Play Store, Play Services, *etc.* are considered as 'must have' by the OEMs. Thus, if an OEM wishes to pre-install Play Store and/ or Google Play Services, they are required to also pre-install other Google services and apps, including Google Search, which had other competitors in the market. While some GMS apps, like the Play Store and YouTube, lack meaningful competitors, others do not. For example, Google search, Google Drive, Gmail and Google Maps also had competitors operating in the market.

365. In this regard, it is apposite to refer to the response of UCWeb Mobile Private Limited (UCWeb), which offers UC Browser as a competitor to Google Chrome browser in India. The relevant extract from UCWeb response is provided hereunder:

> '*...while **currently paying OEMs for pre-installation on their smart mobile devices is still one of the most effective methods of distribution for third party browsers, given the market position of Google's Android ecosystem and the revenue incentives that Google offers to OEMs for pre-installation of Chrome, OEMs continue to pre-install Google Chrome. Consequently, the capital investment to incentivize OEMs to pre-install other third party browsers will be significant**.*
>
> *...for a third-party mobile browser, finding an efficient and direct way to approach to the end users is a key factor for distribution. Normally, **an OEM selling an Android system device could preload three to four web browsers i.e., Google Chrome, OEM's own browser (which is developed by the OEM itself) and a third-party browser, such as UC Browser or Opera Mini. However, as the size of the mobile phone screen is compact, this limits the preloaded browser choice of the OEMs**.*
>
> *More than 50% of the end users do not express a preference for any particular web browser and **a majority of the users prefer to continue to use the default browser. Therefore, being pre-installed on an Android device is important to every third-party browser developer**... '*

> **(Emphasis supplied)**

Seeking approval from Google for launching the device

366. MADA also requires that an OEM has to obtain Google's approval for each new device. However, nothing in the MADA compels Google to provide its approval in any particular circumstances or with any particular speed. Thus, Google retains significant discretion in each circumstance. For initial launch of each device model, the OEM has to submit all device related information including device specifications and related information not less than 30 days before each launch and has to submit CTS report of each launch. After approval of Google with regard to implementation of Google applications, the devices would be distributed

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(Emphasis supplied)

367. Amazon Development Centre India Private Limited (Amazon) while elaborating its experience of developing Fire OS phones, in its submission, has pointed out restrictive nature of MADA, amongst others. Some key extracts from its submission are reproduced below:

> *'…Google's Mandatory Terms also confer wide unilateral powers on Google. For instance, **under the MADA, GMS licensees are required to submit their devices (prior to the launch of such devices) to Google for approval purportedly "to ensure adherence to the terms and conditions of [the MADA],** including but not limited to the Google's Mobile Branding Guidelines". As a result, GMS licensees cannot distribute Android devices if they do not comply with Google's Android Compatibility Test Suite ("CTS") and Compatibility Definition Document ("CDD"), as the MADA makes the GMS license contingent on devices being Android Compatible Devices. Ostensibly, the CTS and CDD purport to provide technical consistency across Android devices. In reality, **Google alone administers the CTS and CDD and retains broad discretion to veto or block distribution of devices.***
>
> *Amazon also understands that Google requires GMS licensees to submit all Android devices to Google for approval, regardless of whether the devices preload GMS or are based on the Android Open Source Project. This **requirement under MADA means that licensees relinquish the 'freedom' that they would otherwise enjoy as a result of using open source software**.*
>
> *Amazon evaluated internally whether to license Android OS and GMS because of the barriers created by the absence of GMS (which were and are seen as "must have" apps by customers). However, on balance, **Amazon decided against entering into a GMS license because it would be a 'one-way door' and result in ceding too much control to Google over Amazon's current and future devices**. Amazon's acceptance of Google's Mandatory Terms would have posed significant constraints on Amazon's business activities.'*

(Emphasis supplied)

368. By virtue of these covenants, Google seeks to retain control over the devices launched by the OEMs.

369. The Commission is of the view that if OEMs want to install Play Store, which is a must have app for the OEMs, in their Android devices, they have to enter into MADA and install all Google Apps (GMS). The Play Store has been found to be dominant in the relevant market for app stores for Android mobile OS and as such the OEMs have no choice and they have to pre-install all the Google apps covered under GMS on the default home screen of Android device even if they want to

pre-install only a few of them. Thus, under MADA, OEMs have no choice/ freedom to decide as to which all Google apps they want to be pre-installed in their devices. All Google mandated apps are required to be compulsorily pre-loaded. The OEMs cannot decide to mix and match various combination of Google's and other apps to offer a different 'out of box' experience on different devices to users.

370. Google has claimed that the DG has cherry picked the evidence that ostensibly confirmed the Informants' allegations. In the context of the MADA's terms allegedly deterring OEMs from distributing other apps and services, Google claims that the DG completely ignored that Sony had submitted that *"Sony apps and third-party apps were preinstalled and placed in the prime screen of Xperia smartphones. Such apps did not fill up the space of the prime screen. Therefore, there were no conflicts with Google's proprietary Apps."* Google further avers that the DG also ignored Sony's submission that they do not "*expect any negative impact*" because of the placement requirements under Google's licensing agreements.

371. The Commission notes that in contrast to the assertions of Sony, Lava (another OEM) has submitted that "….*It is a matter of fact that every user tends to look at and use the home screen of his/her device the most. Thus, the apps placed on the home screen tend to be used the most. Such prime screen location are fixed for Google Apps which cannot be replaced by any other app the user or OEM might want……………it leads to a situation where no partnership between OEM and third party app developer lasts, since there is very little chance of popularity of any other apps. This does lead to a monopoly type situation which is harmful for any business ..*" .

372. The Commission is of the view that the inferences drawn on any issue are to be based on a holistic assessment and appreciation of the evidence collected. Accordingly, the Commission has examined all the evidence placed on record to

give its findings as detailed in this decision and thus, the averments of Google do not have any merit.

373. Based on the foregoing analysis, the Commission is of the view that various covenants of MADA are in the nature of imposition of unfair conditions on OEMs who have no choice but to accept the same. As already stated, Google does not negotiate on key terms of the MADA which are found to be resulting in anti-competitive conduct *viz.* pre-installation of entire suit of GMS as well as prominent placement thereof. By foreclosing the market for rivals, these covenants have also reduced the potential choice for users. Further,the pre-installation requirement for the entire bouquet of apps of Google is in the nature of supplementary obligation imposed on the OEMs, if they wish to pre-install even a single app of Google. The Commission is of the view that these practices of Google, especially when seen along with AFA/ ACC and RSAs, harms competition as the restrictions prohibits alternative vendors from outcompeting Google's apps on the merits.

B. Tying of Play Store with Google Search

374. The Informant(s) also alleged that the licensing of the Play Store, which provides access to Google's own apps as well as third party apps, on Android devices is conditional on Google search being pre-installed and set as a default search service. The Informant(s) further averred that by requiring the device manufacturers to pre-install Google search, Google restricts the ability of new or competing search engines to become default search application. It is stated that search access point on devices are important entry points for search browser on mobile devices. Further, every search access point can support only one default search provider. Thus, the default setting ensures an exclusivity to the vendor. If a device is pre-installed with certain apps, the likelihood of consumer undertaking the task of side loading other apps lessens. It is thus, alleged that imposition of these terms & clauses hinders the development and market access of rival mobile applications or services by requiring the device manufacturers (OEMs) to

exclusively pre-install Google's own application and services in smartphones manufactured in/sold in/ exported to/ marketed in India, thereby violating Section 4 read with Section 32 of the Act.

375. Accordingly, the DG formulated two issues as mentioned above (Issue II and III) for analysis and examined the same based on various factors *viz.* pre-installation being an important channel for the distribution of general search service on smart mobile devices; competing general search services being not able to offset the competitive advantage that Google ensures for itself through pre-installation and thus, acting as entry barrier for the competitors; using tying as a strategy to outbid rivals; impossibility in uninstalling Google search app on GMS devices; negative externalities of RSAs on competition; Google's portfolio-based revenue share payments deterring innovation and choice; consumer harm, impact on quality and innovation in general, *etc.* The DG concluded that Google has perpetuated its dominant position in the online search market resulting in denial of market access for competing search apps in contravention of Section 4(2)(c) of the Act. Moreover, as per the DG, the same also shows that Google has leveraged its dominant position in Play Store to protect its dominant position in online general search in contravention of Section 4(2)(e) of the Act.

376. A contravention of Section 4(2)(e) requires two markets to be identified, first relevant market in which the erring entity is alleged to be dominant and the second market in which the said entity is entering or protecting its position, directly or indirectly, by virtue of dominance in the first relevant market.

377. In the present matter, Google Play Store and Google search services constitute two different markets. Further, Google's Play Store as well as Google search services have already been determined as dominant in the markets for app stores for Android OS and market for general web search in India, respectively. Further, it is also not disputed that in order for an OEM to install Google's Play Store (being the 'must have' app) on its smart mobile device, it has to sign MADA which

requires pre-installation of entire GMS *i.e.,* multiple proprietary apps of Google which includes Search Widget, Google search icon, Google Chrome (through which Google provides its search and advertising services). Thus, all smart mobile devices which have Play Store pre-installed also have Google Search App as well as Google Search Widget pre-installed. Moreover, as per the data available on record, all Android based smart devices being sold in India have Play Store and thus, Google search services pre-installed. In this background, the Commission would now examine the evidence collected by the DG.

Pre-installation as a distribution channel of general search services

378. First of all, the data collected by the DG reveals that mobile devices have become an important gateway for search queries in India as contribution of the search queries (in Google search) *via* mobile increased to ▇▇▇▇ in 2019, as compared to ▇▇▇ in 2011. On the other hand, the corresponding contribution of search queries via desktop has declined drastically from ▇▇▇ in 2011 to mere ▇▇▇ in 2019. Thus, the experience of Google, which is the largest search services provider in India, shows that the significant volume of search queries is emanating from smart mobile devices as compared to desktops. Further, even within smart devices, search queries from Android devices rose to ▇▇▇ in 2019 as compared to ▇▇▇ in 2011. Whereas search queries from non-Android devices experienced significant reduction from ▇▇▇ in 2011 to ▇▇▇ in 2019. The data analysed by the DG also reveals that in 2011 the contribution of search queries made through Android mobile devices (in which Google search app comes pre-installed in the default home screen) in India was ▇▇▇▇▇ when compared to the queries made through all other platforms (*i.e.,* Desktop/PC, non-Android mobiles). Subsequently, as market share of Android mobile OS increased over the years, the share of queries made through Android devices *vis-à-vis* total search queries also increased significantly and went up to ▇▇▇ by 2017. In 2018, this share of queries through Android mobile devices was ▇▇▇ as compared to ▇▇▇ for Search queries via other platforms from users in India.

379. Thus, Android based smart mobile devices have become a critical source of traffic data for Google. Here, it is not out of place to mention that volume of search queries is very critical for any search engine as it helps in improving the search results as well as in attracting retaining the advertisers on the other side of the platform (already discussed *supra*). This humungous shift in the source of search queries from desktops to mobiles and thereafter, to Android mobiles shifted the scale in favour of Google. By securing pre-installation of its search services on all Android devices under MADA coupled with RSAs, Google has gained a significant competitive edge over its competitors.

380. Google by its conduct (by way of imposing mandatory pre-installation) as well as its submissions also acknowledges the importance of pre-installation. The relevant reply of Google is as follows:

> '...***Preloading is effectively a promotional opportunity that compensates Google for its investment in the Android platform***, and, in so doing, enables Google to offer the Android platform for free……Put another way, **Google offers a non-monetary trade, under which Google provides OEMs with an advanced OS and suite of apps for free, and OEMs promote Google's revenue generating apps through pre-installation**. **This "trade" or "barter" model eliminates an upfront licensing fee for OEMs**……**If OEMs in India could cherry-pick the GMS apps they carry, Google would need to charge a license fee for Android** and/ or GMS apps in India as it does in Europe…'

(Emphasis supplied)

381. In addition to pre-installing GMS apps, MADAs also obligate OEMs to display Google's apps prominently on devices (as already discussed *supra*). The prominent placement of Google apps contributes towards Google's competitive advantage over competing apps. Google by mandating pre-installation and sharing revenue with OEMs under the RSAs signify that pre-installation (whose impact is exacerbated by premium placement, default settings and exclusivity under different clauses of MADA and RSAs) derives higher usage.

382. In this regard, it is important to note a few responses from third parties which suggest that Google Search Widget on home screen of Android phones leads to higher usage. These are as follows:

382.1. Relevant extract from the reply of Microsoft is as follows:

> *'...A **user is more likely to use a search widget on its home screen or use a browser, than open an app specifically for search**, especially when this app may not even be on the home screen. **Accordingly the Google search on home screen and default search setting in the default browser, drive a significant number of searches on mobile devices**, and **Microsoft believes that a pre-installed dedicated search application on a device drives significant internet search usage……. Microsoft understands that no other dedicated search application will be visible on the home screen by default. Therefore, unless the user manually installs and then places a dedicated search application on the home screen, he / she will have to leave the home page and navigate the device to find and launch the dedicated search application and then conduct the search…'***

(Emphasis supplied)

This assertion of Microsoft is also supported by data. The market share of Google search is over 95% but on Windows phone, where it is not pre-installed, it is less than 25%.

382.2. Yahoo has submitted as follows:

> *'...As far as impact on users due to pre-installation, **pre-installation, premium placement and default settings are extremely important when establishing scale.** For example, to our understanding, on Android mobile devices, Google Search has historically been pre-installed on all of those devices. For Android devices in particular, Google could have control over the out-of-the-box user experience. For instance, **when a consumer opens the box and sets up their new device, they are automatically in the Google ecosystem as the default experience. Every other search provider has to take additional steps to get the end user to download, install and use their services and apps**…'*

(Emphasis supplied)

382.3. The importance of Google Search widget or Google Search App in perpetuating dominance of Google in the market for general web search in India is also noticeable from the submission of Mozilla Corporation, wherein it stated as follows:

> '...The **Google Search widget or application (Google Search App) is one of the most important ways users of Google's Android Operating System (OS) visit web pages.** Rather than open a browser, many users will begin a session with a search in the Google Search App, and then will click a link in the Google Search App. **When users click a link in the Google Search App, the page will open within the Google Search App, using Google's custom in-app browser…..The page will open within Google's in-app browser even if the user has selected Firefox as their default browser**…'

> '...the vast majority of searches are performed using the default search provider, which in India is Google. Users have the ability to select a search provider other than the default, but that represents a small minority of total searches...'

> **(Emphasis supplied)**

382.4. One97 Communications Limited (Paytm), has submitted as follows:

> '...It is widely agreed that the **pre-installation and prime placement of apps ensures significantly higher reach and use of a particular app (in some cases this reach is almost 20 times more than an app that is required to be downloaded separately)**…'

> '...**Through the default settings imposed by virtue of its stranglehold over the Android OS and de-facto mandatory pre-installation of the GMS suite, it can ensure prime placement for its apps, and its competitors simply do not have the financial muscle or the clout to effectively compete with Google** and enter into similar arrangements with OEMs. Instead, if it were to offer users a list of apps from which users could decide what to pre-install, as has been ordered by law in Russia, this would result in a fairer outcome for the ecosystem and all competitors…'

> **(Emphasis supplied)**

382.5. Huawei has also recognized the importance of pre-installation on the home screen in following words:

*'…usually, **users rarely change the default settings. As a result, pre-installation on the home screen is critical to market success within the market of app store product, so other app store products are placed at a disadvantage***…'*

(Emphasis supplied)

383. Google repeatedly claims that higher usage for its services is due to better products rather than the pre-installation. In this regard, *firstly*, the Commission notes that Google by its conduct (by way of imposing mandatory pre-installation) as well as in its submissions acknowledges the importance of pre-installation as a distribution channel. Google has submitted that "…*Preloading is effectively a promotional opportunity that compensates Google for its investment in the Android platform, and, in so doing, enables Google to offer the Android platform for free*…". Thus, Google by its conduct effectively negated its assertions. *Secondly*, the importance of pre-installation as a distribution channel can also be understood by comparing the usage of Google search on devices where it is pre-installed with the devices where it is not pre-installed *i.e.,* Windows based smart phones and Apple devices based on iOS. This data has already been discussed in this decision, while assessing dominance of Google in the general web search market (Graph 6 and Table 8). From the same data, it is noted that ███████

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██████ The usage of Google search in Microsoft's Windows Phones in India, is far less at 18.14% in 2017, 8.11% in 2018 and 4.94 % in 2019 when compared with its overall market share of over 95% as per StatCounter data (as discussed *supra*). Thus, Google's share of general search queries is lower on Microsoft's Windows mobile phone where the Google search app is not pre-installed (or set as a default search engine for native browser) in comparison to Android where the Google search app is pre-installed in the default home screen.

384. Similar inferences can be drawn from the data provided by Apple where users do not download competing apps of Google in the presence of Apple's pre-installed app. Specifically, in relation to the search services, it is noted that on all the Apple mobile phones shipped in India from 2011 to 2020 where Apple Safari browser is pre-loaded (for which Google Search is the default Search engine), the Google Search App (which is available on Apple's App Store) is downloaded by very few iPhone users in India. The percentage of downloads of Google Search app ranged from ▬▬▬▬▬ only of all Apple mobile phone users in India between 2011 to 2020. Thus, where the users are able to do search using the pre-installed Safari browser app in their mobile phones, they did not consider downloading Google Search app on their phones and using Google Search app directly for search services. The importance of pre-installation for mobile internet browsers can also be assessed from the significant differences in browsers usage on Android smartphones, compared to Apple smartphones. The iPhone users in India overwhelmingly use Safari bowser which is the default option on Apple devices whereas the competing Google's browser *i.e.,* Chrome has about ▬▬ downloads by iPhone users in India in any of the years from 2012 to 2020.

385. Thus, based on the abovementioned data, responses of various parties, the Commission is of the opinion that pre-installation is an important distribution channel for app developers on smart mobile devices.

386. The investigation also revealed that only Google, but not OEMs or users, can uninstall the Google Search app on GMS devices. They can only disable the search app.

Ability of the rivals to neutralize the competitive edge secured by Google

387. Further, the DG has also examined as to whether the competing general search service providers can neutralize the competitive edge that Google secures for itself through pre-installation under MADA. It is noted in this regard, that theoretically

there are other distribution channels for the competing general search service providers to reach the users *viz.* direct download from the app store, pre-installation agreements with OEMs or agreement with mobile web browsers for being the default search engine.

388. In relation to the direct download from the app stores, the data available on record indicates that the user does not generally download a competing general search service app given the presence of a pre-installed app for the same purpose. The data in relation to Windows Phones and Apple Phones has already been discussed above which substantiate this finding. Further, while examining the dominance of Google in the search market (Table 7), the Commission compared number of Google Search pre-installed in GMS devices and download of other competing search apps such as Bing, Yahoo, *etc.* from the Play Store. The said data revealed that these competing search apps together constitute less than ▉ of the pre-installation of Google search apps in Android devices in India. With the pre-installation of the Google Search app in Android devices, the mobile users rarely download the competing search app in Android. Accordingly, the Commission is of the view that direct download from the app stores is not a viable and sufficient option for the competing general search service providers to neutralize the competitive edge of Google.

389. As already noted earlier, web browsers provide direct search option *i.e.,* where a user can access a website by typing its Uniform Resource Locator (URL). However, most of the users might not remember more than a handful of URLs of the websites and therefore, have to rely on search engine to explore the vast alternative online sources of information. Due to the limitation of direct search through web browsers, the browsers enter into a partnership with web search engines. Therefore, mobile web browsers can also act as a distribution channel for search engines. In this regard, the Commission notes that Google Chrome and UC browser are the two most prominent mobile web browsers in India (Table 9). The Commission notes that in 2020, Google Chrome had a market share of 71.90%

whereas that of UC Browser was 17.65%. Google Search is not only the default search engine behind Google Chrome, but for UC Browser also. The same is true for other browsers, including Mozilla Firefox and Apple's Safari browser. Further, the RSAs executed between Google and the OEM also require the OEM to make Google search as default search engine for other pre-installed mobile browser in addition to Google Chrome (discussed in detail subsequently in this decision). Thus, there are relatively few options left available for competing search engines to have access to user search queries by entering into an agreement with the browsers.

390.   Coming to the option of pre-installation agreement with OEMs as a distribution channel, the Commission notes that though Google claims that developers can and do secure pre-installation opportunities with OEMs on MADA devices, however, Google has not brought on record any substantial pre-installation agreement between competing search service provider and the OEM which could constrain Google's dominance in the relevant market.

391.   Thus, based on the above-mentioned analysis evidenced by the absence of any significant inroads made by Google's competitors in the relevant market, the Commission is of the view that competing general search services are not able to counter the competitive edge secured by Google for itself through pre-installation and thus, the same acts as an entry barrier for the competitors.

392.   The Commission further notes that the market for general search services is characterized by presence of multiple entry barriers, which have already been discussed above in this decision. In addition, pre-installation of Google search services (i.e., Google Search App, Google Search Widget as well as Google Chrome with Google search as default search engine) which results in *status quo* bias, virtually closes down all the viable distribution channels for competitors. In this regard, following submission of Microsoft is important to note:

'...Preinstallation as the default option on mobile devices is, in Microsoft's view, the single most important factor for a challenger like Bing to gain in scale. Without those distribution opportunities, relatively few users will take the time to download the Bing app or change the search defaults on the device. For those users who do try Bing, because there is so little usage overall, the quality of Bing's results will suffer. This leads to the situation where even from the users who find and try Bing, a high percentage will switch back to Google. This cycle stemming from a lack of scale will continue until a large number of users can be attracted to the platform in a relatively short period of time, most likely by becoming the default search provider on a major mobile platform. In the absence of this kind of significant change in usage, Bing or other competing search providers are unlikely to be able to meaningfully compete with Google.

(Emphasis supplied)

393. Based on the foregoing, the Commission is of the view that the competing general search service providers are not in a position to nullify the competitive edge that Google secured for itself through pre-installation as well as premium placement under MADA.

Negative externalities of Revenue Share Agreements (RSAs) on competition

394. Amongst other Agreements, entered into by Google with OEMs of Android smart mobiles, RSA is an important agreement. Google entered into RSAs with prominent OEMs in India *viz.* Huawei, Motorola, OPPO, Samsung, Vivo, Xiaomi, *etc.* The RSAs *inter-alia* provides for *exclusive* pre-installation of Google Search or Google Assistant in ▮▮▮▮▮▮ and ▮▮▮▮▮▮ devices of OEMs. Further, RSAs stipulates setting Google Search as default search for all web access points in qualified devices of OEMs (including any other pre-installed browser in addition to Chrome). The agreement forbids the OEMs from preloading or otherwise installation of any third-party application, bookmark, product, service, icon, launcher, third party hot-word in the qualified device that is an alternative service to Google Search and Google Assistant. Google shared with OEMs search advertising revenues provided that the OEMs did not pre-install any competing general search service on any device within the defined portfolio of smart mobile

devices ('revenue share agreements'). If an OEM pre-installed such a service on any device, it would forego the revenue share payments not only for that particular device but also for all the other devices in its portfolio on which another general search service may not have been pre-installed.

395. Google has made the following submissions with regard to RSAs:

'.. *through its RSAs, Google offers its OEM and carrier partners the opportunity to monetize promotional opportunities on their devices.*

Under the RSA, Google offers OEMs and carriers a portion of the search revenue earned on their devices if they make the Google Search app the sole preinstalled search app on a particular Android device (or, in agreements prior to 2014, on all of their Android devices). RSAs thereby compensate OEMs and carriers for promoting Google Search and give Google a promotional opportunity…

Google originally introduced RSAs to convince OEMs and carriers to produce devices for the nascent Android ecosystem. The RSAs effectively compensated RSA partners for opening up their devices to Android and giving up revenue from their "walled garden" app stores. Current RSAs are to some extent the legacy of those early agreements…'

396. Before examining the impact of RSAs on competition, it is useful to refer to some relevant extracts of RSAs. As an example, the relevant extract of RSA between Google and ███████████████████████████████████

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(Emphasis supplied)

397. According to Google, it signed its first global RSA ███████████████████ ███████ The RSAs entered into by Google from 2017 onwards with the several OEMs such as ████████████████████████████████████ ██ ███████████████████████████████████ It is also noted that the RSAs signed by Google with the above-mentioned OEMs contain list of ██████████ ████████████████████ wherever applicable, in the terms and conditions of such RSAs.

