

Market Study Report on Mobile OS and Mobile App Distribution (Summary)

**February 2023
Japan Fair Trade Commission**

Purpose

- Due to the worldwide spread of COVID-19, the digitalization of the economy has progressed further. **Smartphones are the main means by which people access various digital contents and services.**
 - **Smartphones have become a daily necessity for consumers**, and the usage rate (all ages) is **95.3%** (2021)
 - The usage time of mobile devices such as smartphones (all ages, weekdays) also increased from **37.6 minutes** (2012) to **110.0 minutes** (2021).
- In order to provide services through apps on smartphones or products used in conjunction with smartphones, **access to mobile OS and app distribution routes such as app stores is essential.**
- **It is very important to understand the actual state of competition in mobile OS and app distribution routes from the viewpoint of improving the competitive environment** of the market for apps provided on smartphones and the market for products used in conjunction with smartphones, as well as the mobile OS market and the app distribution service market.

The JFTC decided to conduct **a market study into the mobile OS market and the app distribution service market.**

Method

Questionnaire survey

For app developers

The JFTC conducted a web survey for app developers (whose contact information was obtained) providing apps on app stores

Period : Mar 4th-24th, 2022
Survey subjects : 9,562
Respondents : 596 (response rate 6.2%)

For consumers

The JFTC conducted a web survey for consumer monitors (smartphone users) of a research company

Period : Feb 7th-16th, 2022
Respondents : 2,000
(1,000 iOS users and 1,000 Android users)

Voluntary interview

- The JFTC interviewed 23 businesses operators including smartphone manufacturers and app developers.
- The JFTC received answers to written questions from Google and Apple.
- The JFTC interviewed 3 experts who have specialized knowledge.

International cooperation

The JFTC exchanged opinions with the Australian Competition and Consumer Commission, the UK Competition & Markets Authority and the Directorate-General for Competition of the European Commission.

- On smartphones(*), **mobile ecosystem has a layered structure consisting of smartphone device, mobile OS, app store and native apps** to connect smartphone users and developers.

(*) In this report, a “smartphone” is a device with a screen size of less than 7 inches.

<layer>

Native apps

An application to be installed and used on a specific mobile OS. Various developers, including Google and Apple, develop and provide native apps.

(Web apps are developed using web technology. Web apps differ from native apps in that they are not installed on smartphones.)

App store

A platform for delivering native apps. App stores are mainly operated by Google and Apple. Only native apps that have passed the review by the app store operator will be posted on the app store.

Mobile OS

An operating system developed for and installed on smartphones(*). Mobile OSs are mainly developed by Google and Apple.

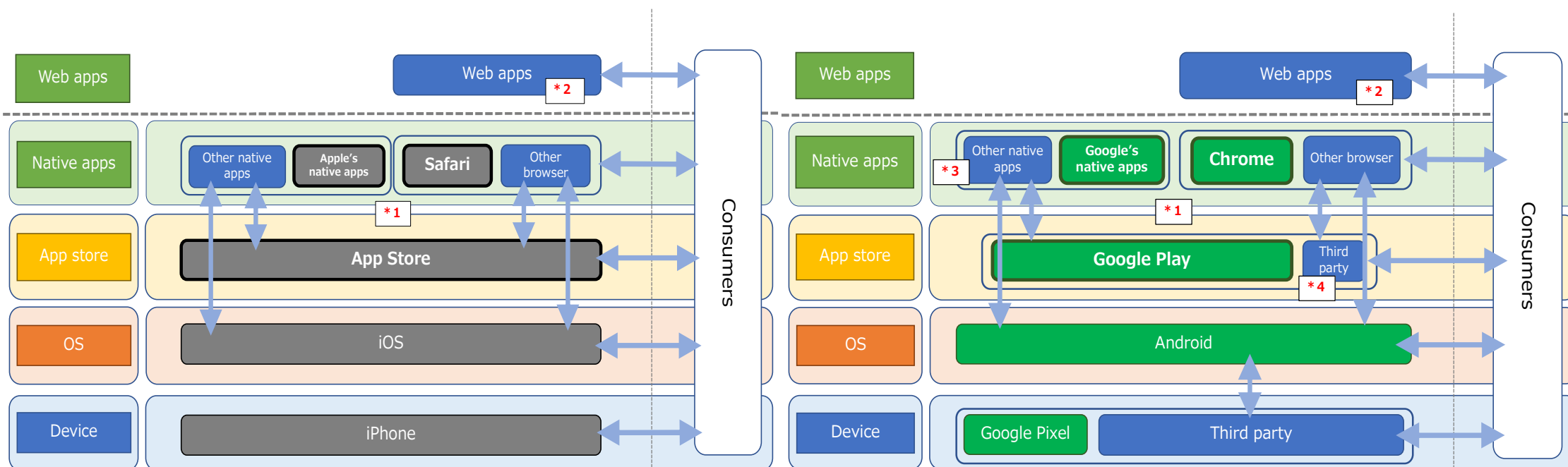
(*) Basic software necessary for realizing basic computer operations such as entering characters and saving data.

Device

A device which has advanced information processing functions as well as the conventional mobile phone functions such as calling and communication. Users can add additional functions on their devices by obtaining applications. Various companies, including Google and Apple, develop and provide smartphone devices.

- In the device layer, smartphone manufacturers including Google and Apple are suppliers, and consumers using smartphone devices are customers.
- In the mobile OS layer, mobile OS providers (Google and Apple) are suppliers, and app developers and consumers who use the mobile OS are customers respectively(*).
- In the app store layer, app store operators (mainly Google and Apple) are suppliers, and app developers and consumers who use the app stores are customers respectively.
- In the application layer (native apps and web apps), in addition to Google and Apple, many other app developers are suppliers, and the consumers who use the apps are customers.

(*) As for Android, smartphone manufacturers selling smartphone devices with a mobile OS are also customers of the mobile OS.



(* 1) The App Store, Safari, and some Apple's native apps are pre-installed on the device.

(* 2) In fact, consumers access web apps via the browser.

(* 1) Google Play, Chrome and some Google's native apps are pre-installed on the device.

(* 2) In fact, consumers access web apps via the browser.

(* 3) Some other native apps can be sideloaded via the browser.

(* 4) Third-party app stores are either pre-installed on the device or sideloaded via the browser.

- In this report, the device layer is regarded as the device market, the mobile OS layer is regarded as the mobile OS market, the application layer is regarded as the app market(*1). Also, distribution(*2) of apps or web services via app stores or browsers is regarded as the app distribution service market.

(*1) Together with the app market, the market for products used in conjunction with smartphones is regarded as the "app market and other smartphone-related markets."