398. The Investigation has examined these RSAs and noted that primarily there exist broad similarity in the terms and conditions of the RSAs signed by Google with OEMs. ████████████████████████████████████ ██ ██ ██

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401. The Commission notes that when MADA and RSAs are read together, it implies that Google search services (through various modes) are pre-installed on all Android devices and the same becomes exclusive pursuant to RSAs on the agreed portfolio of the Android smart mobile devices. The OEMs are paid the share in the advertisement revenue if all the devices in the agreed portfolio meet the requirements of RSAs. If the OEM pre-installs a competing general search service on any device within an agreed portfolio, it would lose the revenue share

payments not only for that particular device but also for all the other devices in that portfolio.

402. Google in its submissions has made a distinction between RSAs prevailing before 2014 and thereafter. Google has submitted that, "…*Google's RSAs initially applied to RSA partners' portfolios of devices. The (Investigation) Report takes issue with these portfolio-based RSAs, rather than with Google's device-based RSAs, which account for the majority of Google's RSAs in India within the relevant period. Google started phasing out its portfolio-based RSAs in 2012 and switched instead to device-based RSAs, under which RSA partners were free to decide which (if any) of their devices would be covered by the RSA and which would not. Since 2014, Google has only entered into device-based RSAs in respect of Indian devices...*". Google claims that the Investigation Report does not challenge device based RSAs. It has been averred that "…*under the device based RSAs an RSA partner could earn a revenue share on qualifying devices regardless of whether it also distributed devices that did not qualify for a revenue share. For example, an OEM could make Google Search the sole preinstalled general search service on one Android model and receive a revenue share payment, while preinstalling Bing on another Android model…*".

403. The Commission has perused the submissions of Google in this regard as well as relevant portions of the Investigation Report. The Commission is of the view that Google's arguments are completely baseless and devoid of any merit. Based on the assertions of Google, the Commission understands that the agreements prior to 2014 covered all the Android devices of the respective OEM, whereas the coverage of RSAs for the period pertaining to post 2014, were in respect of identified portfolio of devices. The DG in its Investigation Report has specifically examined the RSAs pertaining to period 2017 onwards also and accordingly, made its observations. At Table 91 of the Investigation Report, the DG discussed the duration of various RSAs of Google with OEMs which started from 2017. These RSAs were examined by the DG and ▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇▇

████████████████ of the OEMs covered by the RSAs were elaborated. At para 9.336, the DG also examined the specific clauses of RSA between Google and ███████████████████████████████ There are multiple other such examples in the Investigation Report, where the DG examined and gave its observations in respect of RSAs after 2014. Further, Google has not pointed out any instance from the Investigation Report where the DG qualified its observations only in respect of RSAs prior to 2014. In fact, the DG at para 9.339 specifically mentioned that "*Google shared revenues with OEMs on condition that they pre-installed no competing general search service on any device within an <u>agreed portfolio</u>. As a result, if an OEM had pre-installed a competing general search service on any device within an agreed portfolio, it would have had to forego the revenue share payments not only for that particular device but also for all the <u>other devices in that portfolio</u>*". A bare perusal of the so called 'device based' RSAs is sufficient to infer that they cover a *portfolio* of devices rather than a single device.. In this regard, the Commission also notes that in response to DG's specific query seeking revenue sharing agreement from 01.04.2011 to 31.03.2019, Google, *vide* its submission dated 16.09.2019, has provided RSAs pertaining to period after 2014 only. Thus, the Commission does not agree with the contention of Google, in this regard.

404. Be that as it may, the Commission is of the view that even the RSAs entered by Google post 2014, which have been thoroughly examined by the DG, are capable of manifesting exclusionary effects when seen along with MADA and AFA/ACC, for the following reasons:

405. *Firstly*, as already stated, MADA requires non-exclusive preinstallation of Google Search, Search Widget, Google Chrome (with Google Search as default) in all Android devices. Further, pursuant to RSAs (even device based), Google secures <u>exclusivity</u> for its search services on agreed and defined portfolio of the OEMs devices. However, the competing search service providers, due to preinstallation of Google search services on all Android devices pursuant to MADA, cannot

secure exclusivity even on devices not covered by RSAs. Thus, the rivals of Google can most achieve is pre-installation along with Google. Google securing exclusivity (on agreed portfolio of devices covered under RSAs) and rivals forbidden to achieve the same, in itself accord significant competitive edge to Google over its competitors.

406. *Secondly,* as already stated, smart mobiles constitute a significant source of search queries volume for any general search service provider[32]. Android devices, which generated 67% search queries for Google in 2018, has Google Search, Search Widget, Google Chrome (with Google Search as default) preinstalled on the default home screen. These three Search Access Points generates significant volume of search queries as evidenced by Google's own requirements under MADA an RSA. Now, Google claims that MADA allows pre-installation of competing search services. However, given the mandatory presence of Google search services on the home screen, the OEMs may not like to pre-install another search widget/search app on the home screen itself, to avoid any bad user experience, limited system memory/space, *etc.* Google has also not presented any evidence or example to the contrary. Accordingly, the competing search service provider through any contractual arrangement with OEMs can only secure a relatively inferior positioning on the second or third screen of the device, only. Thus, the competing search services cannot achieve a more prominent display on the devices and would always remain inferior to Google's placement.

407. *Thirdly*, given the prominent presence of Google search service on the default home screen of the device, the user is more likely to use Google on the home screen as compared to rival services on second or third screen. This behavioral

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[32] Further, as already stated earlier, mobile searches tend to be more valuable because of its localized nature and therefore, allows collection of valuable user data including location data. This data set and the ability to understand user intent while searching on mobile devices is important to creating a truly competitive search offering. It allows general search services to improve their services to offer better search advertisement services which fund the platform. Due to positive feedback effects on both the sides, any entrant also needs to obtain sufficient scale with both sides of the market, i.e., users (queries) and advertisers.

bias on part of users is evidence from the fact that Google itself mandates preinstallation of its applications on the home screen. Accordingly, the rival search services, despite securing pre-installation through contractual arrangements with OEMs, would lose significant traffic to Google available on the home screen. This dampens the incentives of these rivals to enter into contractual arrangements with OEMs as they would only have a secondary treatment on the devices.

408. *Fourthly,* another important source for search queries is the web browser. Google Chrome with Google Search set as default is already present on the home screen. As per Google's own data, between 2017 and 2021, approximately 29% of all search queries on Android devices in India took place through a browser. In this regard, it is pertinent to note that Google Chrome is the most widely used non-OS specific mobile web browser in India with the market share of more than 60% in both 2019 and 2020. Accordingly, Google would derive significant usage for its search services through Google Chrome. The closest competitor of Chrome is UC browser with the market share of 23% in 2019 and 18% in 2020. As per the information available on record, it is noted that Google Search is set as default for UC browser, also. Accordingly, more than 85% market for non-OS specific mobile web browser uses Google Search as default search engine. Further, the most used bowsers on iOS platform are Apple's Safari and Google's Chrome. Amongst these, Google search is default not only in Chrome but also in Safari browser which is the only preinstalled browser in Apple devices. Google also submits that in 2021, ▮▮▮ of Google Search queries carried out on iOS devices in India were through browsers, in particular Chrome and Safari. The Commission is of the view that the same, significantly forecloses an important distribution channel for competing search service providers.

409. *Fifthly,* one more source of search queries is desktop/ PCs which constituted around 13% of search queries for Google in the year 2019. The Commission notes that the search queries from desktop/PCs generally emanates from browsers,

wherein Chrome with Google Search as default, holds an unassailable position with a market share of 82.07% in the year 2020 (See Table 10). In addition, Firefox and Opera, except Microsoft Edge, also uses Google search as the default.

410. Thus, even if the competing general search service providers enter into pre-installation arrangement with OEMs through contractual arrangements, a significant volume of search queries will be diverted to Google, due to its premium placement on the device, revenue share arrangements with browsers, *etc*. Based on the above analysis, it is noted that a significant portion of search entry points have been occupied by Google search leaving very little room for the competing search services to secure a place in the market. In this factual background, the competing general search service providers would not be in a position to secure any meaningful and commercially viable revenue share arrangements with OEMs for secondary pre-installation opportunities. This is also consistent with the market outcome where none of the competing general search service providers is being pre-installed on the devices. In view of the foregoing, it is noted that the alleged conduct on the part of Google has resulted into foreclosure of significant channels of distribution for its rivals. Google has not presented any convincing evidence to establish the contrary.

411. The Commission is of the view that these revenue sharing arrangements along with other agreements *viz.* MADA and AFA/ ACC, reduced the incentives of the OEMs to pre-install competing general search services. In the absence of these revenue share payments, OEMs would have had a commercial interest in pre-installing competing general search services. However, these exclusivity arrangements which forbids OEMs to pre-install competing search services harms competition in the search engine market. Thus, Google has been able to protect and strengthen its market position in the relevant market.

412. Further, if a third-party search service provider wants to pre-install and set its search as default in Android, it will have to compensate the OEMs for the potential

loss of revenue sharing. However, the total payment to OEMs by Google far exceeds the annual revenue of its key competitors Microsoft & Yahoo from search business in India. Based on the data presented by the DG, it is noted that a competing general search service could not have matched Google's revenue share payments to OEMs. In this regard, it is further noted that since the scope of these arrangements is generally global in nature, therefore, the competing general search service would have to offer a revenue share to OEMs sufficiently high to negate the payments made by Google at global level. This significantly impacted their ability to pay the OEMs.

413. Google's strategy makes it harder for competing general search services from gaining a sufficient volume of queries to expand and become or remain viable competitors. It further prevents competing general search services from achieving revenues associated with these search queries. Thus, they may not be able to achieve the scale and access to users that would allow them to invest in research and development with respect to those innovative features.

414. In a competitive ecosystem, the OEMs and the competing search service providers would have been in a position to experiment and offer more innovative products. However, various restrictions discussed above, dis-incentivized OEMs as well as search service providers to develop better search services with innovative algorithms, better user interface, privacy friendly, focused search services for users, *etc*. At the end, the end user suffers due to reduced choice, in terms of quality and range of services.

415. Using its dominant position in the app store for Android OS market as well as its control over Android ecosystem, Google protected its general search services market by linking the two. As a result, Google's apps (specifically Google Search App, Google Search Widget and Google Chrome with Google search as default search engine) are preinstalled on 100% of the Android devices sold in India and thus, Google has secured an unbeatable/ unparallel scale and thus, a competitive

edge over its competitors by seeking pre-installation under MADA. In addition to MADA, the exclusivity granted under RSAs also ensure that competitors are denied market access directly through non-availability of a distribution channel and indirectly through denial to a very critical input *i.e.*, search queries.

416. Google has repeatedly attempted to focus on one of the agreements at a time while defending various obligations envisaged in MADA, RSAs and AFA/ ACC. However, the Commission is of the view this disjointed reading of these agreements does not reflect the actual outcome in the markets. Rather, a cumulative reading of various obligations provided under MADA, RSAs together with AFA/ ACC, actually represent or govern the market outcomes. *E.g.,* Google claims that MADA imposes no exclusivity and permits the pre-installation of rival search apps and widgets. However, the revenue share arrangements under RSAs are dependent on whether the OEM is a MADA partner[33]. Accordingly, when the provisions of MADA are read with RSAs, it turns out that general web search services of Google become not only the default search service in Android smart devices but an exclusive search service as it leaves very little incentive for the rivals search services as well as OEMs, for reasons discussed *supra*.

417. Similarly, Google repeatedly claims that OEMs that sign a MADA can pre-install GMS on some, all, or none of their devices. However, when the provisions of MADA are read with AFA/ ACC, it becomes clear that as soon as GMS is installed even on a single smart device, then the OEM cannot install Android Forks on any of its smart devices. Further, considering that Google Play Store and Google Play Services have become 'must have' for the OEMs to have a marketable and commercially viable smart device, pre-installing GMS is a compulsion for OEMs and not a choice. This is further exacerbated by the fact that there is no other licensable smart device OS in the market which can be explored by the OEMs.

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[33] *E.g.,* the RSA between Google and ████████████████████████
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418. Google also claims that by allowing OEMs to monetize promotional opportunities on their devices, RSAs resulted in lower device prices. However, Google has not placed any evidence on record to establish that absent the RSAs, the price of ▇▇▇▇▇▇▇▇ Devices would have been higher. Moreover, even if this argument is accepted, it would not justify the anti-competitive impact of the RSAs, as discussed *supra*.

419. Based on the interplay between MADA, RSAs, and AFA/ ACC, the Commission is of the view that Google used its position as the only supplier of Play Store to protect its market for general search services and it also made it difficult for the competing general search services to access the said market.

C. Tying of Play Store with Google Chrome

420. As already stated, the covenants of MADA require the OEMs, who wish to pre-install Play Store on their smart devices, to pre-install Google Chrome (the web browser of Google) also. The DG examined the issue on the basis of the factors such as pre-installation being an important channel for the distribution of mobile web browsers on smart mobile devices; Google setting the de-facto web standards due to its dominant position; impossibility in uninstalling Google Chrome on GMS devices; negative impact on competition in the relevant market; abuse of dominant position by degrading quality of search; negative impact on innovation, *etc*. Based on its examination, the DG has concluded that Google has abused its dominant position by tying up of Google Chrome App with Play Store and thereby violated provisions of Section 4(2)(e) of the Act.

421. As already stated, a contravention of Section 4(2)(e) requires two markets to be identified, first relevant market, in which the erring entity is alleged to be dominant and the second market in which the said entity is entering or protecting its position, directly or indirectly, by virtue of dominance in the first relevant market.

422. In the present matter, the Commission notes that Google Play Store and Google Chrome forms part of two different markets for various reasons, discussed *supra* in this decision. Further, Google's Play Store as well as Google Chrome have already been determined as dominant in the markets in their respective relevant markets (though Google's dominance in the market for non-OS specific web browsers is not statutorily required to be established for the purpose of Section 4(2)(e) of the Act). Further, as per MADA, in order for an OEM to install Google's Play Store (being the 'must have' app) on its smart mobile device, it has to pre-install Google Chrome browser also. The OEM cannot access Google Chrome separately from Google Play Store. Moreover, as per the data available on record, all Android based smart devices being sold in India have Play Store and thus, Google Chrome pre-installed. The Commission also notes the suppliers in these markets are also different as there are multiple web browser developers who do not offer app stores for Android and vice versa.

423. In this background, the Commission would now examine the evidence collected by the DG.

Importance of pre-installation as a distribution channel

424. The importance of pre-installation has already been discussed above and the same also holds true in respect of distribution of web browsers in mobile devices. As already noted above, Google's Chrome bowser comes pre-installed on all Android mobile devices which command over ▮▮▮ of the mobile market in India. Thus, by imposing pre-installation of the entire GMS suit, Google secures for its' web browser, the widest possible distribution which remains unmatched. The other third-party browsers or even OEM's own browsers have not been able to replicate the same due to various reasons viz. *firstly*, the reach of OEM's own web browser is limited to the devices of the OEM only a compare to Chrome which is present on all Android devise and that too with a premium placement, *secondly*, to have a parallel reach as that of Chrome, third party web browsers have to enter into

separate pre-installation agreement with all the OEMs, which would be extremely costly and thus, not commercially feasible.

425. In this regard, it is pertinent to note the submissions of Microsoft, as follows:

> '*...**Microsoft believes that being pre-installed on a smart mobile device with premium placement drives a significant amount of usage share for the browser**. For example, iOS devices account for 2.2 percent of mobile operating system usage in India, and usage of the browser pre- installed on these devices (i.e., Safari), is roughly the same at 2 percent. Android accounts for 94.2 percent of usage in India, and Google Chrome (which is the pre-installed browser on Android devices), leads in browser usage at roughly 67 percent. The UC browser is the only one with significant usage share other than Chrome. Internet Explorer was the default browser on Windows Phone OS, but **otherwise Microsoft browsers are not set as the default browser on any smart mobile operating system**. Android ships with Google Chrome pre-installed ...*'

> **(Emphasis supplied)**

426. Further, in the context of default settings, ███████████████████
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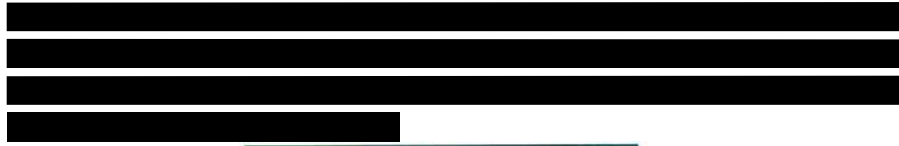
(Emphasis supplied)

427. Further, Mozilla in its reply, has also made the below mentioned additional submission in respect of the hurdles it faced in negotiations with ▮▮ during 2016 for distribution of its Firefox browser as a third-party web browser as default. The relevant extracts from Mozilla's reply is reproduced as under:

> '*...The most that* ▮▮ *was able to offer Mozilla was to preinstall Firefox as a secondary web browser option on the home screen and include the Firefox logo and a promotional leaflet in the device packaging.* ▮▮ *observation was that 60-70% of users tried the secondary web browser option but more than 70% of users returned to Chrome "since chrome sits on hot seat.'* ***This high retention on Chrome is also likely because: (1) most users do not take the steps to change the web browser default in preferences; and (2) even if they do, the Android OS does not open the user-selected default web browser in key places such as the Google search widget, which is shown prominently on the home /screen.'***

(Emphasis supplied)

428. Furthermore, Mozilla on being asked about instances when its Browser was pre-installed on certain Handsets with Android OS, has made the below mentioned additional submission:

> *'Mozilla has been unable to enter into any commercial agreements for pre-installation of Firefox on mobile devices having Android OS in India.'*
>
> **(Emphasis supplied)**

429. It is also pertinent to refer to the response from Microsoft in terms of difficulties faced by it in its negotiation with ████ (OEM) in respect of pre-installation status for its app on ████ devices. This is highlighted from the Microsoft's reply, extract from which is provided below:

> *'In 2018 Microsoft entered into an agreement with ████ through which ████ would make Bing the default search provider in ████ browser on ████ mobile devices in India. Bing is not the default on the launcher or the keyboard on ████ phones. Microsoft understands this limitation was a result of Google requirements placed on ████. The setting would be applied to then existing phones, but does not cover distribution of new phones which are set to Google.* **The distribution also does not cover the first page home screen launcher search widget or the search setting in Google Chrome, which are both set to Google search.** *While the ████ agreement represents an important distribution opportunity for Microsoft and provides a limited number of mobile based queries which are very valuable to Microsoft because we have such a small presence with our search offering on mobile,* **Google still receives that vast majority of queries from the devices by virtue of being the search option on the home screen and in Chrome**.'*

> *'...even in the case of the ████ distribution arrangement.. which involved the* **setting of Bing as the default only in a secondary browser**, *Microsoft provided ████ with 90 percent of the search revenue earned by Bing on these devices.*

> **In a more competitive market where Bing's ability to monetize may be closer to what Google is able to achieve, Microsoft believes that the percentage of revenue that it would have to provide would likely be lower,** *and it would be able to earn some profit from its provision of search services and would not be required to effectively forego all of the revenue to get distribution on mobile devices.*
>
> **(Emphasis supplied)**

430. Further, it will be instructive to refer to the reply of Opera Software India Private Limited (Opera) about the importance of pre-installation/ default status of a web browser:

> '...In general, when considering these issues, there are three main factors involved:
>
> - The first is **whether the browser is pre-installed on the device at all.** Generally pre-installation is not possible on iOS, but it is on Android provided an appropriate agreement can be reached with the mobile device the OEM.
>
> - The second is the **position of the browser in the user interface of the device**. Generally, in the case of pre-installation, the OEM will require a higher payment for more premium placements which are more likely to attract the notice of the user.
>
> - The third is **which browser is configured as default on the system**…'
>
> **(Emphasis supplied)**

431. Moreover, it is pertinent to re-emphasize the submission of Mozilla in its reply when it stated the rational for high retention of Chrome as mobile web browser is likely because *'...most users do not take the steps to change the web browser default in preference and even if they do, the Android OS does not open the user selected default web browser in key places such as Google Search Widget, which is shown prominently on home screen…'*. In this context, Mozilla has further clarified that:

> '…The **Google Search widget or application (Google Search App) is one of the most important ways users of Google's Android Operating System (OS) visit web pages. Rather than open a browser, many users will begin a session with a search in the Google Search App, and then will click a link in the Google Search App. When users click a link in the Google Search App, the page will open within the Google Search App, using Google's custom in-app browser**…..The page will open within Google's in-app browser **even if the user has selected Firefox as their default browser**…'
>
> **(Emphasis supplied)**

432. Based on the above analysis, the Commission is of the view that pre-installation is an important channel for distribution for web browsers and with Google

securing 100% pre-installation of Chrome on Android devices, the competitors are unable to set and cement their position in the browser market.

Ability of the rival web browsers to neutralize the competitive edge secured by Google in the browser market

433. The Commission is also of the view that competing web browsers are not in a position to neutralize the competitive advantage secured by Google for itself, using alternative distribution channels such as downloads or the possibility to pre-install their web browser through an agreement with OEMs. In relation to downloads of competing web browsers, a comparison of pre-installation of an app *vis-à-vis* specific download of the same or rival app, as discussed supra in this decision (Table 7 and Table 8), clearly evidences that the users with a pre-installed web browser, the users are not inclined to download a competing web browser. Based on the data collected by the DG, it is noted that competing web browsers do not seem to be posing any significant competitive constraints on Chrome browser in India which came pre-installed on Android mobile devices. Thus, Google Chrome was pre-installed on 100% of the GMS Android devices. Further, apart from UC Browser, which had somewhat significant downloads with maximum downloads of ▮ in 2018, the other competing web browsers lagged a long way behind. The maximum the competing web browsers could reach was Opera browser, which was downloaded on around ▮ and ▮ in 2012 and 2013 respectively on the Android mobile devices on which Chrome browser was pre-installed (▮ in 2018). Similarly, Samsung Internet Browser which was maximum downloaded on only ▮ of the Android mobile devices in 2017 and 2018 and Firefox browser was downloaded maximum on around ▮ in 2013 on the Android mobile devices on which Chrome browser was pre-installed (▮ in 2018). In this context, it is also apposite to refer to the behavioural bias on the part of the only other mobile ecosystem *i.e.,* iOS users. It is seen from Table 8 that Google Chrome was downloaded only on ▮ of iPhones in 2020, where the user found Apple's Safari browser pre-installed. Thus, generally, the user exhibit

behavioural bias or status quo bias by refraining to download a competing app in the presence of an app with similar functioning.

434. Coming to pre-installation agreements with OEMs, it is noted that *firstly*, Chrome is pre-installed on all the Android devices by virtue of MADA. To effectively achieve a scale and to compete with Google, a competing web browser has to secure pre-installation on majority of the devices by getting into an agreement with the OEMs. *Secondly*, most of the OEMs have their own web browsers which they would prefer to pre-install on the home screen along with Chrome. However, in such case also, the reach of the OEMs web browser is limited to devices of the concerned OEM only. *Thirdly*, given the limited space on the default home screen, OEMs would be reluctant to pre-install multiple applications with similar functionalities. Having decided to pre-install its own web browser, the OEM may not allow pre-installation on the homo screen but on second or third screens. In view of the foregoing, the Commission is of the view that pre-installation agreements with OEMs for the competing web browsers is not an equally effective distribution channel vis-à-vis pre-installation secured by Google by virtue of MADA. Though Google claims that developers can and do secure pre-installation opportunities with OEMs on MADA devices, however, Google has not brought on record any substantial pre-installation agreement between competing search service provider and the OEM which could constrain Google's dominance in the relevant market.