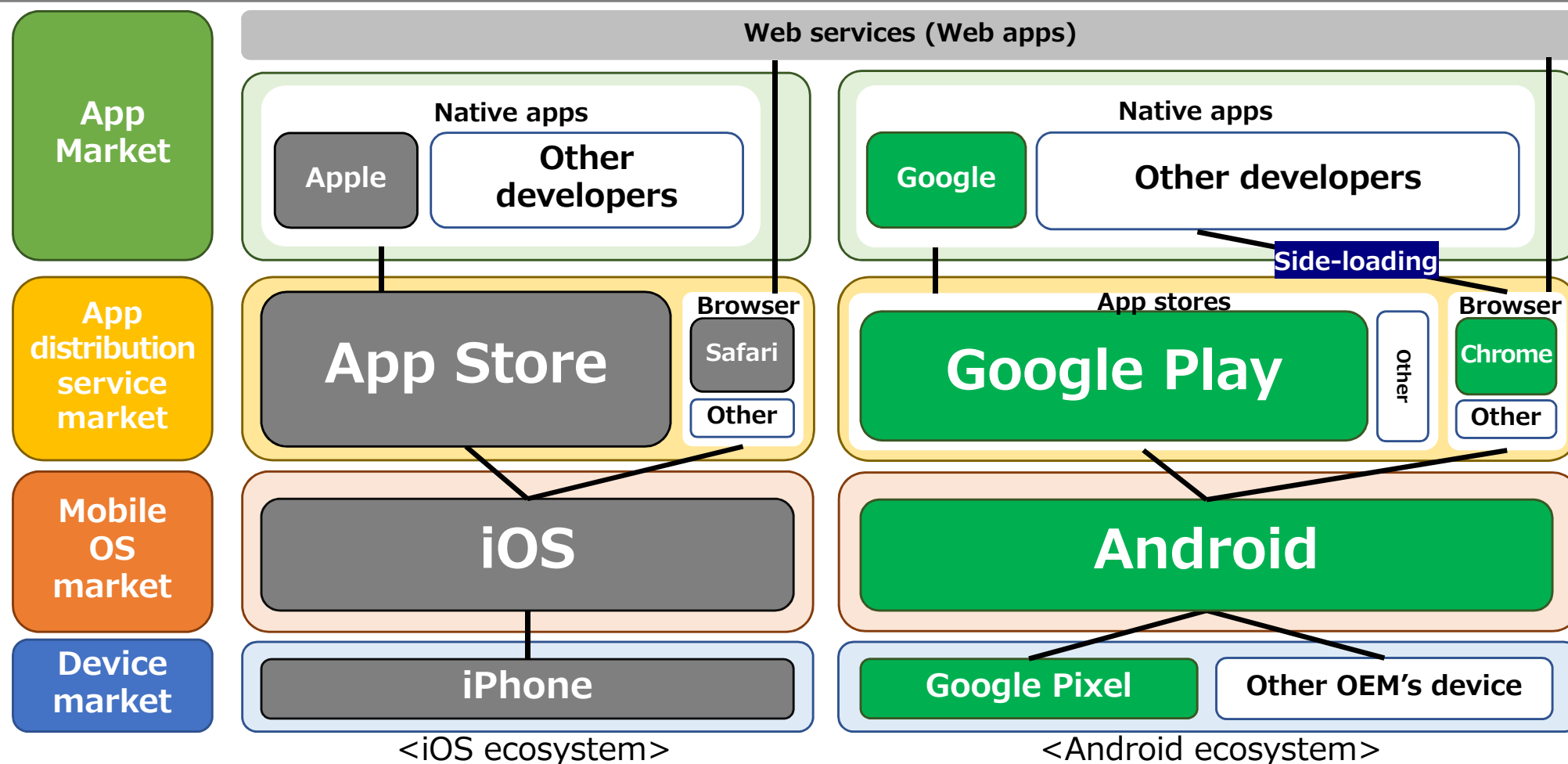
(*2) The app distribution service market covers the following, which are methods for consumers to obtain or use apps from app developers in order to access digital contents and services on smartphones.

(A) Downloading native apps from Google Play/App Store

(B-1) Downloading native apps from third party app stores other than Google Play/App Store

(B-2) Downloading native apps from outside the app store, such as via the browser (Side-loading)