Google setting the de-facto web standards due to its dominant position in the browser market

435. The Investigation also revealed that Google Chrome has acquired de-facto status as a dominant browser to an extent that many web site developers develop their website, keeping in mind the compatibility with Google Chrome. This again relegates other browsers using different web engines to a secondary position *vis-*

à-vis google Chrome. The same is deciphered from the reply of Microsoft and same is rehashed as under:

> '...*Given that Microsoft Edge and Internet Explorer no longer account for a significant percentage of browsing time, **many website developers do not design and test their sites to support these browsers. Instead, they test and design primarily for Google Chrome** and to a lesser extent, for Apple's Safari...*'

(Emphasis supplied)

436. The same was also evidenced from the reply of the Mozilla and reproduced as under:

> '...*In 2013, Google announced its new "Blink" browser engine which was based on WebKit and shared many common features with it. **Rather than spend resources on cross-compatibility with alternative operating systems and browser engines, many developers focused exclusively on iOS/ WebKit and Android/Blink. This is speculated to have factored into decisions by Opera and Microsoft to eventually cease support for their independent browser engines in favor of Google's Blink browser engine, and for newer browser developers to also opt for Blink.** Today, there are only three major independent browser engines left:*
> > *-Gecko (used in Firefox)*
> > *-WebKit (used in Safari)*
> > *-Blink (used in Edge, Opera, Vivaldi, Brave, Puffin, Samsung Internet, Amazon Silk Internet). Browsers using Blink are often referred to as "Chromium based."*
>
> ***In today's world, the dominance of two browser engines is directly related to the control exerted by operating system providers.*** *Apple requires browsers distributed on mobile iOS devices to use WebKit. Microsoft's newest policy is that browsers distributed on its Windows 0S devices must use Blink. And **Google, as a major provider of search, video and other services, offers preferential experiences to Chromium-based browsers.***
>
> ***Independent bloggers have commented on the loss of multiple browser engines and potential harm to the health of the web***. *This is indeed Mozilla's experience. Its efforts to work with others to improve important web experiences in Firefox have been unsuccessful because of its relatively small market share. Yet, without premium placement on devices, it is very challenging to gain market share. **Beyond Firefox, Mozilla is also concerned about the outsized impact that a dominant***

browser engine could have to influence web standards, for example, on privacy and advertising.

(Emphasis supplied)

437. Mozilla also highlighted the other relevant issues and the relevant reply is reproduced below:

> *Self-Preferencing:*
> *21. Dominant platforms such as Google increasingly tie their enterprise and consumer services to their own browsers in ways that prevent consumers from accessing these services on other browsers or cause an inferior experience (resulting in consumers to switch browsers altogether or use their preferred browser far less). In the case of Google, it often launches services and features for Chrome first and is slower to release such services and features on other browsers. It also promotes marketing that Google products work better on Google's Chrome browser…'*
>
> *22. Self-preferencing also occurs when dominant platforms fail to test their services and features with other browsers. For example, in 2017 a YouTube gaming feature was reported to be significantly faster on Chrome than on Firefox or Edge. Analysis showed that this was likely an oversight by Google that would have been caught had they tested the feature on other browsers.'*

(Emphasis supplied)

438. The Investigation found corroboration of the reply of Mozilla from the information available in the public domain that Google often launches services and features for Chrome first and is slower to release such services and features on other browsers. It also promotes marketing that Google products work better on Google's Chrome browser. As demonstrated below, Google Inbox and Gmail Offline are examples of the same:
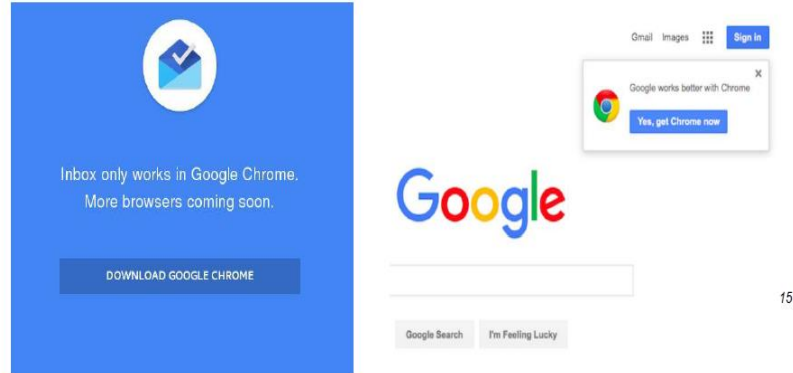
Source: Para 9.416 of the Investigation Report

The above figure pertains to the Gmail, wherein the users can search and read message on Gmail without an active internet connection. The said feature was only available on Chrome but not available on Firefox, Edge, Opera *etc*.

439. In this regard, the DG has also referred to *US Antitrust Subcommittee Report*, which made the following observations:

> '...*changes to Chrome's functionality create de facto standards. Market participants must adhere to these standards or risk their technology no longer being compatible with most websites*. *Market participants explain that Google will often build features quickly without using the standard setting process or giving smaller browsers time to implement new features.* Once web developers start building to these specifications, however, smaller browsers are under pressure to quickly implement these changes, often with little notice. *If smaller browsers cannot keep up, users are flooded with "[b]rowser not supported" messages on webpages that have already been built to Chrome's specifications*. Several market participants told the Subcommittee that they felt "bullied" by this process…'

> '...Though *standards bodies like the W3C give the impression of being a place where browser vendors collaborate to improve the web platform; in reality Google's monopoly position and aggressive rate of shipping non-standard features frequently reduce standards bodies to codifying web features and decisions Google has already made…*'

(Emphasis supplied)

440. Similarly, Microsoft has made the submission in the following words:

> '...***it is Microsoft's experience that web developers primarily target and test their websites against Google Chrome.*** *While it is critical for website developers that their sites work in Google Chrome, the same was not true for Microsoft Edge because of its lower share.* ***Before Microsoft transitioned Edge to be based on the Chromium code base, it consistently struggled with websites that were incompatible with Microsoft Edge or did not work as well in Microsoft Edge as they did with Chrome. Thus, ensuring website compatibility was a primary motivation in switching the technology that underpins Microsoft Edge to be based on Chromium*.'**

> **(Emphasis supplied)**

441. Based on the evidence presented by the DG, the Commission notes that Google has attained such a position in the ecosystem that it is able to set the *de-facto* web standards and the competitors are forced to modify their own browsers to meet the specification set by Google.

Impossible to uninstall Google Chrome on GMS devices

442. The Investigation has revealed that it is not possible for the OEM as well as the users to uninstall Google Chrome on GMS devices. Thus, a competing non-OS specific mobile web browser can only attain pre-installation as a secondary browser along with Google Chrome. This is also highlighted from the reply of Xiaomi, extract from which is provided below:

> '...*The Google Search and* ***Google Chrome apps are pre-installed on Xiaomi devices, and cannot be uninstalled from Xiaomi smartphone devices by the user.*** *These apps can also be updated through the Google Play Store itself ...*'

> **(Emphasis supplied)**

443. Given the evidence that generally users do not download a competing web browser in the presence of a pre-installed web browser, the only option available for a competing web browser is to exploit pre-installation opportunities with OEMs which has been found to be costly and thus commercially unviable.

444. The Investigation has also elaborated the practice followed by other web browsers in respect of the pre-installation agreement between OEMs. For instance, ███

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████████████████████████████████ However, the terms and conditions of MADA eloquently expresses that browser and search app of Google can only be disabled not uninstalled. The same is also disinterred from the reply of ███████████ and reproduced as under:

> '...Along with the above set of mandatory apps, guidelines on positioning these apps on devices is also been set by Google. **All the apps to be pre-loaded as System partition, so customer cannot uninstall them**…'

> **(Emphasis supplied)**

445. It is noted that there is a difference between disabling and uninstallation of an app. Google's apps can only be disabled but can't be deleted. Un-installation frees up the flash memory, whereas the same is not the case with disabling an app. Google has not been able to provide any convincing reply as to why the users or Android OS are only allowed the option of disabling some of the GMS apps instead of permanently deleting the said apps.

Negative impact on competition in the relevant market(s)

446. While assessing the capability of tying of Google Chrome with the Play Store to restrict competition on the relevant markets, the Investigation has *inter alia* analysed whether there could have been greater competition in those markets, absent the tying. This includes an analysis of the usage of Google Chrome on

smart mobile devices on which it is not pre-installed. This has been demonstrated from the earlier analysis, from the submission made by Apple, where it was found that in India, when Apple Safari browser is pre-loaded in all the iPhones shipped to India, Google's Chrome browser is not downloaded by the iPhone users from Apple App store. For instance, it was found that Google Chrome was downloaded by only ▮▮▮▮ of iPhone users in India in the year 2019 on their Apple phones, which was the maximum during the years 2012 to 2020. The download of Chrome on Apple phones in India was as low as ▮▮▮▮ and ▮▮▮▮ in 2015 and 2016 respectively.

447. In this regard, it is pertinent to refer to few submissions of the competing web browsers, as extracted below:

447.1. The relevant extracts from the reply of UCWeb Mobile Private Limited (UCWeb) is reproduced as under:

> *'...Original Equipment Manufacturers (OEMs) are an important means for its distribution. However, **as a result of its control over Android, Google may be in a position to further leverage this position vis-à-vis OEMs to benefit its Chrome browser.***
>
> *7. First, Google offers the Google Mobile Service (GMS) i.e., certain apps of Google, as a package to OEMs. This package includes Google search, Gmail, Maps, YouTube, etc., and its browser Google Chrome. **In order to clear the Android Compatibility Test Suite, OEMs are required to pre-install the GMS and, once installed, these apps cannot be uninstalled. This acts as a barrier for other web browsers who then need to extend the functions of their browsers, such as providing integrated news feed and other accessory functions to even be considered by users. This involves extra technological and capital investment, the exact amount of which is difficult to calculate.***
>
> *8. Second, while currently paying OEMs for pre-installation on their smart mobile devices is still one of the most effective methods of distribution for third party browsers, given the market position of Google's Android ecosystem and **the revenue incentives that Google offers to OEMs for pre-installation of Google Chrome, OEMs continue to pre-install Google Chrome. Consequently, the***

capital investment to incentivize OEMs to pre-install other third party browsers will be significant.

*9. For a third-party mobile browser, finding an efficient and direct way to approach to the end users is a key factor for distribution. **Normally, an OEM selling an Android system device could preload three to four web browsers i.e., Google Chrome, OEM's own browser (which is developed by the OEM itself for example, the Samsung Browser) and a third-party browser, such as, UC Browser or Opera Mini. However, as the size of a mobile phone screen is compact, as is the space on the screen to place icons for multiple apps that largely do the same thing, this limits the preloaded browser choice of the OEMs.***

*10. It is pertinent to note that **more than 50% of the end users do not express a preference for any particular web browser and a majority of the users prefer to continue to use the default browser (as a result of the status quo bias).***
*Therefore, being pre-installed on an Android device is important to every **third**-party browser developer. As Google Chrome is part of the GMS, and for the reasons discussed above, almost all of Android devices preload Chrome on the "home" screen.*

*11. Further, as consideration for pre-installation of Google Chrome, **Google provides OEMs with a percentage of its search revenue from their devices (which given its scale can be substantial). Accordingly, a majority of the OEMs cooperate with Google and preload Google Chrome as the default browser without any way of uninstalling it. This situation not only makes it difficult for UCWeb to be a viable and available alternative the end users** but has also resulted in increasing the cost of preloading the UC Browser on Android mobile devices…'*

(Emphasis supplied)

447.2.   Amazon in its reply emphasized various entry barriers in the market for Web browser. The significant excerpts from the reply are mentioned herein under:

*'…**with respect to distribution, a significant entry barrier for Amazon Silk was the terms required for OEMs using Google apps and services on their devices.** OEMs indicated to Amazon that their terms with Google, which they agreed to in order to have Gmail, the Google Chrome browser, **the Google Play Store and other Google apps on their devices, required them to favour Google apps in certain ways, including having Google Chrome***

configured as the default web browser for the device and positioned on the "home screen" of the device. This impacted Amazon Silk adoption because Amazon's research at the time showed that the default browser was used by 58% of users, leaving Amazon Silk to compete with other web browsers such as Opera, Firefox, and UC for the minority of users not using the default browser. Another possible barrier to distribution was the request from OEMs that Amazon pay significant amounts in order to be pre-installed onto the device, but even with payment, OEMs would make no guarantees as to app placement or willingness to forego the Chrome browser as the default browser (which would require them to remove the Google Play Store and other Google apps). Amazon discussed distribution deals with OEMs such as lntex, Reliance Jio and Micromax that would include Amazon Silk, although in each case not as the device's default browser, and even signed a contract with lntex to distribute Amazon Silk on lntex Android devices, but none of these discussions resulted in meaningful success for Amazon Silk…'

(Emphasis supplied)

447.3. Relevant extract from the reply of Mozilla is reproduced as under:

*'…The web browser represents the front line between the consumer and the web. **Common barriers to entry and expansion for web browser developers include**: (1) the high cost of technological development (2) **Pre-installed bundling of dominant digital platforms' products and services; (3) limitations on consumers to easily replace fixed default pre-installed settings with alternatives; and (4) commercial terms and policies imposed by gatekeeper digital platforms.** In addition, in order to expand, organizations must develop products across platforms which can be expensive and time consuming. For example, although the Google Android Operating System (Google Android OSI Android OS) is dominant in India, Mozilla must still develop for the iOS platform. This is because Mozilla cannot have a competitive web browser in the global mobile market without developing for both the iOS and Android OS…'*

*'…Firefox was initially very successful, achieving close to 30% global market share in 2010 as the second most popular browser after Internet Explorer (See: http://gs.statcounte r.com/browser-market-share/desktop/worldwide/#monthly-200901 -20 LO l2-bar). **After that, Mozilla's market share took a downturn, impacted by companies connecting their browsers to their operating systems: on desktop this was Microsoft connecting***

Windows to Internet Explorer (and later Edge) and on mobile this was Google connecting Chrome to Android mobile devices. This made default placement on devices a challenge. Without business opportunities for default placement of Firefox, the overwhelming majority of Firefox use was through dedicated fans who took several steps to find Firefox on the web or in an app store, install it on their device, change it to be default, and in many cases, re-change system settings that attempted to override their default choice.

Mozilla also struggled on mobile without any major distribution opportunities for Firefox on Android in global markets. This included India, where Mozilla was engaged in discussions with OEMs but was unable to get placement as the default browser or in the home dock because of restrictions they faced. Meanwhile, while Mozilla has an iOS product as well, the mobile iOS market has been limited as Apple mandates Safari to be the default browser.

(Emphasis supplied)

448. The Commission also notes that the tying strategy followed by Google has allowed it to not only enter but also cement its position in the relevant market for non-OS specific web browsers in India, as indicated by the market share data discussed earlier. Chrome is now the largest player in the market with a market share of around 72% in 2020.

449. The Commission is of the view that the abovementioned conduct of Google of tying Play Store with Google Chrome, significantly restricts competition in the relevant market(s) by foreclosing distribution channels for rivals and thereby, deterring their incentive to innovate and offer choice to users. The leveraging by Google facilitates protection and reinforcing its dominant position not only in the market for non-OS specific web browsers but also in the market for general search services (as Google search is the default search engine in Google Chrome, which cannot be changed by OEMs due to condition imposed by MADA) and, thus, its revenues *via* online advertisements.

D. Tying of Play Store with Google YouTube

450. As already stated, the covenants of MADA require the OEMs, who wish to pre-install Play Store on their smart devices, to pre-install Google's YouTube also. The DG examined the issue on the basis of the factors such as tying, foreclosure of competition; low downloads of competing apps *etc.* and concluded that Google has abused its dominant position by tying up of YouTube App with Play Store and thereby violated provisions of Section 4(2)(e) of the Act.

451. As already stated, a contravention of Section 4(2)(e) requires two markets to be identified, first relevant market, in which the erring entity is alleged to be dominant and the second market in which the said entity is entering or protecting its position, directly or indirectly, by virtue of dominance in the first relevant market.

452. In the present matter, the Commission notes that Google Play Store and Google's YouTube forms part of two different markets for various reasons for obvious reasons, discussed *supra*. Further, Google's Play Store as well as Google's YouTube have already been determined as dominant in their respective relevant markets (though Google's dominance in the market for on-line video hosting platforms (OVHPs) is not statutorily required to be established for the purpose of Section 4(2)(e) of the Act). Further, as per MADA, in order for an OEM to install Google's Play Store (being the 'must have' app) on its smart mobile device, it has to pre-install YouTube also. The OEM cannot access YouTube separately from Google Play Store. Moreover, as per the data available on record, all Android based smart devices being sold in India have Play Store and thus, YouTube pre-installed. The Commission also notes that the suppliers in these markets are also different as there are multiple OVHP developers who do not offer app stores for Android and vice versa.

453. In this background, the Commission would now examine the evidence collected by the DG.

454. The importance of pre-installation on smart mobile devices as well as the ability of the competing apps to neutralize the competitive edge secured by Google has already been discussed above. The Commission is of the view that same also holds true in respect of distribution of OVHPs and the same reasoning is not being repeated here for brevity.

455. YouTube is available for download in Microsoft Windows phone & Apple iOS, as an independent & standalone app but is pre-loaded in Android. Further, pre-installed YouTube on home screen gives Google undue competitive advantage. The third-party competing apps face difficulties in attracting users to download an additional app which may compete with Google. The same is also evident from the download data of competing apps as provided by Google (Table 11) which has revealed that the annual downloads of Dailymotion in 2012 in India was only ▉▉▉ which declined to below ▉ in subsequent years and in 2018 went down to as low as ▉▉▉ Similarly, Vimeo was downloaded by Android users in India in less than ▉▉ of devices from 2014 to 2018.

456. Further, tying of YouTube with Play Store has resulted in Android becoming the most important platform for viewership of YouTube in recent years in India. This is demonstrated by the fact that out of ▉▉▉ crore active users of YouTube in India in 2019, ▉▉▉ crore users constituting approx. ▉▉▉ of users are on Android mobile platform.

457. Pre-installation of YouTube has enhanced its reach and revenue which is unmatched to its competitors. This is demonstrated, as seen earlier as well, from Google's revenue vis-à-vis its competitors. The advertising revenue of YouTube in India has also registered significant growth over the years. The growth of

YouTube in India during the years 2013 to 2019 (data pertaining to years 2011 and 2012 not provided by Google) is reflected in the following table:

Table 13: Advertising Revenue of Google from YouTube

Year	Advertising Revenue of YouTube	% increase over previous year
		(Rs.in crore)
2013	███	▌
2014	███	███
2015	███	███
2016	███	███
2017	███	███
2018	███	███
2019*	███	▌

458. From being only ████████ crores in year 2013, it grew to ████████ crores in 2018. Further, year to year percentage growth in the advertising revenue of YouTube in India during 2014 to 2018 has been significant and is in the range of ████ in 2016 to ████ in 2014. In 2018 also it registered a significant growth of ████

459. In this regard, the annual revenue of competitors of YouTube, as noted by the DG is as follows: Combined revenue of TikTok and Vigo Video in India – Rs ████ in FY 2018-19, Revenue of Vimeo in India - Rs. ████████ and that of Dailymotion - Rs. ██████ A bare perusal and comparison of this data reveals that competitors of YouTube are far behind and have negligible revenue in comparison to that of YouTube.

460. Google's tie produces exclusionary effects by hindering rival app makers' efforts to compete with YouTube as the device manufacturers are bound to preload YouTube on their devices in order to obtain Google Play. Moreover, the tie makes

it impossible for rival app makers to pay device manufacturers to exclusively install their apps on Android devices in order to reach users *en-masse*.

461. Such tying up arrangements reduces the ability of OEMs to pre-install competing apps thereby harming competition in the market. By locking up OEMs as distribution channels for YouTube, Google has further consolidated its dominant market position. The competing service providers are effectively foreclosed by Google's agreements with OEMs and the competitors are foreclosed from the opportunity to compete on the merits for the distribution of their apps necessary to achieve efficient scale.

462. The Commission is of the view that the abovementioned conduct of Google of tying Play Store with YouTube, significantly restricts competition in the relevant market(s) by foreclosing distribution channels for rivals and thereby, deterring their incentive to innovate and offer choice to users. The leveraging by Google facilitates protection and reinforcing its dominant position not only in the market for OVHPs but also contributes significantly to Google's revenues through advertisements.

463. Google claims that the end users are free to download competing apps from Play Store with a lot of ease. However, as noted by the Investigation, this argument of Google is meritless as Google benefits from the pre-installation of its apps on home screen of Android. Going by this argument, the users can also download Google's GMS apps. Further, user customizations only partially discipline Google as only technological understanding users make major customizations.

464. The available data on record shows that total downloads of competing search apps to Google search together constitute less than ▇▇ of the pre-installation of Google search apps in Android devices in India (Table 7). This confirm that even though the Play Store allows for downloading of apps (including of general search apps), the Google search apps which comes pre-installed in the default home screen of

Android devices as per MADA, enjoys massive competitive advantage and the competing search apps, are unable to overcome the *status quo* bias of mobile users who are generally reluctant to download the competing search apps. Similarly, users' download behavior of competing apps to Google's pre-loaded apps in mobile devices, remains the same (*i.e.,* the users are seen generally reluctant to download the competing apps and are unable to overcome the status quo bias) in other markets also where Google offers its apps/service as part of GMS under MADA (Table 11). This user tendency is also evidenced from the limited download of Google's apps on Apples' and Windows' devices (Table 8).

465. Based on the foregoing analysis, the Commission is of the view that the abovementioned conduct of Google of tying Play Store with Google YouTube, significantly restricts competition in the relevant market by foreclosing distribution channels for rivals OVHPs and thereby, deterring their incentive to innovate and offer choice to users. Such leveraging by Google allows it not only to protect but also reinforces its dominant position in the market for OVHPs. The Commission further notes that Google by the abovementioned tying safeguarded its revenue from advertisements resulting from YouTube.

Google's submissions on MADA and RSAs

466. The Commission notes that Google has made detailed arguments contesting the findings of the DG in respect of obligations imposed under MADA and RSAs. The submissions of Google are briefed as follows:

466.1. MADA is a voluntary, royalty-free licence agreement. OEMs are free to produce Android devices without signing the MADA—the Android source code is available to anyone on an open-source basis. The MADA is an additional offer, and the MADA does not oblige signatories to preinstall the GMS suite on a single Android device. Instead, OEMs have the option to preinstall the GMS suite on some, all, or none of their Android devices.

Only if they voluntarily choose to preinstall the GMS apps, then OEMs must abide by certain placement requirements. In particular, they must place the Google Search widget, the Play Store, and a folder containing the other GMS apps on the device's home screen.

466.2. MADA is extraordinarily valuable to OEMs as Google agrees to provide OEMs with Play and a set of high-quality apps for free, and OEMs agree to distribute the GMS apps subject to limited preinstallation and placement requirements. Similarly, Google claims that MADA encourages developers to write Android apps. App developers understand that when OEMs distribute a MADA device, at least one Android app distribution channel (Play) will be preinstalled on these devices.

466.3. Google claims that MADA supports Google's procompetitive business model as it balances various objectives while preserving the Android platform as a common vehicle for the apps and services of all developers. MADA is the least restrictive licensing alternative available to Google— the services that Google provides to OEMs, developers, and users are effectively paid for by advertisers.

466.4. Contrary to the Investigation Report's observations, OEMs are not deterred from preinstalling additional apps, including apps that compete with apps preinstalled under the MADA. Market data demonstrate that the pre-installation of Search, Chrome, and YouTube does not foreclose rivals from equivalent opportunities on devices that preinstall the GMS suite.

466.5. Licensing the full GMS suite guarantees consumers a consistent out-of-the-box experience and enables Android devices of any brand to compete with the suite of preinstalled apps on Apple devices. A number of third parties like Intex, Lava, Oppo, etc. confirmed in their submissions to the

DG that the GMS suite is an efficient way to provide consumers with key functionality that they expect, such as general search and a browser.

466.6.   It is not sufficient for the DG to identify contractual restrictions. It is obliged to identify anticompetitive effects resulting from the challenged conduct in abuse of dominance cases. Recent jurisprudence of the Commission confirms that the anticompetitive effects of a practice must be demonstrated to establish an abuse under Section 4 of the Act.

466.7.   Investigation Report's conclusions contradict recent Order of the Hon'ble Commission in *Harshita Chawla case* finding that the "*mere existence of an App on the smartphone does not necessarily convert into transaction/usage,*" and does not amount to an anticompetitive tie or leveraging.

466.8.   Contrary to the Investigation Report's observations, evidence demonstrates that MADA could not possibly have resulted in foreclosure. OEMs are not deterred from preinstalling additional apps, including apps that compete with apps preinstalled under the MADA. Market data demonstrate that the preinstallation of Search, Chrome, and YouTube does not foreclose rivals from equivalent opportunities on devices that preinstall the GMS suite.

466.9.   Users can and do also access alternative search services and video streaming services through their browsers. Google avers that users are free to access any search service or video streaming service by typing the name of their preferred service in the URL bar, or by setting up a bookmark for even faster access. Many browser developers monetise the screen space on their browsers by selling default bookmark settings to app developers, including in respect of apps that compete with Google Search and YouTube.

466.10. MADA does not contain a search or browser default requirement. The DG's failure to separate the impact of preinstallation and the impact of defaults is fatal to its case that the Search, Chrome, or YouTube requirements were capable of foreclosing Google's rivals. The MADA does not require OEMs to preinstall the Google Search app as the default search app, Chrome as the default browser, or YouTube as the default video streaming service.

466.11. Google claims that users choose Google Search, Chrome, and YouTube because of their quality. Further, the Investigation Report fails to consider whether any reluctance on the part of users to download competing search, browser or video streaming apps resulted from their preferences for Google's alternatives. Google invests significant sum each year in an effort to provide users with excellent experiences across its services. These investments enable Google to develop and introduce features that attract users, and reflect competition on the merits.

467. The Commission has perused the submissions of Google and its examination/analysis of the same is elaborated in succeeding paragraphs.

468. The claims made by Google that MADA is optional and voluntary, do not reflect the commercial reality in terms of the real choice available to a device manufacturer. While an OEM is not obligated to pre-install any Google app on its Android devices, what cannot be lost sight of is that lack of essential Google apps, *e.g.,* Play Store, erodes marketability of the devices. Majority of users expect these apps on an Android device, which unless pre-installed, cannot be accessed as they are not distributed through other Android app marketplaces. Google's policy of withholding its own apps from non-Google Android app marketplaces reinforces the compulsion for OEMs to pre-install these apps on their Android devices. Access to Play Store is particularly critical as Google is including more functionality and API calls under the closed licensing of Google Play. This makes

Google Play Services a critical input for Android OEMs. However, to pre-load even a single essential Google app, such as Play Store that provides users access to the Android app universe, a device manufacturer must sign MADA and AFA, committing to pre-install the full GMS suite.

469. Thus, theoretically device manufacturers need not sign MADA, if they do not wish to be subjected to the contractual restrictions. However, such a choice is commercially not viable for the OEMs for various reasons already discussed *supra*. The so-called choice for OEMs that Google refers to is between signing a non-negotiable MADA and commercial failure. Android OEMs seeking to have a commercially viable business have no meaningful choice but to sign MADA and AFA and accept all restrictions they contain.

470. Through the tying arrangement, Google has used Android as a vehicle, especially, to cement the dominance of its search engine. Google's strategy rests on the reach, scale and market power of Android, which allows Google to have control over a vast majority of smart mobile devices that serve as key gateways to the internet. Keeping Android OS open and 'free' of monetary consideration is thus in as much Google's interest as it claims it to be for the OEMs and users. Combined with the power of Android is the dominance that Google enjoys over Play Store which has attained unparalleled market position benefitting from huge indirect network effects, resulting in an overwhelming dependence of users, app developers and consequently of the OEMs. Its gatekeeper position in the Android mobile ecosystem thus makes Google well placed to leverage its power to protect and further enhance its dominance in online search by making it difficult for rival search service providers to enter and compete effectively in the mobile search space. The well-regarded benefits of the open-source system of Android cannot legitimize an exclusionary conduct that causes harm to competition in any specific area/markets.

471. Tying of Play Store, *inter alia* with Google search, without any plausible objective justification, is evidently driven by Google's objective to protect and strengthen its dominant position in general search services and thereby its revenues through search advertisements. On the one hand, it adds significantly to Google's competitive advantage in search and on the other hand it severely limits the rival apps' ability to compete on merits.

472. Mandatory pre-installation of Google search (widget on the default home screen) on all Android devices under MADA, ensures user traffic and valuable user data for Google that it can collect, combine and leverage for its search advertising business. Further, the user is not in a position to un-install these apps from their device. User data flows into Google's advertising platform, thereby creating a virtuous circle for Google but a vicious circle for competition. Google through its anticompetitive tying agreement gains a dominant control of online user information and destroys the financial viability of potential competitors who might use such applications as a potential base for their own search cum advertising platform to challenge Google. It can be argued that through MADA requirements Google is able to leverage its dominant position in the Android ecosystem to maintain and strengthen its dominance in search advertising sector.

473. From the beginning, Google has offered Android to hardware manufacturers at no cost as it does not intends to make any profit directly from the sale of android phones to users. Instead, Android is used as an indirect tool to attract as much attention as possible from users on other platforms such as Google search, Maps, YouTube, *etc*. It can use this attention to gain advertising revenue. The data generated from each application can complement the other and thus, gives Google a big data advantage over its rivals. It not only marginally improves users' search results but, more importantly, raises the willingness to pay by advertisers. Thus, in presence of cross market data advantage, pushing Android with other apps is a business strategy for Google.

474. Providing the tying and the tied products for "free" is only a means for appropriating user data that Google monetises in the search advertising market. This helps Google cement its dominant position by limiting effective entry and denies its rivals the scale and user data that they need to monetise on the search advertisement market and grow to become a credible alternative for users and a competitive threat to Google. Google's conduct can be viewed as 'dynamic leveraging' in which a tie increases barriers to entry and preserves existing dominance.

475. MADA prevents OEMs from exclusively pre-installing a competing search app on their Android devices as Google Search is one of the apps in the GMS suite. If an OEM were to pre-install a competing general search service exclusively on any of its Android devices, it would have to forego pre-installation of essential Google apps, including the Play Store. MADA thereby distorts the incentive structure, by essentially requiring OEMs to find substitutes for essential GMS apps including Play Store in case they choose to exclusively pre-install an alternate/rival search app on their devices. But for the restrictive conditions of MADA, rival search apps could have availed of the opportunity to pay the OEMs for exclusive pre-installation on at least some of their devices. Regardless of the amount a rival service provider may be willing to pay for exclusive placement or default option, MADA takes away such an option.

476. Google argues that MADA could not possibly have resulted in foreclosure as it does not require exclusivity and allows the OEM to pre-install other competing apps. In this regard, the Commission is of the view that the impact of Google's practices pursuant to MADA cannot be seen in isolation, but cumulatively through web of restrictions pursuant to multiple agreements *viz.* MADA, AFA/ ACC, RSA, *etc.* along with behavioral biases and market perceptions. Further, as already stated, the OEMs cannot afford to ignore MADA and offer bare Android devices. This is reflected by the fact that virtually all the OEMs have executed MADA with Google.

477. *Firstly*, there is no dispute that the default home screen of the smart device is a premium real estate with limited availability and that's exactly the reason why Google wants its apps to be available on the default home screen. As against the assertion of Google that MADA is optional, the Commission finds the same as necessity for any smart device OEM for various reasons discussed above. Next, pursuant to MADA, Google has secured a place for itself on this premium space. The OEMs would prefer not to clutter this screen to avoid any negative feedback from users and would offer very limited pre-installation opportunities to other app developers. Whereas, Google has secured this premium placement for all its GMS apps, including Search widget and Play Store. However, due to limited availability of space, the OEM would not be in a position to allow pre-installation on the home screen to at-least one competitor to each of the pre-installed apps of Google. Even the examples given by Google, show that as against 11 applications of Google pre-installed on the home screen, only 2-3 competing apps were pre-installed on the home screen.

478. *Secondly*, over the past few years starting from 2011, pursuant to these obligations, Google services have attained a status in the concerned market that the users prefer to Google's services. *E.g.,* Google search due to access to voluminous search queries from the mobile platform has been able to enrich its algorithm and thus, improve its services. Given the preference for Google's services by user, the OEM cannot afford to offer devices without Google's apps (which are only available through MADA, *etc.*).

479. *Thirdly*, despite this inclination of OEMs towards Google applications, Google offers revenue share to the OEMs for exclusivity which forecloses any remaining opportunity for the competing search services. Given the preference of users probably due to better search services and at the same time, getting paid for providing those services by Google, OEMs would not have any incentive to pre-install competing search services. As per the information available on record, in one instance, the competing search service has to offer 90% revenue share to the

OEM to secure a default position on the secondary browser, as against 10% offered by Google (generally). This is un-sustainable for the competitors.

480. *Fourthly*, as stated above, Google offers bouquet of various services and with the increased usage of these services is in an unassailable position to exploit economies of scale and scope with enormous data generated by all these apps together. The competitors being unable to offer these services and being placed at an inferior position in the Android ecosystem are at a competitive disadvantage. Google with additional data that feeds into its search-advertising business model, increase its competitive advantage over other rivals.

481. *Fifthly*, as against the claim of Google, certain Google requirements demand exclusivity, either explicitly or through technical architecture, including for default search provider, location provider and voice search provider. Thus, for these services and functions, Google errs in claiming that manufacturers can install other options in parallel.

482. *Sixthly*, AFA/ACC shuts down any possibility of an alternate smart device ecosystem wherein the competitors would be able to secure a distribution channel and constrain Google (discussed in detail *supra*).

483. Thus, mandatory pre-installation of the market-leading app automatically reduces the incentive for OEMs to pre-load another competing search app on their devices, let alone at comparable positions. Google in its submission has shown that certain competing app stores such as Vivo and Samsung Galaxy are also preinstalled by certain OEMs to argue that a non-exclusive preinstallation is benign. However, when it comes to the search app or the search widget, the pre installation though not mandated to be exclusive is *de facto* exclusive. This argued by Google is a free choice exercised by an OEM due to the excellence of its product. This argument of Google suffers from a serious identification problem. Though these are non-exclusive preinstallations, however, the earlier agreements had default

status embedded in them. So, once a critical mass of network effects was achieved, to argue that Google Search is now *de facto* preinstalled due to excellence is a bit fallacious. In digital markets strong network effects makes the application of as efficient competitor test difficult.

484. Further, as the Investigation Report demonstrates, Google incentivizes exclusive pre-installation through revenue sharing agreements with OEMs. Google has entered into revenue sharing agreements with several OEMs including Samsung, Huawei, Oppo, Motorola, Xiaomi and Vivo. Typically, Google has signed RSA with OEMs with an initial term of two years, which are extended/ renewed periodically. The tying arrangement under MADA and the revenue sharing agreements collectively (seen in light of the strong market position and brand recognition that Google search already enjoys), thwarts all possibilities of rival apps gaining traction in the mobile online general search market. Such, pre-installation results in a "*status quo*" bias *i.e.,* consumers are likely to stick to what is on the device. Google's argument that consumers can download a rival search app and the fact they don't, is because they prefer Google search which ignores the effects of choice architecture and nudges have in consumers' decisions. Nudging is at the core of Google's business model. But for the exclusives, these channels would be available for existing or new competitors to compete for traffic and scale. This conclusion underscores the concern that Google has maintained and enforced its exclusive arrangements to create a barrier to entry to competitors that might challenge its monopoly power in search.

485. Google argues that Indian users download billions of apps each year and therefore developers can offset through downloads any benefit associated with preinstallation of an app. However, Google fails to support its claim with data to show the extent of rival search apps downloaded from Play Store and/or other app marketplaces, rather the available data demonstrates otherwise. The Commission notes that, based on the available data, the same manifestly is not true in case of competing search service providers. The actual download of competing search

apps by Android users in India is negligible as such downloads of competing search apps together is ▮▮▮▮▮▮▮ of the Android devices in India. Google further claims that developers can offset any benefit associated with preinstallation of an app, through downloads. However, this assertion of Google is also meritless, as demonstrated by above data. Further, the conduct of Google in imposing pre-installation directly contradicts its' own assertions. If the same is taken to be true, then there is no need to require pre-installation of GMS on home screen. The Commission is of the view that practices followed by Google itself evidences that pre-installation creates a behavioural bias and thus, is an important promotional opportunity for its revenue earning services.

486. It further contends that the majority of Indian Android users customise their device's default home screen, for example, by moving an app and/or adding apps to positions of their choosing. However, the Commission is of the view that this does not make any material difference for OEMs who, having signed MADA, cannot offer exclusivity or the most prominent placement to a competing app. User customizations do not give competing app developers a reasonable chance to pay the OEMs to exclusive pre-install their apps and gain traction by exploiting the status quo bias in favour of pre-loaded apps.

487. Google claims that users access rival search services through browsers. However, the Commission notes that Google search is set as a default search service in Google's own browser Chrome, which enjoys significant market share in the Android ecosystem. Thus, another effective path to access users through browser is essentially reserved for Google search. Google's claim that the drop-down menu on Chrome allow users to change the default, again conveniently disregards users' tendency to stay in the default choice and to choose inaction over action. Even for Safari, Google is paying a substantial amount for the opportunity to gain the default position as it realises that default position is very critical, and user seldom changes the default. Thus, Google sees a value proposition in its agreement with Apple by securing user search queries from iOS devices and at

the same time ensuring that competing engines does not obtain the default position in mobile is the question.

488. It is pertinent to mention that the Investigation has demonstrated that pre-installation of this core suite of apps is non-exclusive, meaning that the MADA partner is free to preinstall competing apps and place them in as prominent locations as Google's apps. As per Google, it offers a non-monetary trade, under which it provides OEMs with an advanced OS and suite of apps for free and OEMs promote Google's revenue generating apps through pre-installation. According to Google, this 'trade' or 'barter' model eliminates an upfront licensing fee for OEMs, which has had significant benefits for OEMs and carriers. Google has also stated that it drives down OEMs' up-front costs, thereby facilitating OEM entry and the release of a wide array of lower-priced devices. However, the Commission holds that irrespective of its effect on the OEMs, the bundling strategy of Google helps further its dominance across markets and affects the contestability and vitality of competition in markets, such as search, web browsing, online advertising *etc.* The requirements that Google imposes on the OEMs through MADA can be construed as anticompetitive tying. For instance, an OEM may want YouTube only, but Google makes the manufacturer accept Google Search, Google Maps, Google Network Location Provider and other apps. An app developer with offerings only in some applications cannot replace Google's full suite of services.

489. Google claims that licensing the full GMS suite guarantees consumers a consistent out-of-the-box experience and enables Android devices of any brand to compete with the suite of preinstalled apps on Apple devices. This argument is nothing but a imaginary suggestion that a complete out-of-the-box experience cannot be ensured by pre-loading a combination of Google and non-Google apps. Furthermore, it completely undermines the role that OEMs can and should play in shaping consumer experience for their devices. The Android mobile OEMs compete with each other, while also competing with iOS mobile phones and thus

ensuring an out-of-the-box experience that a vast majority of users expect is in their commercial interest. While Google does provide the operating system, the OEMs are better placed to assess user demand and decide which apps to be pre-installed on their devices to remain relevant and competitive in the market. In fact, MADA limits the ability of OEMs to combine essential Google apps with third party apps and thereby to significantly distinguish their offerings from that of their competitors. If Google is of the view that the presence of its applications provides a great out-of-the-box experience, then the user or the OEM would itself decide to use its application. There does not appear to be any necessity to impose restrictions through MADA, RSAs and AFA/ACC, to achieve the same. The market forces would itself take care of that.

490. It is Google's contention that users choose Google apps/search because of their superior quality. This leads us to the reasonable corollary that even without MADA forcing full GMS suite on OEMs and users, Google would be able to attract users and generate revenue, otherwise also. User preference for Google apps would in any case compel OEMs to have them pre-loaded on their Android devices, even without any contractual obligation to do so. Moreover, users would download the Google apps of their choice in case they did not find the apps pre-loaded on their purchased devices, if they could access Play Store. In any case, Google also believes that users do not rely on pre-installation to access search services, browsers, or video streaming services, just as developers do not rely on preinstallation to compete for such user demand. This further negates any objective necessity for Google to force Android OEMs to pre-install full GMS suite if they wanted one or more specific Google apps pre-loaded on their devices.

491. Google has averred that MADA enables Google to promote its revenue-generating apps on Android devices and maintain its incentives to develop its range of high-quality—but non-revenue-generating—apps and services that enhance the value of Android and Android devices, as well as the Android platform itself. While Google is free to operate a business model that is premised on cross-subsidisation,

its choice of business model cannot justify conduct that harms competition. Under the garb of a designing a particular business model in a multi-sided market, Google is not at liberty to restrict competition.

492. The Commission further notes that the obligations imposed by Google weakens the innovation in the market for OS, search market, app store market, *etc.* which ultimately results in consumer harm. Various agreements of Google together, reduces both the incentive and the ability of competitors to develop innovative features.

493. Google claims that MADA is extraordinarily valuable to OEMs as developers. In this regard, as already observed by the Commission, when MADA is read with AFA/ ACC, it results in foreclosure of the licensable OS market by creating significant disincentives and entry barriers for any enterprise considering distributing a modified version of Android. When MADA is read along with RSAs, it results in exclusivity and reduced incentives for OEMs, search service providers and app developers, to experiment, innovate and offer better services and more choice to users. In this backdrop, value of MADA for an OEM, if any, cannot justify the anti-competitive effects being manifested in the markets.

494. In relation to the arguments of Google that actual anti-competitive effects must be demonstrated to establish an abuse under Section 4 of the Act, the Commission notes that under the scheme of the Act, the Commission is, amongst others, obligated "*to prevent*" practices having adverse effect on competition. This is clearly borne out from the long title to the Act, which reads as under:

> *"An Act to provide, keeping in view of the economic development of the country, for the establishment of a Commission to **prevent** practices having adverse effect on competition, to promote and sustain competition in markets, to protect the interests of consumers and to ensure freedom of trade carried on by other participants in markets, in India, and for matters connected therewith or incidental thereto".*

495. In view of the above regulatory framework as provided under the Act, the Commission has carefully perused the provisions of Section 4 of the Act and on a holistic consideration thereof, it is observed that "dominant position" under the Act has been defined as meaning a position of strength, enjoyed by an enterprise, in the relevant market which enables it to operate independently of competitive forces or to affect its competitors or consumers in its favour. Thus, once an entity is found to be dominant in the relevant market, the Act recognizes its ability to adversely affect competition in the market unilaterally through its conducts. As such, the dominant enterprise is clothed with a special responsibility not to indulge in the conducts which are enumerated in Section 4(2) of the Act. Resultantly, once a dominant undertaking is found to have indulged in any of the acts provided in Section 4(2) of the Act, the contravention of the Act stands established. This is further evident from the phraseology used in Section 4(2) of the Act which, *inter alia*, provides that there shall be an abuse of dominant position if an enterprise directly or indirectly "*imposes*" unfair or discriminatory condition/ price in purchase or sale of goods or services. The moment there is any imposition of any unfair or discriminatory condition by a dominant player, the statutory prohibitions shall trigger. The same is true for other instances of abuse as enshrined in Section 4(2) of the Act as well and the same also have to be read in this manner, which is consistent with the avowed objectives of the Act, as highlighted above.

496. The Commission also observes that Section 32 of the Act which deals with "*Acts taking place outside India but having an effect on competition in India*", clearly *inter alia* provides that the Commission shall notwithstanding that any enterprise abusing the dominant position is outside India, have the power to inquire into abuse of dominant position by such player if such dominant position has or *is likely to have* an appreciable adverse effect on competition in India. That being the statutory scheme in respect of anti-competitive acts taking place outside India, there cannot be any higher threshold for examining the abusive conduct which has taken place within the municipal limits of India.

497. Furthermore, the statutory architecture is also in accord with the underlying objectives of the Act by empowering the Commission to issue peremptory interim orders when an act in contravention of the provisions of the Act *is about to be committed*. This is exemplified from a plain reading of the provisions of Section 33 of the Act and for felicity of reference, the same are reproduced hereinbelow:

> *Power to issue interim orders*
>
> *Section 33*
> *Where during an inquiry, the Commission is satisfied that an act in contravention of sub-section (1) of section 3 or sub-section (1) of section 4 or section 6 has been committed and continues to be committed or that **such act is about to be committed**, the Commission may, by order, temporarily restrain any party from carrying on such act until the conclusion of such inquiry or until further orders, without giving notice to such party, where it deems it necessary.*

498. Be that as it may, in the instant case, the investigation has evidenced foreclosure outcomes for rivals of Google in various markets as has been brought out in this order and it is unnecessary to dilate any further on this aspect.

499. Google in its averments has also relied on Harshita Chawla case to assert that mere existence of an App on the smartphone does not necessarily convert into transaction/usage and thus, does not amount to an anticompetitive tie or leveraging, is also meritless. Google's averments are based on a selective reading and cherry picking of the said decision of the Commission. The complete observations of the Commission are as follows:

> "…*As regards Section 4(2)(a)(i), the Commission does not find much merit in the allegation of the Informant as mere existence of an App on the smartphone does not necessarily convert into transaction/usage. As highlighted by WhatsApp in its written submissions, **to enable WhatsApp payment, the user has to separately register for it which necessarily requires the users to accept terms of the service agreement and privacy policy. Such registration requires providing additional information and undertaking additional steps to link their bank***

account, as per the NPCI laid down framework for UPI digital payment apps. As such, no transaction can be completed without the user taking these necessary voluntary steps. Incorporating the payment option in the messaging app does not seem to influence a consumer's choice when it comes to exercising their preference in terms of app usage, particularly since there seems to be a strong likelihood of a status quo bias operating in favour of the incumbents, at present…..."

(Emphasis added)

500. Thus, the user needs to take further steps before using WhatsApp Pay service, whereas in the present matter, the user can use all the services of Google without any additional step of registration.

501. Google avers that users can access alternative search services and video streaming services through their browsers. Google further submits that between 2017 and 2021, approximately ▇▇▇ of all search queries on Android devices in India took place through a browser. Further, in 2021, ▇▇▇ of Google Search queries carried out on iOS devices in India were through browsers, in particular Chrome and Safari. Thus, Indian users clearly view browsers as a viable, if not preferable, means of accessing search services. In this regard, as already stated, the Commission notes that most of the browsers used on Android as well as iOS platforms, use Google as the default search engine and therefore, any search query is directly referred to Google's search engine for the results. It facilitates in maintaining dominance of Google in search services.

502. The Commission also notes that prior to 2014, MADA required OEMs to "*set Google Search as the default search provider for all Web search access points, intents, and requests.*" This included search defaults that are associated with the Android OS, such as implicit search "intents". Thus, till 2014, the MADA requirements were sufficient to have exclusionary effects. Google submits that search intent default requirement was removed beginning with MADAs executed from late 2014 and was waived for legacy MADAs that remained in place, and there are no active MADAs that contain this requirement today. However, when

MADA is seen along with RSAs (as discussed *supra*), it continues to manifest exclusionary effects.

Conclusion

503. Based on the foregoing analysis, the Commission holds that,

    A.   mandatory pre-installation of entire GMS suite under MADA (with no option to un-install the same) and their prominent placement amounts to imposition of unfair condition on the device manufacturers and thereby in contravention ofthe provisions of Section 4(2)(a)(i). These obligations are also found to be in the nature of supplementary obligations imposed by Google on OEMs and thus, in contravention of Section 4(2)(d) of the Act.

    B.   Google has perpetuated its dominant position in the online search market resulting in denial of market access for competing search apps in contravention of Section 4(2)(c) of the Act.

    C.   Google has leveraged its dominant position in the app store market for Android OS to protect its position in online general search in contravention of Section 4(2)(e) of the Act.

    D.   Google has leveraged its dominant position in the app store market for Android OS to enter as well as protect its position in non-OS specific web browser market through Google Chrome App and thereby contravened the provisions of Section 4(2)(e) of the Act.

    E.   Google has abused leveraged its dominant position in the app store market for Android OS to enter as well as protect its position in OVHPs market through YouTube and thereby contravened provisions of Section 4(2)(e) of the Act.

ISSUE VI: Whether, Google by making pre-installation of Google's proprietary apps (particularly Google Play Store) conditional upon signing of AFA/ ACC for all android devices manufactured/ distributed/ marketed by device manufacturers, has reduced the ability and incentive of device manufacturers to develop and sell devices operating on alternative versions of Android i.e. Android forks and thereby limited technical or scientific development to the prejudice of the consumers, in violation of the provisions of Section 4(2)(b)(ii) of the Act?

504. The Informant had alleged that Google prevents smartphone and tablet manufacturers in India from developing and marketing modified and potentially competing versions of Android ("Android forks") on other devices. This conduct was alleged to restrict access to innovative smart mobile devices based on alternative and potentially superior versions of the Android operating system, in contravention of Section 4 of the Act.

505. The DG has examined the issue in detail on various parameters, such as AFA/ ACC being unilateral and dotted line contract; the term 'fragmentation' or 'anti-fragmentation' been left undefined and its interpretation at the sole discretion of the OPs; relegation of the fork developers to an inferior position; obligation of signing MADA and AFA/ ACC in conjunction; all pervasive nature of AFA/ ACC; serious consequence of violation of AFA/ ACC obligation; the anti-fragmentation obligations being a major stumbling block for the development of Android forks by impacting innovation and R&D; lack of access to Google proprietary APIs for fork developers; negative impact of AFA/ ACC on consumers and market, *etc.* Based on its analysis, the DG has concluded that Google by making pre-installation of Google's proprietary apps (particularly Google Play Store) conditional upon signing of AFA/ ACC for all android devices manufactured/ distributed/ marketed by device manufacturers, has reduced the ability and incentive of device manufacturers to develop and sell devices operating on alternative versions of Android *i.e.,* Android forks and thereby limited technical

or scientific development to the prejudice of the consumers, in violation of the provisions of Section 4(2)(b)(ii) of the Act.

506. The Commission has carefully perused the allegations of the Informant(s), findings of the DG as well as the arguments made by Google. The observations of the Commission, in this regard are elaborated in succeeding paragraphs.

507. The Investigation has revealed that Google introduced AFAs in 2008-09 and later the same was succeeded by ACC. Further, while ACC was signed in the year 2017, but there was an overlap in terms of period between the AFA and ACC as both these agreements ran concurrently in case of majority of the OEMs. Google has submitted that it replaced AFA with ACC in order to simplify the agreement's structure and clarify how its partner's commitment to compatibility works in practice.

508. The Investigation has confirmed that access to the Android open-source project licence do not grant OEMs the right to install Google's proprietary Apps such as Google Search, Play Store, Chrome browser, YouTube, Google Play Services, *etc.* Further, AOSP licence also does not grant OEMs the right to use Android Logo and other Android related trademarks owned by Google. These rights are granted by Google once the smart device manufacturers enter MADA with Google. Further, one of the principal requirements of MADA is the execution of AFA/ ACC by the OEM concerned. The submission of Google in this regard is as follows:

██
██
██████████████████████████████████████

(Emphasis added)

509. Thus, the Commission notes that in order to have access to the proprietary apps of Google including Play Store, Play Services, Google Search, *etc.* as well as the trademarks related to Android, the OEMs have to sign MADA and the AFA or ACC (as the case may be). Google has not contested the same.

510. Further, at the cost of repetition, it is apposite to reiterate the obligations imposed by these agreements on the OEMs for a better understanding and examination of the allegation. The Commission notes that an AFA, places following obligations on a signatory OEM:

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512. In respect of India, the DG has stated that ████████████████████████

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513. In relation to ACC, the Commission notes that Google entered into Android
Compatibility Commitment Agreement ('ACC') with most of the OEMs from
2017 onwards concomitantly with AFA. The terms and conditions of ACC were
more or less similar to that of AFA with few exceptions. The obligation laid down
in ACC██

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514. Thus, an OEM who has signed the ACC is restricted from manufacturing,
distributing and marketing a smart device based on non-compatible Android
forks. Google has submitted that the aforesaid, prohibitions are subject to
permitted exceptions as contained in ████████████████████████████

████████[35] ████████████████████

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515. Thus, as compared to an AFA, the █████████████████████████████████
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516. Based on the above, the Commission observes that in order ███████████████
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Further, Google by virtue of being dominant in the market for app stores for Android OS is able to force the OEMs to agree to the AFA/ACC obligations, as the OEM has no choice but to agree to the requirements of Google in order to obtain a license of 'must have' apps such as Play Store for their Android devices.

517. In addition, the Commission notes that the anti-fragmentation obligations are all pervasive *i.e.,* they cover the entire device portfolio and not just the devices on which such Google apps are pre-installed. In other words, if the Google's proprietary apps are pre-installed in a single Android device (say, smart phones), the OEM is restrained from using Android fork (incompatible variants) in respect of all other devices (*e.g.,* smart watches, smart TVs, *etc.*). Google requires GMS licensees to submit all Android devices to Google for approval, regardless of whether the devices preload GMS or are based on the Android Open-Source Project.

518. In this context, it is pertinent to refer to the reply of Amazon Development Centre India Private Limited (Amazon) and the same is reproduced as under:

> '*...Amazon believes that in addition to smart mobile phones and tablets, it is important to consider the impact of Google's actions on non-mobile devices such as smart TVs, smart speakers and car audio units. Specifically, many smartphone/tablet manufacturers also make non-mobile devices and Google has been leveraging its dominance in mobile to restrain competition in non-mobile devices by requiring these manufacturers to sign AFAs that apply to all Android devices. At a minimum, device manufacturers who only make Android mobile devices should not be prohibited from making forked-Android non-mobile devices (such as TVs or smart speakers) because the AFA was imposed on them only as a condition to licensing GMS for their mobile devices* (especially since GMS is considered a must have suite of apps for Android mobile devices).*
>
> *Smart TVs and Smart Speakers:*
>
> 42. *Apart from the Fire Phone and Fire Tablet, additional Amazon devices including Fire TV devices, the Amazon Cloud Cam, and some Echo and other Alexa digital media devices also run on versions of the Fire OS. In principle, the Fire OS could run equally well on smart devices sold by OEMs. However, since the Fire OS is apparently viewed by Google as 'fragmenting' Android, Amazon is restricted in its ability to license the Fire OS to OEMs (for any of its smart media devices) if those OEMs produce any Android devices (because those OEMs are subject to Google's anti-fragmentation restrictions). Such OEMs risk losing their access to GMS (and certification of their devices) if they supply Fire OS devices. Given the market presence of Android, and the fact that Android is the only licensable mobile OS, this*

restriction affects the vast majority of OEMs who could develop and supply Fire OS smart media devices.

43.   Given the breadth of the anti-fragmentation obligations, Amazon has also experienced significant difficulties in finding OEM partners to manufacture smart TVs running its Fire OS. The breadth of the AFA restrictions as they apply to Android licensees is such that OEMs have concerns that manufacturing smart TVs running Fire OS will put their GMS license for other businesses (e.g., smartphone business) at risk, even if the OEMs do not manufacture and supply Android smart TVs. Amazon has explored working with mobile OEMs/ODMs/CMs who also manufacture non-mobile smart media devices, such as smart TVs, to enable those manufacturers to distribute non-mobile smart media devices (including smart TVs) running the Fire OS (e.g., Fire TV Edition (FTVE) for smart TVs). In these discussions with OEMs, at least seven OEMs have indicated that their ability to enter into a manufacturing relationship of this kind with Amazon is either blocked entirely or significantly limited (e.g., in terms of geographic scope) by their contractual commitments to Google and the concern that Google would retaliate against another of the OEM's businesses that produce Android devices. While discussions have not progressed beyond preliminary conversations with some of these OEMs*, in several cases, the OEM has indicated that it cannot work with Amazon despite a professed desire to do so in connection with smart TVs. In others, the OEM has tried and failed to obtain "permission" from Google. For example, such discussions occurred with Skyworth, TPV (with respect to the Philips brand), UMC (with respect to the Sharp brand), Foxconn   (with respect to the Sharp brand), and Panasonic. Panasonic also shared concerns about possible retaliation by Google against its automotive and aviation businesses if it proceeded with FTVE installation on smart TVs....'*

(Emphasis supplied)

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Impact of ACC/ AFA on innovation and development of Android forks

520. Given the significant investments required in developing an OS along with network effects prevailing in the smart device ecosystem, for a commercially viable OS, any Android fork developer would require a sufficient number of OEMs who are willing to install the forked OS on their respective devices. The OEMs have the technical knowledge and expertise to develop smart mobile devices and without their support, the fork developer would not be able to enter the market.

521. However, as the Investigation revealed, Google has executed MADA and thus AFA/ACC with almost all the major smart device manufacturers in India. Further, the period of these agreements is long term in nature and is extended from time to time. It is also found that Google requires that AFAs be renewed as soon as the remaining duration of the agreement falls below ▇▇▇▇▇▇. In addition, a bare perusal of the obligations imposed makes it clear that in case, Google's proprietary apps are pre-installed even on a single Android device, the OEM is restrained from developing/using Android fork for any other device. Thus, the expansive coverage of the anti-fragmentation obligations prevents developers of Android forks from finding distribution channels that would enable a rapid scaling up of their operations. Achieving a viable scale is very critical for the fork Android developer which thereby, would be in a position to pose significant competitive constraint on Google in the relevant market(s).

522. As identified in the Investigation Report, the example of Amazon Fire OS (a forked version of Android developed by Amazon) demonstrate that anti-fragmentation obligations severely limit the number of OEMs as well as their ability to market forked Android OS based devices. Amazon, having developed fork version of Android as Fire OS, had to face considerable difficulty in commercial production and distribution of handsets installed with Fire OS.

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███████████████████████████████████ The relevant

extract from the reply of Amazon, is as follows:

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(Emphasis supplied)

523. Further, the terms and conditions of AFA/ ACC made it literally impossible for the device manufacturers from partnering any developer of forked version of OS. The same is evident from the reply of Amazon and is reproduced as under:

> *'...as regards the Fire devices business, Amazon initially considered launching a variant of* ████████████████████
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> ██████████████████████████████████ *This product, however, was not launched and this project was, in fact, cancelled at an advanced stage when prototypes (more specifically, "Engineering Validation Test" units) were being tested. The main reason for the cancellation of this project was* ████ *concerns that its agreement with Google would be terminated by Google due to* ████ *supporting a forked version of Android. This led to Amazon developing its own tablet (i.e., the Fire tablet) using a contract manufacturer ("CM") (Quanta) which would operate on the Fire OS.*

(Emphasis supplied)

524. Amazon has also pointed out other hindrances in the path of developing a forked version of Android OS owing to terms and condition of AFA/ ACC. Achieving a viable scale would have allowed Amazon and other similarly interested

developers to invest in developing an alternative Android OS which would have offered more features and services. Thus, the obligations imposed pursuant to AFA/ ACC, have huge impact on innovation and research and development by competitors.

525. Thus, the anti-fragmentation obligations resulted in reducing the incentives of market participants to develop Android forks providing smart mobile devices with distinctive features and with additional functionalities. In addition to reducing the incentives of independent OS developers, these obligations also prevent the OEMs also from developing their own forked version of Android. OEMs are in a meaningful position to develop an Android fork (*e.g.,* Samsung with Tizen OS and Bada OS). However, the obligations imposed by Google which extended to the entire portfolio of the devices, restricted technical and scientific development of smart device OSs by thwarting potential development attempts of OEMs that could have borne fruits and added to the variety of OSs in the market.

526. The Commission also observes that Google's conduct tends to harm, directly or indirectly, consumers who have seen less choice of smart mobile OSs and general search services (*e.g.,* Fire OS). In addition, the anti-fragmentation obligations made it harder for competing general search services to achieve better distribution on smart mobile devices, which would allow them to gain additional search queries and the respective revenues and data needed to improve their services.

527. Further, as noted by the DG, fragmentation can be a source of competition and innovative products, as confirmed by the fact that Google itself created Android by breaking compatibility with Sun Microsystem's Java. One of the benefits of developing an Android fork instead of a full-fledged alternative smart mobile OS would be to have access to the wide pool of apps developed for Google Android. As such, fork developers have an incentive to minimise incompatibilities. Moreover, Android fork developers would have an incentive to set up credible and

efficient systems to ensure the correct functioning of apps on devices running their Android fork.

528. The Commission also notes that ███████████████████████ ██ ██ ███████████████████. Thus, it shows the wide, extensive and varied nature of implications for an OEM, which creates deterrence for an OEM to even contemplate collaborating for developing a fork version of Android in any manner whatsoever and in this process cedes total control of Android ecosystem to Google which in turn creates a virtually insurmountable barrier and also limits technical or scientific development to the prejudice of the consumers.

529. These restrictions not only results in hindering the scientific and technical development in smart mobile devices segment but also in respect of other areas as well where these restrictions have been expanded by Google. The Commission is of the view that such blanket restrictions on the OEMs entire device portfolio are not only unreasonable and onerous, but also egregious. This seems to be an attempt by Google to foreclose competition in other smart devices market and securing position for itself at the expense of other market participants.

Lack of access to Google proprietary APIs for fork developers

530. In relation to the development of forked OS, the DG has also examined lack of access to Google Play Services APIs for fork developers which is found to reinforcing the capability of the anti-fragmentation obligations to restrict competition as it makes it more difficult for Android forks to attract app developers. The Investigation has revealed that a large number of app developers for Google's Android make use of Google's proprietary APIs[36] for their

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[36] As already explained in this order, Google Play Service APIs, is a software layer working in the background of Android that is used to update Google apps and other apps from Google Play.

functioning and without access to same, these Android applications will simply fail to work. Google Play Services are provided along with Google Play and are not available separately.

531. It is noted from the Investigation that Google has also used its control and proprietary rights over APIs to obstruct the development of alternative and competing Android fork versions, thereby hindering technical or scientific development, innovation and R&D. By excluding these APIs from the Android OS and not making Google Play services available on forked versions of Android, Google prevents apps that use these APIs from running properly on forked versions of Android without any additional developmental work which involves a cumbersome technical process, significant costs and time.

532. In this regard, it is pertinent to refer to the reply of Amazon wherein it has stated that to prevent app portability, Google moved its APIs from Android source code to its proprietary Google Play service. The relevant reply of Amazon is reproduced as under:

> *'...An **OS and its forked version typically have similar source codes, the portability[37] of apps developed for the original OS to its forked version depends, inter alia, on the placement of Application Programming Interface ("APIs").** APIs are a set of proprietary software code which third-party app developers use to enable their apps to function with an OS and other apps or other services developed for an OS. App developers use APIs to allow their apps to function with an OS, apps and other services. **APIs used to create a functionality with GMS apps and services are proprietary to Google. If an app developer uses a Google API, then that app will not work on a non-compatible device (using a 'forked' OS) or will work with reduced functionality.***
>
> ***As long as the APIs are embedded in the source code of such OS, an app developed for the original OS can be easily ported to its forked version. If the necessary APIs are not embedded in the source code of the original OS, then non-OS APIs and services become essential in order to run apps (developed for the original OS) on the forked version, thereby, affecting app-portability.***

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[37] Portability of an app refers to the possibility of using that app with a forked version of the OS for which it was originally developed.

When Amazon developed the first generation of its Kindle Fire tablet device in 2011, app portability to an Android fork was high as many services (including APIs) were embedded in the Android Open-Source Project. Google thereafter decided to move newer versions of certain important APIs from the source code for Android OS to Google Play services. For example, Google released Google Cloud Messaging for Android in 2012 but then moved it to Google Play services the following year.

Google Play services are currently being distributed by Google through the Google Play Store, a proprietary app of Google, which is offered as part of a single package comprising Google's proprietary apps such as Google Maps, Youtube and Gmail. Accordingly, Google Play services are available exclusively on Android Compatible Devices. Forked OS developers (such as Amazon) and developers of a new OS are necessarily required to replicate and replace the requisite APIs (used by these third-party apps) made available through the Google Play services….'

(Emphasis supplied)

533. In the similar context, Amazon went on to make further submission and the relevant extract of such reply is reproduced hereunder:

'…If an OS does not support the most-used Google Play services APIs or offer equivalents to those APIs, porting the app will take much more time for a third-party app developer and may also result in a degraded customer experience. Accordingly, Amazon has invested significant time and resources to develop comparable alternatives to the popular GMS services (such as maps) along with analogues for some of the Google Play services APIs so that third-party app developers could use device messaging, maps, in-app purchasing, mobile advertising, analytics and games services in their Fire OS apps. It is clarified that, for a developer to convert its app to use one of these Amazon APIs instead of the Google Play services API, the developer must identify all the instances in which the app calls the Google Play services API, modify the app's code to invoke the Amazon API instead, build the app, and perform rigorous testing of it. In some cases, the app will require further modification if the Google Play services API and Amazon API differ in the features they offer or the way they are called…'

'…Moreover, the extent of additional developmental work required by a third-party app developer to make the most popular and the highest grossing apps of Google Play Store compatible with the Amazon App Store has hindered the growth of the Amazon App Store. Amazon's review of the 100 highest grossing bestseller apps available on the

Google Play Store (in 2014) indicated that none of those apps would operate on the Fire OS without any additional developmental work. This was because all of these apps used one or more Google Play services to improve the customer experience or the revenue generated from the app. Accordingly, the developers of these apps had to replace those services or remove the functionalities provided by these Google Play services before porting these apps to the Fire OS. As described below, it is submitted that **app portability involved significant difficulties (in terms of cumbersome technical process, high costs and time constraints)…'**

'…the availability of a wide selection of compatible apps makes an OS more attractive to users. **The Android OS comes with certain proprietary apps of Google, such as Google Maps and YouTube, which have witnessed strong customer demand. The developer of a forked version of the Android OS would only be able to pre-install these apps (which are packaged as GMS) on the devices operating on such forked OS, if it enters into the GMS license by signing the MADA. As stated above, the MADA makes the GMS license contingent on devices being Android Compatible Devices. This necessarily implies that in order to be able to make any of Google's proprietary apps available to its users, the developer of a forked OS would be required to (a) agree to Google's Mandatory Terms (including the COD and ACC); and (b) pre-install all of Google's proprietary apps available as a single package in the GMS.** *It is submitted that the independent consumer demand for some of the proprietary apps of Google, such as YouTube make it essential for any new OS looking to attract more users. YouTube has 225 million monthly active users in India, on mobile phones alone.* **By making the developer's access to its proprietary apps contingent upon agreeing to Google's Mandatory Terms, Google is, in fact, linking its proprietary apps to its allegedly 'open' licensable OS…'**

*'…***Technical barriers: In order for Amazon to make available the Google Play Store apps on the Amazon App Store, Amazon is required to develop comparable alternatives to the GMS apps so as to allow the apps to call on the Amazon APls instead of the Google Play services APls.** *In relation to this process, the* **Amazon API requires complete feature compatibility with the Google Play services API to avoid breaking app compatibility. Striving for complete feature compatibility with Google Play services APls requires continued investment on Amazon's part to stay updated with any changes Google makes to its APls, while also limiting Amazon's ability to innovate with its APls over time. Even if Amazon is able to obtain feature compatibility with a Google Play service, it would always come at a delay. Amazon does not receive the details of new and changed Google Play services until Google makes them publicly available, after which Amazon must**

update its service to match Google's. For example, the current version of Amazon's Maps API offers interface parity (but not complete feature parity) with version 2 of the Google Maps API, but Google has now released version 3 of its Maps APL Another example is that the Google Play Billing service offers additional flexibility and features to developers, including discounted pricing and free trials, and Amazon had to build this functionality for Amazon Appstore to allow its developers to have the same flexibility as they would in their Google Play Store apps.

Time Constraints: While a simple, map-based app may take approximately one week to port from Android to Fire OS, a complex game may take up to seven months to port from Android to Fire OS due to its social features, shared economy and other complex elements. On an average, Amazon estimates that it would take 1-2 weeks (plus testing time) per API for a developer to switch from Google Play services APls for in-app purchasing and device messaging to Amazon's corresponding APls and 2-3 weeks (plus testing time) for a developer to switch from Google's Maps API to Amazon's Maps API.

Cost Constraints: It is submitted that these are not one-time investments by the developers. Each time a developer updates an app, it must do additional development work to ensure that the updated app works with both the Google and Amazon APls and must perform testing on both versions. As a result, each Google Play services API used in an app makes it more difficult for that developer to distribute its app for use on forked versions of Android. Further, the widespread usage of those APls makes it difficult for companies like Amazon to recruit app developers to develop apps for Fire OS, because of the relatively high conversion and maintenance costs developers of sophisticated apps must incur…'

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(Emphasis supplied)

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534. The Investigation revealed that Google moved APIs out of open-source Android to Google Play services, leading to a significant drop in portability. For example, Google released Google Cloud Messaging for Android in 2012 but then moved it to Google Play services the following year. Since then, all new significant APIs that Google released are available exclusively through Google Play services. The APIs that remain as part of open source are not updated at the same rate as the corresponding closed source versions. Thus, a lack of availability of Google proprietary APIs has limited the availability of apps on the alternative OSs like

Fire OS which makes them less attractive to end users. This results in a vicious cycle where a limited app selection impedes Android fork developer's ability to distribute its Fork OS and the devices operating on such OS, and the same resulted in the limited distribution of the Fire OS.

535. The DG has also noted that by hindering the development of Android forks and eliminating a credible competitive threat to Google Android, Google's conduct helps to maintain and strengthen Google's dominant position in the market for general search services. This is because devices based on Android forks can be used by competing general search services as a channel for the distribution of their search apps and services. For example, use of fork devices to pre-install competing search services such as Bing *etc.* instead of Google Search. By hindering the development of Android forks, the Commission observes that Google raises barriers to the entry or expansion of competing search apps and services and, thus, protects its search advertising revenues coming primarily through its general search services.

536. Thus, based on the foregoing, the Commission observes that lack of access to Google's proprietary APIs for fork developers have limited their ability to effectively compete with Google as it makes it more challenging to attract app developers on the new OS.

Relegating fork developers to an inferior position

537. With respect to the ability of fork developers, the Investigation also revealed that the OEM's who have signed AFA/ ACC are granted early access to Android codes before it is publicly released. Since, fork developers are dependent on the latest available version of AOSP, delayed release of the same for fork developers results in a competitive disadvantage as well as creates technical problems.

538. In this context, the relevant reply of Google is reproduced as under:

> *'...Google often works with Android partners to help them design and build compatible devices compliant with the AFA/ACC, including by granting AFA/ACC partners early access to code before it is publicly released, holding bootcamps to educate partners on upcoming Android OS features, etc., and* ███████████████
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539. The response filed by Amazon, who has pointed out the inferior treatment meted out to the Fork version by Google, is verbatim mentioned herein below:

> *'...Amazon chose the third option of forking the open-source version of Android released by Google based on the stated objective of Android Open-Source Project, which is "to avoid any central point of failure in which one industry player can restrict or control the innovations of any other player." Amazon was attracted to the stated 'openness' of Android, as claimed by Google - namely, that any developer of an open-source Android OS could purportedly participate and compete with Google across the wider Android ecosystem.*
> *However, Amazon did not realise at that time that this ostensive 'openness' of Android is qualified by the fact that software updates, bug fixes and enhancements are controlled by Google, as a market practice. For instance, the users of open-source version of the Android OS usually have delayed access to important software updates, new releases, bug fixes and enhancements included in the new versions of Android (which Google -develops with its licensed OEMs). Google, therefore, has the power to "break" Android compatibility of the Fire OS with each of its new versions of Android.*

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(Emphasis supplied)

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540. Thus, it is noted that Google's practices result in relegating Android Forks developer to an inferior position by delay in publicly releasing the Android source code.

AFA/ ACC is unilateral and dotted line contract

541. From the information available on record, the Commission also notes that AFA/ ACC are not bilaterally negotiated. Google has the right to change the specific

CDD/ CTS clauses at any time, unilaterally. The same is also admitted by Google. The relevant extract from the submissions of Google is reproduced below:

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(Emphasis supplied)

542. Based on these submissions, it is noted that there are no negotiations between Google and OEMs on the terms and conditions of AFA/ ACC and the same are unilaterally decided by Google. This observation has been supported by several OEMs. Some of these responses are extracted below:

542.1. Xiaomi, in its reply has submitted that '*There was no negotiations or discussion between Xiaomi and Google regarding the ACC and AFA. The author of both documents, AFA and ACC, is Google*'.

542.2. According to OPPO '*…there had been no specific negotiation except some general negotiations and discussions from the technical and commercial purviews had happened between OPPO and Google in relation to AFA/ACC.*'

542.3. Micromax in its reply has submitted '*…We could not find any specific documented negotiation with Google for ACC.*'

542.4. Karbonn Mobiles in reply and stated that: '*...Karbonn did not participate in any negotiation on AFA/ ACC…*'

543. Thus, the unilaterally determined clauses of AFA/ ACC and the compatibility requirements leave no room for the OEMs to experiment in the market with variety of services and devices.

Definition of 'fragmentation' or 'anti-fragmentation' left undefined

544. The Investigation also revealed that Google has not specifically defined the meaning of term 'fragmentation' or 'anti-fragmentation' and has equated it with

(Emphasis supplied)

545. Further, the 'Android Compatible Device(s)' as per the Anti-Fragmentation Agreement between ████████████████████████████████

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546. It has also been stated by Google that ████████████████████████

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547. In this context, following responses of handset manufacturers ('OEMs') are pertinent to note:

547.1. According to Xiaomi, '*...Fragmentation is not a clearly defined term, but simply put, Android fragmentation refers to a concern over the large number of different available Android operating system (OS) versions in the market...*'

547.2. According to LAVA, '*...Android fragmentation refers to a concern over the alarming number of the different available Android Operating System (OS) versions in the market. The main issue is potentially reduced interoperability between devise of applications coded using the Android SDK...*'

547.3. According to OPPO, *'...there is no definition of fragmentation from Google nor has fragmentation been defined in any agreement/ document signed between Google and OPPO...'.*

547.4. According to Samsung, *'...AFA sets out the manufacturer's obligation to not take any actions that may cause or result in the fragmentation of Android. The term fragmentation is not further defined in the AFA...'*

547.5. According to Huawei, '*...There is no clear definition of fragmentation of Android in any agreement between Huawei and Google.'*

547.6. According to Motorola, *'...There is no explicit definition of fragmentation, but our understanding is that it means, a device based on Android OS but that is not compatible with the Android ecosystem...'*

547.7. According to Micromax, *'...Android fragmentation refers to a concern over the alarming number of different available android operating system (OS) versions in the market. The main issue is potentially reduced inter-operability between devices of applications coded using the Android Software Development Kit (Android SDK)...We could not find the definition of Anti Fragmentation in the available agreements signed between Google and Micromax...'*

548. Based on the aforesaid replies of most of the OEMs, it is noted that by keeping the contours of the term fragmentation undefined, Google has kept the sole discretion to interpret the same as per its interest at all times. By simply stating that the OEM *will not take any actions that may cause or result in the fragmentation of Android,* Google left the OEMs guessing as to whether a particular action is within the ambit of the AFA. Google at its whims and fancies could consider any customization of the Android code as fragmentation as it retains the power to unilaterally change the compatibility requirements. Since,

Google requires GMS licensees to submit all Android devices to Google for approval, regardless of whether the devices preload GMS or are based on the Android Open-Source Project, the OEMs are left to the dole discretion of Google *w.r.t.* their devices. This also restricted the ability of the OEMs to test the markets with newer features and devices.

549. The Commission also notes that Google actively monitors compliance and strictly enforces, the anti-fragmentation obligations. ██████████████████████ ██ ██ ██ ████████████████████████ Thus, there are serious consequences of violation of the provisions of the AFA/ ACC and any punitive action by Google in this regard may have unbearable effect on the businesses of the device manufacturers.

550. The Investigation also concluded that Google's intention to notify hardware manufacturers of the option to enter into an ACC in place of an AFA does not alter the fact that Google still makes the licensing of the Play Store and the Google Search app contingent upon hardware manufacturers agreeing to the anti-fragmentation obligations in the AFAs. The Commission notes that while the ACCs would allow OEMs to manufacture Android incompatible devices under a third-party brand and AFA signatories to supply components for incorporation in Android incompatible devices under a third-party brand, it would still not allow OEMs to manufacture Android incompatible devices under their own brand (alone or in conjunction with the brand of the Android fork developer).

Google's submissions on AFA/ ACC

551. Google has argued that AFA/ACC do not restrict competition on any relevant market and to the contrary, they have a pro-competitive objective and effect *i.e.,* to address the inherent threat of fragmentation that would otherwise imperil

Android. It has been further submitted that Google's compatibility efforts have achieved undeniable benefits, both for mobile OS competition and for Android consumers as well as app developers in India and around the world, who benefit from a stable, interoperable Android platform. Google has made detailed arguments contesting the findings of the DG and the same are briefed as follows:

551.1. Google argues that AFA/ ACC are vital for maintaining the integrity of the Android ecosystem. Google makes Android available under a free and open-source licence and hence, an OEM is free to implement it differently from another OEM. Due to these differences in implementation, Android runs the risk of incompatibilities or fragmentation. As per Google, this means that an app written for one implementation of Android might not run properly on a different implementation. This would make Android less attractive to users and developers, and therefore less competitive. In this regard, Google cites the example of Symbian OS which is claimed to have vanished due to incompatible versions of the OS.

551.2. Google claims that its solution to the fragmentation problem is a narrowly tailored baseline compatibility program. AFA/ACC signatories commit to a compatibility baseline for all their Android devices which ensure the basic functionality that Android developers expect devices to carry, and a predictable developer environment and user experience. Google also claims that its legitimate concerns about fragmentation, and the procompetitive purpose of its baseline compatibility program, is well evidenced by contemporaneous internal documents identifying the need to address fragmentation from the very outset of Android.

551.3. The Investigation Report ignores third-party statements from the DG's market investigation that expressly validate the AFA/ACC's procompetitive object and effect. Google argues that Indian OEMs

validate AFA/ACC procompetitive effects and addressed similar concerns with the Commission.

551.4. Google also claims that the Investigation Report is based on the untested assumption that Android would have been as successful without the AFA/ACC. It merely assumes that Android would have had the same success without necessary measures to address fragmentation for all Android stakeholders. Google has also relied on a survey and claimed that majority of the █████████████████████████████████████ ██ ██ ██ ██ ██████

551.5. Google could not rely on the self-discipline of OEMs and fork developers to ensure full compatibility. Since Android's inception, Google recognised the risk that OEMs might deviate from minimum baseline compatibility standards to save on development time and costs. In other words, OEMs might have a financial incentive to 'cut corners', even if they recognise the benefits that a compatible ecosystem brings and the reputational damage to Android from incompatible devices.

551.6. AFA/ACC have unleashed competition and expanded opportunities for rival OSs and search services. In India, highly differentiated yet fully compatible Android implementations have achieved significant popularity thanks to the innovation enabled by the AFA/ACC. To take just three examples – Xiaomi's MIUI, Oppo's Color OS, and Vivo's Funtouch OS– these compatible Android variants alone, marketed as distinct OSs, achieved distribution on almost ██ million devices sold in India in 2020

(around ▇ of all mobile phones, and around ▇ of all smartphones, sold in India in 2020).

551.7. Investigation Report does not demonstrate how the baseline compatibility requirements have restricted competition. AFA/ACC only require signatories to ensure their Android variants meet the minimum baseline compatibility standards defined in the CDD (*e.g.*, having a microphone and audio output and enabling the installation of apps). The Investigation Report does not challenge these basic compatibility requirements and does not explain or substantiate how they could have restricted any relevant parameter of competition.

551.8. Investigation Report provides no examples of any innovations prevented by the AFA and attempts to fill this gap by referring to the "architectural innovation Amazon explored in Fire". But the Report fails to (i) identify any specific innovative feature of the Fire OS, or (ii) explain how the AFA/ACC prevented Amazon from innovating with a compatible Android-based OS.

551.9. Incompatible forks are not a greater competitive threat than compatible Android implementations – they are unattractive to OEMs, developers, and users. The Investigation Report's objections are based on the claim that incompatible forks are a "credible competitive threat to Google Android" the development of which the AFA/ACC hindered.

551.10. The Investigation Report fails to establish causation *i.e.,* incompatible Android forks failed for reasons other than the AFA/ACC. The Report treats Amazon's Fire OS as the main example of an incompatible Android OS that the AFA/ACC allegedly restricted. Third-party respondents contradict the Report's claim that Amazon's Fire OS would have become a successful platform but for the AFA/ACC. For example, Paytm told the

DG that "Android fork OSs", such as Fire OS, which do not include support for the location API, GMS and Google Play Services are not a viable alternative for app developers.

551.11. The Investigation Report seeks to demonstrate that absent Google's AFA/ACC, users would have enjoyed a greater range of choice through devices running incompatible Android-based variants. The Report, however, asserts these incompatible devices would have failed even absent the AFA/ACC, because they lacked access to the wide pool of apps and services – including Google's Play Store and proprietary APIs – that Android devices need to compete.

551.12. The Report claims that Google's refusal to licence its proprietary APIs (Google Play Services) to forks obstructs the development of alternative Android versions. Google is not required to encourage the development of incompatible forks by providing them support or open-sourcing Google's proprietary innovations. Thus, it is legitimate and not abusive for Google to innovate with proprietary APIs licensed only to compatible Android devices.

551.13. Google does not disadvantage Android fork developers by not sharing with them pre-release Android versions. Limiting early access to proprietary, not yet published Android code, serves to protect users and prevent free-riding on Google's investments, rather than disadvantage OEMs running incompatible Android forks. In any event, partner OEM's access to pre-release versions of Android does not confer any material competitive advantage.

551.14. AFA/ACC do not foreclose rival search services and an OEM that has signed the AFA/ACC could preinstall Bing or Yahoo! in place of the Google Search app, even on an exclusive basis.

551.15. The Investigation Report alleges that "the most disconcerting part of the AFA/ACC" is that it goes beyond smart mobile devices, and impacts non-mobile devices, such as smart TVs, smart speakers, and car audio units. However, to find Google's application of the AFA/ACC to non-mobile devices abusive, the Investigation Report would have had to show anticompetitive effects in those non-mobile markets taking account of the specific market context. The Report does not even attempt to show such effects. Google argues that it grants waivers, including for non-mobile devices, from compliance with compatibility.

551.16. Google introduced the AFA when Android was a new entrant that represented less than 1% of mobile operating systems worldwide. The fact that OEMs entered into the AFA when Google was a negligible OS player precludes the finding that its terms were abusive. If they were, the OEMs would simply not have signed up to them. But OEMs saw the need for Android to have an effective mechanism to prevent debilitating fragmentation and attract developers.

551.17. The term 'fragmentation' in the AFA/ACC is clear and it means non-compliance with the CDD. Google argues that the allegation in the Investigation Report is factually incorrect. The Report is also incorrect to claim that Google may interpret the term at its sole discretion. The AFA is contract, and as any contract, its interpretation – by either of the parties – is subject to the scrutiny of the courts. In any event, during the alleged period of infringement, Google replaced the AFA with the ACC, which fully resolves the Report's concerns regarding the alleged vagueness of the term "fragmentation" in the AFA's anti-fragmentation obligations. The ACC removes the term fragmentation altogether.

552. The Commission has perused the submissions of Google and its examination/analysis of the same is as follows:

553. The AFA/ ACC prohibits distribution of non-compatible Android devices by OEMs. Google has entered into AFA (and replaced the same with ACC) with a large number of handset manufacturers ('OEMs') and the coverage of these agreements is substantial. The OEMs are not permitted to manufacture/ develop hardware for themselves, which is not as per the compatibility conditions stipulated by Google. As the Investigation has revealed, signing of AFA/ ACC is a pre-condition for MADA, which in-turn an OEM is obligated to sign, if they wish to pre-install any Google proprietary app on their Android devices.

554. In fact, the scope of the AFA/ ACC is not limited to just smart mobile devices, but all Android devices manufactured/ distributed by the signatories.

555. The Commission notes that there are three aspects of the anti-fragmentation obligations. At first level, the OEMs can pre-install Google's proprietary apps *i.e.,* GMS only on those Android devices which meet the compatibility requirements of Google. Google has a legitimate interest in licensing its apps only for those devices which meet the minimum requirements set by it. Thus, these anti-fragmentation obligations would allow Google to prevent OEMs from making any such changes in the OS which would interfere with the proper functioning of its proprietary apps. The Commission notes that some standardization may be required in order to ensure consistent and expected user experience from Google's proprietary applications. Thus, to some extent such restrictions, can be said to be justifiable to the extent these are applicable on devices with Google's applications. However, the restrictions have to be reasonable, proportionate and not in the nature of blanket prohibitions. Also from Competition Law perspective, the issue for consideration is whether the restrictions under AFA/ACC, adversely affect the incentives of OEMs, app developers and users to experiment with innovative

products using Android forks. The reply to the same is in affirmative and is discussed in subsequent paras.

556. At second level, the AFA/ ACC requires a device manufacturer to commit not to distribute a forked version of Android on any of its smart mobile device, if it is marketing a device with pre-installation of Google apps. In essence, this is to strictly disallow the OEMs to market compatible Android mobile smartphones and, at the same time, sell smart mobile devices based on Android forks. In this regard, the Commission notes that Google enjoys a dominant position in the app store market for Android OS, general web search market as well as non-OS specific web browsers market through its Play Store, Google Search and Google Chrome browsers, respectively. Therefore, any OEM for a successful and commercially viable smart mobile device business, cannot afford to not offer these Google's services in its smart mobile devices and completely rely on Android forks (as Google only enters into MADAs with OEMs that commit not to sell Android forks). In these circumstances, if a signatory OEM wishes to experiment and test the market by offering limited range of smart mobile devices based on Android forks, it is forbidden to do so by the anti-fragmentation obligations.

557. Google claims that it might result in confusion amongst the users between GMS devices and other Android fork devices. However, the Commission is of the view that Google being a dominant entity has the special responsibility not to impinge the process of competition and ensure fairness and reasonableness in its conduct. Accordingly, to safeguard its legitimate interests, Google could have used alternative means *viz.* use of Google's branding guidelines to distinguish between GMS devices and devices running Android forks. As already elaborated earlier, the Android trademarks are allowed to be used only after signing MADA and thus, only GMS devices can use the "Android" name, logo and other trademarks. Thus,

the branding distinction to a large extent would have taken care of the problem cited by Google. These *Brand Guidelines*[38] *inter alia* provide that,

> *"…The use of Android on a hardware device and packaging or marketing materials related to that hardware device is restricted to Android compatible devices only…"*

> *"…Google reserves the right to require Android and/or Google branding on compatible devices and any related materials, which includes but isn't limited to packaging, boot-up sequence, and marketing materials…"*

> *"…**Android logo**
> Unless expressly authorized by Google through written agreement, the Android logo and custom typeface may not be used (with or without the Android robot)…"*

558. The Commission finds that the restrictions imposed *vide* various clauses of AFA/ACC are unreasonable and disproportionate in scope and has resulted in foreclosure of its competitors in OS market. Google, in its submissions also claims that a branding solution would be ineffective and lead to consumer confusion as firms would be allowed to market incompatible devices as "based on Android" or "using Android". Though the Commission does not find this assertion convincing, but in that case too, Google could have suitably amended its branding guidelines to make this distinction more prominent.

559. Google in its submissions placed reliance on submission made by Sony that *"without [AFA/ACC], it would be difficult to ensure that Google apps run reliably on the smartphones, and avoid technical and security problems"*. In this regard, as noted above, Google may pursue its legitimate interest by prescribing certain reasonable compatibility requirements to the extent these are applicable on devices with Google's applications. However, the Commission find no justification for Google's interference with the freedom of OEMs to sell devices based on Android forks that do not use or pre-install Google proprietary apps. The

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[38] https://source.android.com/docs/setup/start/brands

only objective behind such blanket restriction is found to be foreclosing the distribution channel for existing or potential rivals.

560. At the third level are those situations, where if the OEM concerned wishes to market smart mobile devices with Google's proprietary apps pre-installed, then the OEM is restrained from manufacturing, selling and marketing *any* smart device (*e.g.,* smart watches, smart TVs, *etc.*) using Android fork. The Commission notes that Google has not proffered any plausible explanation for the same and failed to convince as to how such restriction on other smart devices is justified. The only beneficiary of such egregious restriction can be said to be Google who stands to gain a secured place in these other devices market by foreclosing OEMs to use other forked Android OSs. In view of the foregoing analysis, the Commission is not inclined to accept the claims of Google that AFA/ACC do not go further than necessary to preserve the Android platform, and the Commission is of the view that the restrictions are expansive and disproportionate in scope and do not have any plausible justification.

561. In this context, it is relevant to mention that Google being a dominant player has a special responsibility and obligation under anti-trust law. Dominant enterprises must not take unfair advantage of their position as such abusive conduct not only impacts the market as a whole but may also affect the entry and sustenance of other market participants into complementary markets associated with the platform. In the present case, Google being a dominant player ought to be mindful of the exclusionary implications of the restrictions imposed on OEMs and should have used more competition friendly alternatives.

562. The Commission also does not find any force in the argument of Google that AFA/ACC are vital for maintaining the integrity of the Android ecosystem and fragmentation is a risk for the same. *Firstly*, Google has not demonstrated that AFA/ACC are the best means to achieve the legitimate objectives. *Secondly*, as noted by the DG, fragmentation can be a source of competition and innovative

products, as confirmed by the fact that Google itself created Android by breaking compatibility with Sun Microsystem's Java and *thirdly*, anti-fragmentation obligations have resulted in disproportionate restrictions on the ability of the OEMs, Android Forks OS developers, app developers, users to make the relevant market more competitive as compared to the present situation. Absent, these restrictions, OEMs would have been in a position to provide a distribution channel through their respective smart devices, to the competing Android Fork OS developers.

563. As regards Google's contentions that AFA/ACC have unleashed competition and expanded opportunities for rival OSs, the Commission notes that the impact of the obligations imposed by AFA/ ACC need to be appreciated from the perspective of Android fork OS developers. As already explained *supra*, these obligations have foreclosed the market for competing Android Fork OS developers. Further, the OEMs covered byAFA/ ACC have limited flexibility in modifying the Android OS, as the customizations are controlled by Google *via* unilaterally deciding the CTS and CDD requirements. The anti-fragmentation obligations restrict the level of competition in the relevant market by disincentivizing the competing OS developers from developing forked versions of Android. Thus, the competition between compatible forks does not produce competitive constraints on Google.

564. Moreover, under the garb of achieving these objectives, the platform operators like Google cannot be allowed to hinder competition and foreclose the market for competitors. Some OEMs have also voiced against the restrictions imposed by AFA/ACC.

564.1. Xiaomi has submitted that,

> *"...From a general perspective, if there are any AFA/ACC restrictions on fragmentation which result in the creation of one OS which then becomes the monolithic must have' OS for apps, this may restrict the development of alternative operating systems…"*

564.2.   Lava has submitted that,

> *"...AFA/ACC obligations restrict the developer/OEM's ability to modify and/or create a forked version as an alternative OS in any other combination or to develop upon it. This definitely affects the entry of new developers/OEMs and ability of existing developers to innovate, create and further develop an OS which is a true alternate to Android. However, since Lava has not yet attempted any such modifications to the android system, we are not in a position to comment on the actual impact of the same on future scientific development of an alternative OS. As per our current understanding, android fork developers are able to utilize the Google API's to a limited extent. This restricts their ability to develop a holistic alternate app eco system…"*

565.   In relation to the arguments of Google that the Investigation Report provides no examples of any innovation prevented by the AFA, the Commission notes that the Investigation has convincingly brought on the record that one of the reasons for failure of the commercial launch of Amazon's Fire OS was anti-fragmentation obligations. If allowed to prosper and compete in the market, Amazon would have been in a position to constrain Google in the relevant market. Google's conduct exhibited through obligations imposed under AFA/ ACC nipped the bud and foreclosed this potential competition. Moreover, as already stated, once a dominant undertaking is found to have indulged in any of the acts provided in Section 4(2) of the Act, the contravention of the Act stands established. The moment there is any imposition of any unfair or discriminatory condition by a dominant player, the statutory prohibitions shall trigger. The same is true for other instances of abuse as enshrined in Section 4(2) of the Act as well and the same also have to be read in this manner, which is consistent with the avowed objectives of the Act.

566.   The Commission further notes that the relevant market(s) in the present matter is characterized by the presence of network effects *i.e.,* when there are multiple and interdependent sides that together determine the market outcomes. Therefore, multiple factors as discussed in this decision have impacted the failure of Android forks to make a mark in the market *viz.* anti-fragmentation obligations, lack of

access to Google's proprietary APIs due to which fork developers could not attract app developers, non-availability of 'must-have' apps like Play Store, Google Search, *etc.* Each of these factors played their respective part in determining the market outcomes. These ecosystems do not operate in silos but are highly interdependent on each other where a particular conduct of the platform operator influences various other segments of the ecosystem.

567. Google also argues that it cannot rely on the self-discipline of OEMs as they might have a financial incentive to 'cut corners'. The Commission notes that Google is well within its rights to pursue its legitimate interest, but the steps taken in that regard should be reasonable, fair and proportionate and not blanket prohibitions. As admitted by Google, the OEMs have an interest in offering compatible devices. The Commission is of the view that OEMs have invested significant resources in developing, manufacturing and marketing smart mobile devices and thus, they cannot afford to offer smart mobile devices which would not support the existing apps available on the Android Platform. It will unleash reputational damage to the OEMs concerned.

568. In relation to Google's arguments that in-compatible forks are not a greater competitive threat than the compatible modifications of Android by OEMs, the Commission notes that markets should be allowed to operate freely and the dominant enterprises should not interfere in its functioning to suit its commercial interest at the expense of other market participants. The Investigation has revealed that developing an Android Fork is relatively cheaper as compared to developing an OS from the scratch. Moreover, many of the apps written for Android can also run-on Android forks without significant investments. Android Fork developers, but for the AFA/ACC, may add more innovative features in the OS which may find acceptance from the users, OEMs and app developers. Google on one hand prevents adoption of Android forks by way of ACC/AFA and at the same time argues that Android forks are unattractive to users, OEMs and app developers.

Accordingly, instead of a dominant entity deciding the outcome, the market should be allowed to explore and test various available alternatives.

569. Google has also contended that AFA/ ACC is necessary to prevent the same fate as that of Symbian OS, wherein the developer faced the issue of high development cost for apps that rendered its platform unattractive to the app developers. However, the DG on the basis of analysis of the existing literature noted that the reason for failure of Symbian OS were multitude such as poor internet performance; boring user-interface; perceived lack of profitability; frequent screen freezes and call drops *etc.* Thus, no single specific reason, can be attributed to the failure of Symbian OS.

570. Google argues that it is not required to encourage the development of incompatible forks by providing them its proprietary APIs. In this regard, the Commission notes that Android ecosystem controlled by Google has reached such a stage where most of the Android based apps already function on the basis of Google's proprietary APIs. Thus, though Google may not be required to provide access to these APIs, but their un-availability, disincentivises the app developers to port their apps to the Android forks by increasing their cost. This would in turn significantly dent the probability of commercial success for the Android Forks.

571. Google argues that it grants waivers, including for non-mobile devices, from compliance with compatibility. In this regard, the Commission notes that *firstly*, there are several non-negotiable aspects of various obligations imposed by Google, which severely limit the scope of seeking an exception/ waiver from Google and *secondly*, seeking waivers may not be an effective option for the OEMs and may have attendant implications, given the dominant position of Google in the market. In any case, an opportunity to seek waiver from Google cannot be equated with the commercial freedom of the OEMs to decide their partners. Google has failed to demonstrate as to why OEMs are mandated to seek waivers even for non-mobile smart devices.

572. Further, it is irrelevant on the part of Google to claim that anti-fragmentation obligations were imposed before it was dominant in the market(s). As stated earlier, dominant players have a special responsibility under the competition law. A particular conduct when exhibited by a non-dominant player may not be violative of Section 4 of the Act, but the same conduct by a dominant player could be a contravention. Even assuming that anti-fragmentation obligations were prescribed by Google before it became dominant, but it continued them after acquiring dominance. The Commission, thus, finds no strength in the submissions of Google made in this regard.

573. The Commission is of the view that by making the scope of AFA/ ACC all pervasive, Google has created significant disincentives and entry barriers for any enterprise considering distributing a modified version of Android. The agreement renders experimentation or architectural innovation on even a single device within the Android ecosystem commercially infeasible for OEMs, who would then have to forego GMS on the entire portfolio of their Android devices. By putting commercial viability of the company in jeopardy, AFA/ ACC makes even an experiment to assess the market response to Android forks prohibitively costly. This is evident from the reply of Amazon to the DG according to which several leading OEMs including Huawei, LG, HP, Sony, Lenovo and HTC, often cited the risk of losing their access to GMS if they were to work with Amazon ▉▉▉▉ ▉▉▉ as the Fire OS would be viewed by Google as a 'fragmentation' of Android. Google defends this by arguing that fragmentation will adversely impact the integrity of the android ecosystem and not allow for a seamless experience for the user as well as the app developers. Anti-fragmentation is essential for consumers and app developers to enjoy the benefits of the cross-side network effects, as argued by Google. Google argues fragmentation will reduce user experience and raise developer's cost that can have a cascading effect on the ecosystem resulting in "tragedy of commons" resulting in its elimination, as happened with Symbian. The Commission notes that there is no evidence to the counterfactual and moreover, it is not clear that an AFA/ ACC across all devices is required even for

the purported purpose. However, the anti-competitive intent of the agreement cannot be overlooked. This agreement forecloses competition from other perhaps superior versions of android forks; had this restriction not been in place. AFA/ ACC in conjunction with MADA helps Google shield and further entrench its position in certain applications but most importantly Search. AFA/ ACC as a supplementary obligation was an imposition to further its tying objective under MADA.

574. One of the most important issue that comes out is to what extent should a platform operator, in this case Google, set governance rules purportedly to "protect" its ecosystem and should there be limits to this self-assumed role. The Commission observes that such a role assumed by Google, that is undoubtably a dominant entity, harms competition and should be brought to question by a competition authority. Competition is about experimentation, failures, successes and choice, Google's role of a referee for the Android ecosystem is at best paternalistic but its anti-competitive harm cannot remain unchecked as innovative response of competitors is stymied by Google's conduct. Market forces should eventually decide whether an Android fork will succeed and attract OEMs, developers, and users. Besides having effects on the market for OSs, the AFA/ ACC restrict competition in the market for general search services. AFA/ ACC hinder the development of incompatible forks, which could form alternative channels for the distribution of rival search apps.

575. AFA/ ACC has the effect of limiting platform diversity/competition. Google may argue that such diversity can be ensured by developing a completely new platform, and not necessarily by forking the Android platform developed by Google. However, in that case app developers would have to develop apps for the new technology platform from scratch. The source code for AOSP is available for free requiring less investment for a forked Android in comparison to developing a completely new OS. With the strong indirect network effects having firmly entrenched the incumbent's dominance, very few app developers would be ready

to incur such expense with no assured benefit that they expect to derive by multihoming. In such a scenario, both the incentive and ability of an OEM to use a new, competing platform and that of an enterprise to develop and license a new OS to third party OEMs get significantly curbed. On the other hand, as the Investigation notes, one of the benefits of developing an Android fork instead of a full-fledged alternative smart mobile OS would be to have access to the wide pool of apps developed for Google Android. The similarities between Google Android and Android forks mean that many apps can run on Android forks with the need for no or only minor adjustments, which is corroborated by the replies of the third parties such as Mozilla, Paytm to the DG. As rightly noted by the Investigation, AFA/ ACC is classic example of anti-competitive covenant not to compete, whereby it prevents OEMs from developing competing versions of Android.

576. Anti-fragmentation obligations to restrict competition is reinforced by the unavailability of Google's proprietary APIs to fork developers, which makes it more difficult for Android forks to attract app developers or to port apps from Google Android to forks. Thus, Google's conduct also tends to harm consumers, who as a result of Google's interference in the competitive process may see less choice of smart mobile OS ecosystems.

577. But for the AFA/ ACC, platform competition within the larger Android ecosystem could emerge, benefitting users in terms of choice/innovation and app developers, particularly Google's rival apps, in terms of providing them with new distribution channels. Absent the restrictive and all device encompassing scope of AFA/ ACC, large established OEMs could offer at least some of their devices based on a modified Android platform without the GMS suite, where Google's rival app developers could seek to distribute their apps. By preventing entry of such devices, Google eliminates a potential distribution channel for the competing app developers. As the DG report concludes, by hindering the development of Android forks and eliminating a credible competitive threat to Google Android, Google's

conduct helps to maintain and strengthen Google's dominant position in the market for general search services. This is because devices based on Android forks can be used by competing general search services as a channel for the distribution of their search apps and services. By hindering the development of Android forks, Google raises barriers to the entry or expansion of competing search apps and services and, thus, protects its search advertising revenues coming primarily through its general search services.

578. It is Google's contention that AFA/ACC ensures the basic functionality that Android developers expect devices to carry and a predictable developer environment and user experience. This stated objective however does not suffice to explain as to why ensuring such an environment is attempted by Google through imposition of AFA/ ACC on OEMs, when it is equally in the interest of OEMs to develop devices in a way that minimises incompatibility to help the app ecosystem and ensure consistent user experience across devices so that they can effectively compete with other OEMs trying to attract users. Any significant deviation from basic compatibility conditions would increase the app development cost and discourage/disincentivise platform usage for app developers, and a device with limited apps would not be able to attract users, thereby failing to emerge as a commercially viable alternative to compatible Android devices. As the DG report mentions, Android fork developers would have an incentive to set up credible and efficient systems to ensure the correct functioning of apps on devices running their Android fork. They have an incentive to limit incompatibilities so as to facilitate the porting by app developers of their apps from Google Android. Be that as it may, the need to protect Android from 'fragmentation', does not justify the all-device encompassing scope of the AFA/ ACC imposed by Google on device manufacturers, which limits potential innovation, platform competition and choice for users and app developers.

579. Presently, Google is virtually occupying the position of a monopolist in the licensable smart device OSs market. There could be two sources of potential

competitive constraints for Google *i.e.,* from an Android fork OS or an entirely new OS. As observed earlier, developing an Android fork OS is a relatively cheaper and faster option. Moreover, it would be easier to port apps developed for a compatible Android OS to an Android Fork due to significant similarities in the source code. However, the anti-fragmentation obligations restrict the development of an operating system based on Android fork. The restrictions are reinforced by the un-availability of Google Play Services on the Android Forks which increases the cost of rival apps to port their apps to the Android Forks. This also increases the cost of the Android Fork developers as they have to not only convince these app developers but also invest in writing codes for the substitutable APIs.

580. Further, due to serious consequences of the violation of AFA/ ACC *i.e.,* losing access to GMS (including Google Play Store and Google Play Services) as well as losing the revenue from RSAs, the OEMs are not in a position to defy the ant-fragmentation obligations. In other words, these obligations lock the OEMs to the Google controlled Android ecosystem. This operate as a significant entry barrier for the Android Fork developers, as has been demonstrated by the example of Fire OS of Amazon. The commercial success of Android Forks could have resulted in technical and scientific development of the market(s). The Commission is of the view that anti-fragmentation obligations further reinforce the control of Google over Android ecosystem.

581. The expansive coverage of the ant-fragmentation obligations includes not only smart mobile devices but a wide gamut of other smart devices. By virtue of these obligations, Google inhibited the development of alternative Android based OSs for smart TVs, smart watches, smart speakers, *etc.*

582. As discussed elsewhere in this order, Google occupies the most critical search entry points in the smart mobile device ecosystem. The alternative operating system in the form of an Android Fork could have provided an effective

distribution channel for competing general search services also. By imposing these restrictions, Google has protected its dominant position in the general search market as well. In this regard, it is pertinent to note the Google derives most of its revenue from online advertising which is directly dependent on search services offered by Google being the other side in the two-sided business model of Google. As per the available data, for the financial year ended on 31.12.2020, advertising constituted more than 83% of the total revenue of Google (up from 80% in 2019). This clearly reflects the importance of search services in the overall ecosystem of Google.

583. In view of the foregoing analysis, the Commission concurs with the finding of the DG that Google, by making pre-installation of Google's proprietary apps (particularly Google Play Store) conditional upon signing of AFA/ ACC for all android devices manufactured/ distributed/ marketed by device manufacturers, has reduced the ability and incentive of device manufacturers to develop and sell devices operating on alternative versions of Android *i.e.,* Android forks and thereby limited technical or scientific development to the prejudice of the consumers, in violation of the provisions of Section 4(2)(b)(ii) of the Act.

ISSUE VII: Whether Google has abused its dominant position in Play Store by imposing unfair and discriminatory terms and conditions on App developers in violation of the provisions of Section 4 of the Act?

584. It is noted that for distributing an app through Google Play Store, an app developer needs to create an account and agree to the Developers Distribution Agreement (DDA). Further, under the DDA, developers agree to adhere to the Developer Program Policies (DPP). Together, the DDA and DPA are referred to as the '**Developer Terms**'. Google claims that it maintains DDA and DPA to ensure that users are accessing apps that are trusted, safe and that protect user data. During the Investigation, various third-party app developers highlighted to the DG that

these Developer Terms (*i.e.,* Google's Play store policies) are ambiguous, vague, unilateral, biased and arbitrary.

585. Based on submissions of app developers, the DG noted that the terms and conditions of Developer Terms (DPP and DDA) are unilaterally determined by Google and also that amendments in DPP are made by Google and later communicated to the app developers. In this regard, the DG has also referred to Clause 14.1 of the DDA which allows Google to make the changes at any time by sending a notice to the developer.

586. The DG also found that Google places the burden on the app developers to constantly track the Developer Terms and check for changes in its policies. In case an app developer fails to do so, Google assumes consent of the app developer from its continued use of the Google Play Store.

587. The DG further observed that Google imposes a broad limitation of liability clause on app developers which is unfair, arbitrary and one-sided in nature. Google assigns all liability on app developers and absolves, itself of all responsibilities even though the changes are made unilaterally on its instance. This policy was also recently amended by Google. Extracts of the clause prior to and after amendment in Developer Terms are as follows:

> *Prior to 17.11.2020:*
> "*12.1 You expressly understand and agree that Google, its subsidiaries and affiliates, and its licensors shall not be liable to you under any theory of liability for any **direct, indirect, incidental, special consequential or exemplary damages that may be incurred by you, including any loss of data, whether or not Google or its representatives have been advised of or should have been aware of the possibility of any such losses arising.***"
> **(Emphasis added)**
>
> *Post 17.11.2020:*
> '*…13. To the maximum extent permitted by law, you understand and expressly agree that Google, its subsidiaries and affiliates, and its*

licensors will not be liable to you under any theory of liability for any
indirect, incidental, special, consequential, or exemplary damages
that may be incurred by you, including any loss of data, whether or
not Google or its representatives have been advised of or should have
been aware of the possibility of any such losses arising*…'*

(Emphasis supplied)

588. The DG found that Google deleted the word 'direct' from its limitation of liability clause and therefore, prior to 17.11.2020, Google's Developer Terms were so broad that it even excluded liability for any loss or damages that could directly be imputed to Google.

589. The DG further notes that the Developer Terms grant Google unfettered discretion to reject, remove, suspend, limit the visibility of a product on Google Play or reclassify the product from Google Play or from Devices'. Further, Google can unilaterally suspend, remove an app from play store which is explicitly allowed in the Developer Terms under DPP. The DG notes that Google has the discretionary powers to warn an app developer prior to taking any punitive action against it, without the obligation to do so. As a result of the above, Google retains unfettered discretion to choose to use one form of punitive action against one app developer, and far more severe action against another, without any cogent rationale. As per the DG, such treatment of delisting was meted out to One97 Communication Limited's app *i.e.,* Paytm and that too without explaining the specific reason for delisting. The DG has also referred to the submissions of People Interactive (I) Pvt. Ltd. (Shaadi.com), Applied Life Private Limited (Sheroes), *etc.* in this regard.

590. Based on various submissions of third parties, the DG has concluded that even a temporary suspension of an app irreparably injures the reputation as well as good-standing of an app developer and reduces its visibility. Further, such suspension and delisting of an app also results in concern among potential and existing users in perception of the reliability of such apps offerings.

591. While examining the abovementioned conduct of Google from the prism of the provisions of the Act, the DG noted that Google is a dominant player in the market of app stores for Android OS and hence, App developers are super dependent on Google for distribution and reach of their Apps. Further, Google determines the terms and conditions which app developers must abide by in order to be able to distribute their apps or software through the Play Store. DG has further noted that the '*Enforcement Process*' clause of the Developer Term states that the removal or administrative notices from Google, may not indicate each and every policy violation present in the app.

592. Based on its examination, the DG has noted that Google's aforesaid behaviour, amounts to the imposition of an unfair or discriminatory condition, limiting and restricting the technical and scientific development of apps to the prejudice of users, and in the denial of market access by Google in violation of Sections 4(2)(a)(i), 4(2)(b), and 4(2)(c) of the Act.

593. Google, on the other hand, has contested the findings of the Investigation Report and has *inter alia* submitted that,

593.1. Google takes various steps to assist developers in understanding the contents of the DDA and DPP and to ensure that there is no uncertainty or ambiguity in how the policies apply. Google publishes blog posts and "*PolicyBytes*" videos explaining recent policy updates, including the key changes made and feedback received from developers. These summaries and videos are publicly available and written in plain language. Summaries of these updates are also available on the Policy Center webpage. These summaries remain on the Google Policy Center webpage, so developers can always refer back to them, including for historic updates. The webpage that summarises changes to the DDA and DPP also often includes an explanation of the reason for the Amendment. Thus, there is no basis for

the DG to conclude that the DDA and DPP are "*ambiguous, vague, unilateral, biased and arbitrary.*"

593.2. Commenting on the liability clause, Google has averred that the limitation of liability in the DDA is reasonable and appropriate. Google Play allows hundreds of thousands of developers to distribute their apps to billions of users around the world. When operating at this scale, some form of protection is necessary to limit frivolous lawsuits and potential liabilities. Firstly, the clause relates only to indirect liability. Google therefore remains liable for any direct damages to developers. Secondly, the clause only absolves Google of liability "*to the maximum extent permitted by law*".

593.3. Google updates the DDA and DPP from time to time to respond to the changing environment in which it operates, and developers are given sufficient notice and a description of the rationale for updates or changes. When Google updates the terms under which developers use Google Play, Google provides at least 30 days' notice of any proposed changes. This notice period is set out in the DDA.

593.4. Google further avers that it would not be commercially feasible for Google to negotiate with each developer individually prior to making updates to the DDA and DPP.

593.5. Google has also provided the detailed reasoning along with copies of various correspondences with app developers, to justify the action taken against third party app developers, who have made submissions before the DG.

593.6. Google only removes or suspends apps from Google Play where they are non-compliant with the DDA and DPP. The DDA and DPP protect users against unwanted, illegal, and potentially harmful material. Apps which are

removed for non-compliance with the DDA and the DPP are removed because they may expose users to restricted content such as adult content or violence, may infringe on the intellectual property rights of other app developers, may expose users to malware, or where the app developer is not transparent about what data it collects and why.

593.7. In relation to DG's conclusion that Google has 'unfettered discretion' to reject, remove, suspend or limit apps from Google Play without reason, it has been averred that Google reviews apps based on clear and objective publicly available criteria, Google informs developers of the breach when enforcing its policies, developers have the right to appeal any enforcement action taken by Google, *etc.* Further, Google has no incentive to exclude high quality apps that consumers want because that would only drive them away from Google Play and the Android platform.

593.8. The DG did not seek any information from Google as to how Google enforces against violations of the DDA and DPP. Had the DG sought such input, it would have been clear to the DG that there is no basis to assert that Google takes enforcement action '*without any cogent rationale*'.

593.9. The DG has not articulated or demonstrated any anti-competitive effect as a consequence of non-compliant apps being removed from Google Play. Further, the DG has failed to substantiate its claims that the Google Play Policies and the alleged conduct has any actual or potential foreclosure of rivals of Google.

594. The Commission has examined the information available on record including the findings of the DG, third party submissions as well as response filed by Google. The Commission is of the considered view that Google has been able to justify its conduct and no case is made out against Google under Section 4 of the Act, on this count.

Procedural Errors

595. Before concluding, the Commission deems it appropriate to deal with some alleged procedural errors highlighted by Google in its response. Google has averred that the DG's investigation contravened principles of natural justice, due process, and Google's rights to a fair defence. The averments of Google and the Commission's examination thereof along with findings is noted in succeeding paragraphs.

596. Google contended that the DG failed to assess the evidence on record objectively and impartially. Instead, the DG cherry-picked evidence that ostensibly confirmed the Informants' allegations. At the same time, the DG ignored the substantial exculpatory evidence on record. Google has also referred to few third-party submissions to buttress its argument. Google further submits that the Hon'ble Supreme Court of India, in various cases, has stressed the importance of considering all evidence available on record. Accordingly, the DG was duty bound to carry out a fair assessment of all evidence on record and provide cogent reasons for accepting or rejecting its evidentiary value.

597. In this regard, the Commission notes that the submissions made by Google are misdirected. Under the scheme of the Act, the DG is a fact-finding body and not an adjudicatory authority. The DG has given its findings based on evidence considered relevant by it. The DG has also forwarded the entire material and documents collected during the course of investigation. In these circumstances, the issue that the DG ignored "substantial exculpatory" evidence is misconceived as the stage of evaluation of evidence had not arisen at that stage. So long as the DG has forwarded the entire material and evidence collected during investigation to the Commission, no fault can be found or otherwise attributed to the DG as it, being a fact-finding body, has to gather evidence and forward the same to the Commission along with its recommendations. It is always open for a party, if the circumstances so indicate, to contend before the Commission that the evidence

collected by the DG or part thereof is exculpatory. Needless to add, the issue of appreciation of material and evidence takes place at the stage of adjudication before the Commission, and it is for the party concerned to take all pleas including the plea that the evidence gathered during investigation is "exculpatory" and the conclusions of the DG are not well-founded. In this backdrop, the plea is without any merit. Needless to add, evaluation of third-party submissions including the third-party submissions referred to by Google has been done by the Commission at appropriate places in this order.

598. Google further avers that the Preamble to the Act, Section 18 of the Act, Explanation to Section 4 of the Act, and Section 32 of the Act requires assessment of an abuse of dominant position by an undertaking in India. This means that the DG/ the Commission cannot reach a finding of infringement without an independent analysis of competition dynamics in India. Google submits that instead of performing its statutory duty to conduct an independent assessment of India specific evidence submitted by Google, the DG commits a jurisdictional error by using the findings of the EC Android decision, third party claims made before the EC (that are inapplicable to India), and ignoring the vast India-specific direct evidence available on record contesting the DG's findings on alleged foreclosure by preinstallation, and alleged impediment to innovation through the AFA/ ACC. Google has also placed on record few of such instances. Google claims that these examples demonstrate DG's complete abdication of its statutory duty under the Act to carry out an independent analysis of Google's alleged conduct.

599. Google further submits that using a foreign agency's findings without regard to Indian market features is incompatible with the DG's mandate to "*submit an investigation report after investigating facts and making recommendations on the basis of a factual foundation*"[39] The Hon'ble Supreme Court of India has

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[39] Delhi High Court, W.P.(C) 2079/ 2018, *Shri Saurabh Tripathy v. Competition Commission of India,* 10 October 2019

highlighted that in judicial and quasi-judicial processes, *"reasons in support of decisions must be cogent, clear and succinct. A pretence of reasons or "rubber-stamp reasons" is not to be equated with a valid decision-making process."*[40] The Hon'ble Delhi High Court has further noted that *"a blatant copy-paste* [...] *demonstrates a clear non-application of mind."*[41]

600. In this regard, the Commission notes that the plea is premised on misunderstanding of the scheme of the Act. As pointed out, the DG is a fact-finding body and has to gather evidence and forward the same to the Commission. The process of adjudication starts post-submission of investigation report. The propositions advanced by Google have no relevance in the present context and it needs no reiteration that an adjudicatory body has to return its findings independently, in light of evidence and material available on record. As such, it is not necessary to delve into the aspect any further as the Commission has examined the evidence independently and findings have been arrived at on the basis of material on record. Having said that, it is clarified that nothing prevents the authorities from looking at the decisions given by counterpart agencies if the issues involved in the domestic proceedings are similar to those involved in other jurisdictions. This is, however, not to suggest that the findings can be returned on the basis of such rulings. In this view of the matter, the Commission is of the opinion that so long as the adjudication has been done independently on the basis of material and evidence on record, the grievance raised by Google is more imaginary than real and the question of "rubber-stamping" the reasons or rulings delivered by foreign agencies does not arise.

601. Google further avers that the DG performs a fact-finding function under the Act. As observed by the Hon'ble Delhi High Court, the DG's legislative mandate is to "*submit an investigation report after investigating facts and making*

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[40] Supreme Court of India,9 SCC 496, *Kranti Associates Private Limited v. Masood Ahmed Khan,* 8 September 2010
[41] Delhi High Court, W.P.(CRL) 1829/2020, *Gopal Gupta v/ Amit Pal Singh,* 6 August 2021

recommendations on the basis of a factual foundation" that is based on *"empirical investigation regarding the usual practice in trade".*[42] This mandate requires the DG to test the Informants' allegations by undertaking an objective, empirical investigation. An investigation is irremediably flawed if the DG collects evidence and data with the objective of confirming the allegations or by reference to predetermined conclusions. Further, the Commission's *prima facie* order directed the DG to conduct a *"detailed empirical* validation*"* to ascertain whether: (a) Android users have considerable freedom to customize their phones and install competing apps and move or disable preinstalled apps; and (b) *"the stipulations in the ACC are necessary to serve the legitimate purpose of preventing fragmentation.*

602. The Commission finds it difficult to accede to the submissions made by Google. At the outset, the Commission notes that there was no "direction" of the Commission to the DG to conduct any empirical study, as contended by Google. The Commission merely observed that certain facts as mentioned in para 22 of the order directing investigation required empirical validation. This is, however, not to be suggested, much less equated, with a direction to conduct any empirical study. If the data and evidence gathered during investigation are sufficient to validate those points, it is futile to argue that no separate and dedicated empirical survey was conducted to validate the same.

603. During the course of Investigation, the DG issues probe letters to various parties including the Informant, Opposite Parties and third parties to gather information and documents. The whole investigative process is oriented to collect facts, data and evidence from the relevant stakeholders to examine or validate the allegations. It is not in dispute that the same procedure was also adopted by the DG in the present case. Empirical validation can happen through inviting response of third parties or the relevant stakeholders. Empirical validation cannot be

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[42] High Court of Delhi, W.P. (C) No. 2079 of 2018, *Shri Saurabh Tripathy v. Competition Commission of India & Anr.*, October 10, 2019

conflated with a market survey of the entire universe to ascertain the consumer preference or biases. Investigations are statutory in nature and outcomes are based on collection of facts and evidence.

604. The Commission further notes that the DG has presented sufficient material to substantiate that due to widespread prevalence of *status quo* bias (as elaborated subsequently in this order), the users do not download a competing app in the presence of a pre-installed app with similar functionality. Google also argues that the DG has not done empirical study to ascertain whether the stipulations in the ACC are necessary to serve the legitimate purpose of preventing fragmentation. The Commission has examined this aspect in detail based on the evidence available on record and the same has been discussed appropriately in this order. It is neither the scheme of the Act nor otherwise any rule of thumb that the DG is obligated to conduct empirical study to examine each and every set of allegations. If the material, data and evidence gathered during investigation are found to be sufficient, there is no occasion or reason for the DG to undertake surveys to empirically validate every bit of allegation. As demonstrated in this order, the data itself can validate the consumer preference or bias. Surveys can be indicative or misleading on occasions, data cannot. Accordingly, the contentions of Google are devoid of any merit and thus rejected.

605. Google has further submitted that the DG asked leading questions from third parties, showing pre-disposition and bias. Google avers that the Hon'ble Supreme Court of India has held a leading question to be one which "*indicates to the witnesses the real or supposed fact which the prosecutor expects and desires to have confirmed by the answer*."[43] Further, it has been averred that the Hon'ble Supreme Court has also held leading questions to be illegal and incurable and to violate the right to fair trial enshrined under Article 21 of the Constitution of India.

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[43] Supreme Court of India, Criminal Appeal No. 326 of 1993 with Criminal Misc. Petition No. 6273 of 1992, *Varkey Joseph v. State of Kerala*, April 27, 1993

606. Google claims that the DG showed its pre-disposition and bias by posing its conclusions as questions to third parties. Posing such leading questions makes the fact-finding process a fundamentally skewed and uneven exercise. Google has placed on record some questions asked by the DG and alleged them to be leading in nature. As per Google, the leading questions are not merely examples of the skewed approach applied by the DG but have the fatal flaw of being the core basis of the decision of the DG itself.

607. The aforesaid plea is based on wrong understanding of the nature of the proceedings before the Commission. As a market regulator, proceedings before the Commission are inquisitorial and *in rem* in nature. The Hon'ble Supreme Court of India in the case of *Competition Commission of India* v. *Steel Authority of India Limited*, CIVIL APPEAL NO.7779 OF 2010 decided on 09.09.2010 has expressly noted that the Commission performs various functions including regulatory, inquisitorial and adjudicatory. In this view of the matter, the plea raised by Google and the judgments relied in the context of adversarial setting are of no assistance. The inquisitorial proceedings, by very nature, require the authority to be actively involved in inquiry unlike the case of an adversarial or accusatory system, in which the role of the authority is primarily that of an impartial referee between the competing parties. Google has not been able to show any prejudice, much less any miscarriage, due to the procedure adopted by the DG. Google has been given sufficient opportunity to rebut the evidence gathered by the DG and to file its objections and suggestions to the investigation report prepared by the DG.

608. Google avers that the DG relies on statements of two professors and claims that neither of *these* professors have any prior experience in the fields of consumer behaviour, economics, or competition law. Google has submitted that these so-called expert opinions cannot, therefore, be considered probative.

609. Without commenting on the expertise or experience of the professors whose opinions were obtained by the DG, the Commission does not deem it appropriate

to consider the same for the present inquiry and the same has not been read in evidence for any purpose whatsoever.

Conclusion

610. Google's entire business operates around search services which are offered free to users (through Search, Maps, Chrome, YouTube, *etc.*). When users interact with these free services, Google collects various data points from these interactions which is then monetized through online advertisements. This is corroborated from the fact that advertising revenue constitutes more than 83% of the global revenues for Google for the year 2020. Even in India, the advertisement revenue of Google constitutes the bulk of its revenue and other revenue streams are relatively miniscule. With the advent of mobile revolution, it become critical for Google to protect its position in search services which lies at the core of its internet offerings. The contribution of search queries *via* mobile devices, as discussed above, is a testament to the same. On smart mobile devices, users can access Google's search services *via* various entry points viz. Search app, search widget, chrome and other browsers, assistant, *etc.*

611. MADA, AFA/ ACC and the RSAs impose various restrictions on the signatory OEMs. The Commission is of the view that various covenants under these agreements cannot be examined in silos *i.e.,* one agreement at a time. These agreements operate in tandem and the interplay between these agreements has manifested multiple anti-competitive outcomes in the markets, as detailed above. The interdependence of these agreements is also evidenced from the fact that in order to enter into a MADA, an OEM must be a signatory of AFA/ ACC and thus, abide by its terms. Thus, if an OEM wants to pre-install Play Store (and other apps in the GMS), it must execute and abide by the terms of both the AFA/ ACC and MADA. Further, in order to receive revenue share under the RSAs, the OEMs have to be a signatory of MADA and thus, also of AFA/ ACC.

612. MADA assured that the most prominent search entry points *i.e.,* Search app, widget and Chrome browser are pre-installed on Android devices, which accorded significant competitive edge to Google's search services over its competitors. Further, Google also secured significant competitive edge over its competitors, in relation to its another revenue earning app *i.e.,* YouTube in the Android devices. The competitors of these services could never avail the same level of market access which Google secured and embedded for itself through MADA. Network effects, coupled with status quo bias, create significant entry barriers for competitors of Google to enter or operate in the concerned markets. AFA/ ACC guaranteed that distribution channels for competing search services is altogether eliminated by prohibiting OEMs from offering devices based on Android forks. It ensured that OEMs are not able to develop and/ or offer devices based on forks, which are outside the control of Google. In the absence of these restrictions, the competing search services could have availed of sufficient distribution channels in partnership with OEMs, offering devices based on forks. Similarly, the Android fork developers also could not find distribution channels for their fork OSs as almost all the OEMs were tied with Google. Simultaneously, RSAs helped Google to ensure exclusivity for its search services to the total exclusion of competitors. The combined results of these agreements guaranteed a continuous access to search queries of mobile users which helped not only in protecting the advertisement revenue but also to reap the network effects through continuous improvement of services, to the exclusion of competitors. With these agreements in place, the competitors never stood a chance to compete effectively with Google and ultimately these agreements resulted in foreclosing the market for them as well as eliminating choice for users.

613. The Commission is of the firm view that the markets should be allowed to compete on merits and the onus is on the dominant players (in the present case, Google) that its conduct does not impinge this competition on merits. By virtue of the agreements discussed above, Google ensured that users continue to use its search services on mobile devices which facilitated un-interrupted growth of

advertisement revenue for Google. Further, it also helped Google to further invest and improve its services to the exclusion of others. Thus, the underlying objective of Google in imposing various restrictions *via* MADA, AFA/ ACC and RSAs was to protect and strengthen its dominant position in general search services and thus, its revenues *via* search advertisements.

614. The Commission concludes that,

614.1. mandatory pre-installation of entire GMS suite under MADA (with no option to un-install the same) and their prominent placement amounts to imposition of unfair condition on the device manufacturers and thereby in contravention of the provisions of Section 4(2)(a)(i) of the Act. These obligations are also found to be in the nature of supplementary obligations imposed by Google on OEMs and thus, in contravention of Section 4(2)(d) of the Act.

614.2. Google has perpetuated its dominant position in the online search market resulting in denial of market access for competing search apps in contravention of Section 4(2)(c) of the Act.

614.3. Google has leveraged its dominant position in the app store market for Android OS to protect its position in online general search in contravention of Section 4(2)(e) of the Act.

614.4. Google has leveraged its dominant position in the app store market for Android OS to enter as well as protect its position in non-OS specific web browser market through Google Chrome App and thereby contravened the provisions of Section 4(2)(e) of the Act.

614.5. Google has leveraged its dominant position in the app store market for Android OS to enter as well as protect its position in OVHPs market through YouTube and thereby contravened provisions of Section 4(2)(e) of the Act.

614.6. Google, by making pre-installation of Google's proprietary apps (particularly Google Play Store) conditional upon signing of AFA/ ACC for all android devices manufactured/ distributed/ marketed by device manufacturers, has reduced the ability and incentive of device manufacturers to develop and sell devices operating on alternative versions of Android *i.e.,* Android forks and

thereby limited technical or scientific development to the prejudice of the consumers, in violation of the provisions of Section 4(2)(b)(ii) of the Act.

ORDER

615. In view of the foregoing analysis, the Commission delineates the following relevant market(s) in the present matter:

   a. Market for licensable OS for smart mobile devices in India
   b. Market for app stores for Android smart mobile OS in India
   c. Market for general web search services in India
   d. Market for non-OS specific mobile web browsers in India
   e. Market for online video hosting platform (OVHP) in India

616. The Commission holds Google to be dominant in all these relevant markets. Further, Google is also found to have abused its dominant position in contravention of the provisions of Sections 4(2)(a)(i), Section 4(2)(b)(ii), Section 4(2)(c), Section 4(2)(d) and Section 4(2)(e) of the Act, as already discussed in the earlier part of this order.

   Remedies

617. Accordingly, in terms of the provisions of Section 27 of the Act, the Commission hereby directs Google to cease and desist from indulging in anti-competitive practices that have been found to be in contravention of the provisions of Section 4 of the Act, as detailed in this order. Some of the measures, in this regard, are indicated below:

   617.1. OEMs shall not be restrained from (a) choosing from amongst Google's proprietary applications to be pre-installed and should not be forced to pre-install a bouquet of applications, and (b) deciding the placement of pre-installed apps, on their smart devices.

   617.2. Licensing of Play Store (including Google Play Services) to OEMs shall not be linked with the requirement of pre-installing Google search services,

Chrome browser, YouTube, Google Maps, Gmail or any other application of Google.

617.3. Google shall not deny access to its Play Services APIs to disadvantage OEMs, app developers and its existing or potential competitors. This would ensure interoperability of apps between Android OS which complies with compatibility requirements of Google and Android Forks. By virtue of this remedy, the app developers would be able to port their apps easily onto Android forks.

617.4. Google shall not offer any monetary/ other incentives to, or enter into any arrangement with, OEMs for ensuring exclusivity for its search services.

617.5. Google shall not impose anti-fragmentation obligations on OEMs, as presently being done under AFA/ ACC. For devices that do not have Google's proprietary applications pre-installed, OEMs should be permitted to manufacture/ develop Android forks based smart devices for themselves.

617.6. Google shall not incentivise or otherwise obligate OEMs for not selling smart devices based on Android forks.

617.7. Google shall not restrict un-installing of its pre-installed apps by the users.

617.8. Google shall allow the users, during the initial device setup, to choose their default search engine for all search entry points. Users should have the flexibility to easily set as well as easily change the default settings in their devices, in minimum steps possible.

617.9. Google shall allow the developers of app stores to distribute their app stores through Play Store.

617.10. Google shall not restrict the ability of app developers, in any manner, to distribute their apps through side-loading.

618. The Commission also directs that the anti-competitive clauses of the respective agreements (MADA, AFA/ACC and RSAs), as identified in this order, shall not be enforced by Google *w.r.t.* it's agreements with OEMs in India, with immediate effect.

619. Google, however, is allowed three months from the date of receipt of this order to implement necessary changes in its practices and/or modify the applicable agreements and to submit a compliance report to the Commission in this regard.

Imposition of Penalty

620. The Commission has also considered the issue of imposition of monetary penalty upon Google and has given it a thoughtful consideration thereon. It is evident that the legislature has conferred wide discretion upon the Commission in the matter of imposition of penalty. Under the provisions contained in Section 27(b) of the Act, the Commission may impose such penalty upon the contravening parties as it may deem fit which shall be not more than ten per cent of the average of the turnover for the last three preceding financial years, upon each of such person or enterprises which are parties to such agreement or abuse.

621. Google in its submissions has elucidated various mitigating factors/reasons against the imposition of any penalty on Google which *inter alia* includes (a) the uncontested benefits to Indian consumers, OEMs, and app developers arising from Google's licensing practices, (b) absence of any evidence of competitive or consumer harm, (c) lack of any anticompetitive intent, and (d) novelty of the issues taken up in the investigation which are first of their type.

622. The Commission notes that the objective behind imposition of penalties is: (a) to reflect the seriousness of the contravention; and (b) to ensure that the threat of

penalties will deter the parties concerned from violating the provisions of the Act. Therefore, the quantum of penalties imposed must correspond with the gravity of the offence and the same must be determined after having due regard to the mitigating and aggravating circumstances of the case. In the present case, the Commission does not find any reason to take a lenient view. It cannot be denied that Indian consumers, OEMs and app developers have been deprived of choice due to anti-competitive practices of Google in the relevant markets. The plea that there is no consumer or competition harm is not tenable as the practices of Google adumbrated in the order are *inter alia* aimed at collecting troves of consumer data that denies its rivals the scale and user data that they need to monetise on the search advertisement market and grow to become a credible alternative for users and a competitive threat to Google.

623.　The plea related to lack of any anticompetitive intent as well as that of novelty of the issues is also completely misdirected. Since, the enforcement of provisions of Section 4 of the Act in the year 2009, every dominant entity is required to adhere to the law of the land and ensure its conduct remains in compliance of the same. The prohibitions laid down in the Act are straight forward and any abuse of dominant position in terms of imposition of unfair conditions, denial of market access, leveraging, imposition of supplementary obligations *etc.,* is prohibited. Google, after imposing unfair conditions on OEMs as well as undertaking other conducts found violative of Section 4 of the Act, cannot take a plea that it lacked anti-competitive intent. The dominant undertakings are expected to ensure their conduct in comport with the provisions of the Act. Thus, the pleas raised by Google are devoid of any merit and the same are rejected.

624.　In this connection, it would also be apposite to refer to the decision of the Hon'ble Supreme Court of India in *Excel Crop Care Limited v. Competition Commission of India & Anr.,* Civil Appeal No. 2480 of 2014 wherein the Hon'ble Supreme Court considered the issue as to whether penalty under Section 27(b) of the Act should be imposed on the total/ entire turnover of the offending company or only

on "relevant turnover". The Hon'ble Supreme Court opined that adopting the criteria of 'relevant turnover' for the purpose of imposition of penalty will be more in tune with the ethos of the Act and the legal principles which surround matters pertaining to imposition of penalties. While reaching this conclusion, the Hon'ble Supreme Court recorded the following reasons:

> *"…When* the *agreement leading to contravention of Section 3 involves one product, there seems to be no justification for including other products of an enterprise for the purpose of imposing penalty. This is also clear from the opening words of Section 27 read with Section 3 which relate to one or more specified products. It also defies common sense that though penalty would be imposed in respect of the infringing product, the 'maximum penalty' imposed in all cases be prescribed on the basis of 'all the products' and the 'total turnover' of the enterprise. It would be more so when total turnover of an enterprise may involve activities besides production and sale of products, like rendering of services etc. It, therefore, leads to the conclusion that the turnover has to be of the infringing products and when that is the proper yardstick, it brings home the concept of 'relevant turnover'…"*

625. Following the parameters set by the Hon'ble Supreme Court's as mentioned *supra*, the Commission now proceeds to determine relevant turnover and thereafter, would calculate appropriate percentage of penalty based on facts and circumstances of case.

626. In this regard, Google has averred that only the revenues generated from the allegedly infringing product/service should be taken into account when determining the amount of the fine. Accordingly, it was contended that only the revenues from usage of Google Search or YouTube through access points that are addressed in MADA or RSA and implemented on devices subject to the contested agreements (and only after Google allegedly became dominant) could potentially be treated as relevant turnover for the calculation of penalty. It has been further averred that revenue from use of Google Search and YouTube on non-MADA devices are unrelated to the alleged abuses and should not form part of the relevant turnover for the purposes of calculating any fine. Further, it has been submitted

that its conduct did not affect the position of Play or associated Play revenues. Thus, Google asserts that Play's revenues cannot be considered as directly or indirectly relevant to the infringement and should be excluded from calculation of any fine.

627. The Commission has carefully considered the submissions made by Google on the issue of relevant turnover.

628. In this regard, the Commission notes that to determine relevant turnover in relation to technology platforms, such as one operated by Google, it is important to appreciate the business model, incentives of the platforms and their revenue streams. As already stated, Google's entire business is pivoted around search services which are offered 'free' to users (through Search, Maps, Chrome, YouTube, *etc.*). This free side of the platform is used to collect data which is then monetized through online advertisements. This is corroborated from the fact that advertising revenue constitutes more than 83% of the global revenues for Google for the year 2020. Even in India, the advertisement revenue of Google constitutes the bulk of its revenue and other revenue streams are relatively miniscule. By virtue of its agreements with OEMs Google has leveraged its dominant position in the app stores market to ensure that users continue to use its search services or mobile devices which facilitated uninterrupted growth of the advertisement revenue for Google. As already stated, the underlying objective of Google in imposing various restrictions *via* MADA, AFA/ ACC and RSAs was to protect and strengthen Google's dominant position in general search services and thus, its advertisements revenues. These agreements, make the Android OS ecosystem a vehicle to channel user data flows into Google's main product, its advertising platform. Google through such anti-competitive tying agreements gains a dominant control of online user information and adversely affect the financial viability of potential competitors that might use such applications as a potential base for their own advertising platform to challenge Google. Thus, to argue that the revenue from the verticals where competition harm has been identified should

only be considered for the computation of relevant turnover will be ignoring the ad funded business model and the multisided, multiproduct Android ecosystem. Thus, restrictions such as MADA, AFA/ ACC and RSAs enable Google to link ecosystem participants such as advertisers and website/app visitors and consequently extract more surplus value from the entire ecosystem by selling information on users to advertisers. Therefore, restricting revenue from usage of Google Search or YouTube through access points that are addressed in MADA, or RSA would not appropriately capture the interdependent and integrated nature of Google's ecosystem wherein one product/ services reinforce multiple other products/ services. This approach suggested by Google is wholly inappropriate for multi-sided platforms.

629. Moreover, as already explained in this order, various products of Google work on the basis of network effects *i.e.,* with the increase in numbers of users on its platform, the attractiveness of the platform/ products for the advertisers increases multi-fold. In such platforms, not only two/ multi sides are intricately intertwined and interwoven with each other, but the products/ services offered by the platform operator (Google in this case) derive strength from each other due to economies of scope and scale. Replicating such an ecosystem becomes extremely difficult for a new entrant. Competition in such a scenario is amongst ecosystems and not just the verticals or independent services. In such a case, the entire platform has to be taken as one unit to account for the cross-market externalities between platform sides, and revenue generated therefrom has to be taken into account for determining quantum of penalty.

630. In relation to revenue data, Google in its submissions on quantum of penalty referred to its submission made on 17.12.2021 wherein it furnished turnover from GMS apps in India. However, the Commission noted that the said data was incomplete in multiple aspects and was subject to multiple caveats/ disclaimers. Accordingly, *vide* its order dated 19.09.2022, the Commission directed Google to resubmit the data after addressing various shortcomings as mentioned therein.

Google was also directed to submit revenue *generated or arising/accruing from* India or *attributable to* services *delivered* in India without any caveats whatsoever. Further, Google was also directed to submit its details of turnover and profit generated or arising/accruing from its entire business operations in India (including its group entities), for the three preceding financial years. It was also clarified that the details requisitioned should include revenue and profit generated or arising/accruing from India or attributable to services delivered in India irrespective of the global nature of the underlying agreements/transactions or jurisdiction where the turnover is booked. Google filed its reply to the said order of the Commission on 11.10.2022.

631. Form the perusal of the submissions by Google, the Commission notes that Google has made significant upward revisions in the financial data presented *vide* its submission dated 11.10.2022 *vis-à-vis* that of 17.12.2021. However, this data is still subject to multiple caveats, disclaimers, assumptions, exclusions, *etc.* Google while presenting the instant data has again qualified the same with various caveats *viz.* (a) ███████████████████████████

632. ████████████████████████████████████

[redacted]

633. Even the data in respect of revenue generated or arising/ accruing from their entire business operations in India, has been caveated with the following:

[redacted]

634. The Commission further notes that the sum total of revenue of various segments/ heads in India as given by Google for the FY 2020-21 is [redacted] whereas, its total revenue from entire business from India operations for FY 2020-21 is Rs. [redacted] approx. *i.e.,* the sum total of various heads is more than the total revenue for FY 2020-21. This clearly shows that data has not been presented by Google in a reliable manner. In this regard, it is observed that the Commission has given an unambiguous direction to Google that the data should be *supported by certificates of Chartered Accountants.* However, Google has not provided the same and rather has provided certificates of its own officers.

635. The Commission takes a serious note of such glaring inconsistencies and wide disclaimers in presenting various data points by Google. The Commission is constrained to observe that despite commanding enormous resources, Google has failed to provide the data in the manner sought by the Commission despite grant of sufficient time, as sought by it. Be that as it may, in the interest of justice and with an intent of ensuring necessary market correction at the earliest, the Commission decides to proceed to quantify the provisional monetary penalties on the basis of the data presented by Google.

636. As already stated, the sum total of revenue of various segments/ heads for the FY 2021-21 is higher than the total turnover of Google for the said financial year. Thus, taking a conservative approach at this stage, the Commission decides to take the lower revenue data, as submitted by Google *vide* its submission dated 11.10.2022, as relevant turnover for computation of quantum of penalty.

637. Now, coming to determination of an appropriate amount of penalty to be imposed, the Commission has given a thoughtful consideration to the same including the averments and submissions made by Google. As against the claims of Google, the Commission does not find any mitigating factor in the present matter which would warrant a reduction in the penalty computation, rather there are aggravating factors *viz.* the conduct on the part of Google is continuing unhindered at least since 2011 *i.e.,* more than 12 years. However, in terms of Section 27(b) of the Act, the Commission can impose penalty on average of the turnover for the last three preceding financial years *i.e.,* effectively restricted to one-year turnover of the infringing entity.

638. Accordingly, the Commission finds it appropriate to impose a penalty on Google @ 10% of its average of the relevant turnover, as determined above, for the last three preceding financial years 2018-19, 2019-2020 and 2020-21, as provided by Google. Accordingly, the computation of the quantum of penalty imposed on Google is set out below:

(in INR crore)

Turnover for FY 2018-19	Turnover for FY 2019-20	Turnover for FY 2020-21	Average turnover for three preceding financial years	Penalty @ 10% of the average turnover
10,365.32	13,025.10	16,742.52	13,377.65	1337.76

639. Consequently, the Commission imposes a penalty of Rs. One Thousand Three Hundred Thirty-Seven crore and Seventy-Six lakhs only upon Google for violating Section 4 of the Act. Google is directed to deposit the penalty amount within 60 days of the receipt of this order.

640. It is made clear that the aforesaid penalty is provisional and subject to revision on Google furnishing the requisite financial details and supporting documents as sought by the Commission *vide* order dated 19.09.2022. Google is directed to do the needful within a period of 30 days from the receipt of this order. It is further clarified that the basis of determination of penalty *i.e.,* relevant turnover as well as appropriate percentage thereof has already been decided *vide* this order. However, the actual quantum of penalty may undergo a revision based on revenue data to be submitted by Google and to that extent only, the present penalty is provisional.

641. Before parting, the Commission deems it appropriate to deal with the request of Google seeking confidentiality over certain documents / data / information filed by them under Regulation 35 of the General Regulations, 2009 (as amended). Considering the grounds given by Google for the grant of confidential treatment, the Commission grants confidentiality to such documents / data / information

in terms of Regulation 35 of the General Regulations, 2009, subject to Section 57 of the Act, for a period of three years from the passing of this order. It is, however, made clear that nothing disclosed in the public version of this order shall be deemed to be confidential or deemed to have been granted confidentiality, as the same have been used and disclosed for purposes of the Act in terms of the provisions contained in Section 57 thereof. Accordingly, the Commission directs that two versions of the present order may be issued *i.e.,* public version shall be served upon the parties and a confidential version shall be shared with Google through members of the confidentiality ring. The public version of the order shall be prepared keeping in mind the confidentiality requests and the provisions of Section 57 of the Act read with Regulation 35 of the CCI General Regulations, 2009 (as amended). For convenience, it is directed that the confidential version of this order may be provided to such ring members/ individuals through one of the ring members, who may then share the same with the other ring members nominated by Google.

642. The Secretary is directed to forward certified copies of the present order to the parties, in terms of the directions above.

Sd/-
(Ashok Kumar Gupta)
Chairperson

Sd/-
(Sangeeta Verma)
Member

Sd/-
(Bhagwant Singh Bishnoi)
Member

New Delhi
Date: 20.10.2022