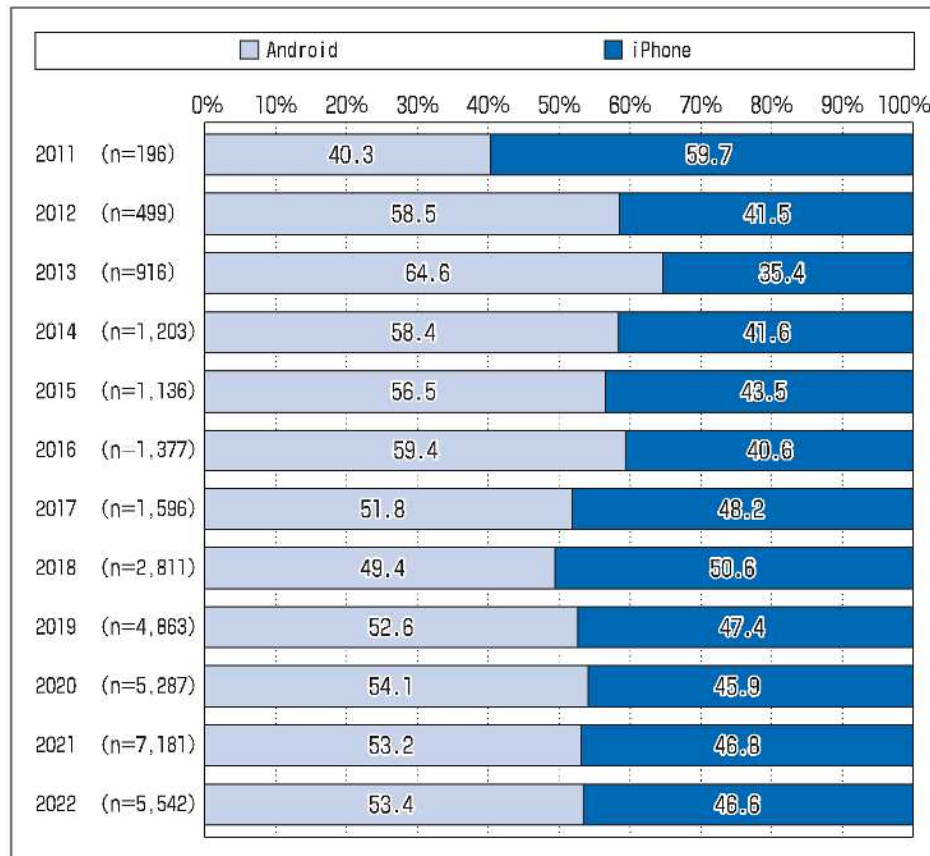
(C) Using web services via the browser



Mobile OS

➤ Oligopoly of Google's Android and Apple's iOS.

Market share of mobile OS in Japan
(Based on the number of devices)



Source: NTT DOCOMO Mobile Society Research Institute White Paper on Mobile Society (2022 edition)

Market share of mobile OS in Japan
(Based on page views)



Source: Statcounter Mobile Operating System Market Share Worldwide (Dec 2022)
<https://gs.statcounter.com/os-market-share/mobile/japan/#monthly-200901-202212>

* The share in Statcounter is measured on a page view basis. The number of page views for each device is not uniform, and the factor is thought to be causing a difference from the share based on the number of devices used.

App store

➤ Oligopoly of Google's Google Play and Apple's App Store.

Sales amounts of Google Play and App Store in Japan

Source: The JFTC calculated based on Sensor tower
2022-2026 Mobile Market Forecast



On Android, the usage rate of Google Play greatly exceeds that of other app stores

Any other app store is not available for iOS

App store usage of Android users (n=1,000)

	Number of users (percentage)	Number of downloads (percentage)
Google Play	827 (82.7%)	14,729 (97.4%)
Amazon Appstore	50 (5.0%)	189 (1.2%)
Samsung Galaxy Store	14 (1.4%)	65 (0.4%)
HUAWEI AppGallery	8 (0.8%)	117 (0.8%)
Others	3 (0.3%)	29 (0.2%)
Haven't downloaded any apps	164 (16.4%)	—

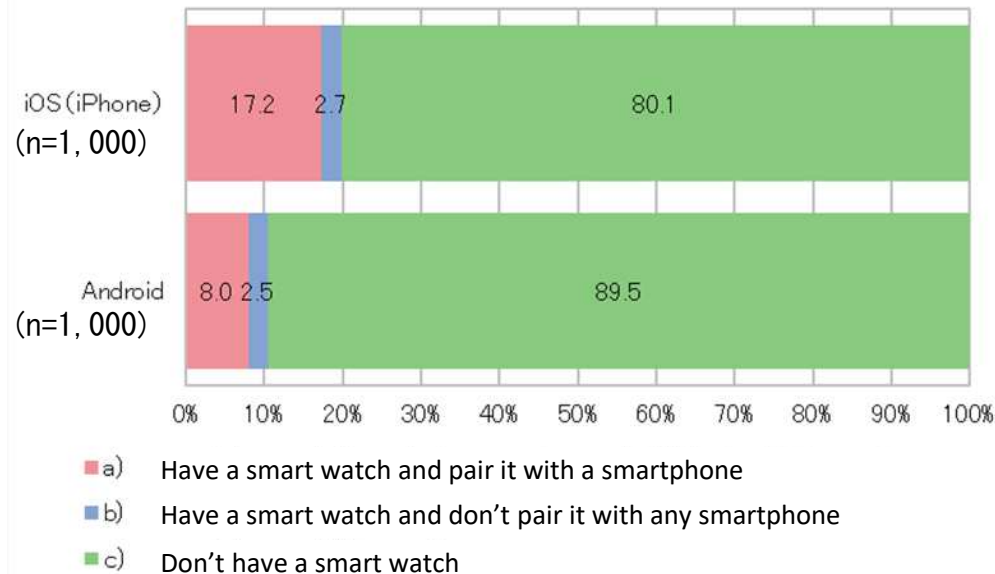
- The business models of Google and Apple, which provide mobile OS and operate app stores, have the following characteristics.

	Google	Apple
Apps	Providing maps, emails, etc.	Providing maps, emails, etc.
Browser	Chrome	Safari
Pre-install	Own apps and third-party apps (generally determined by OEM)	Own apps only
Side-loading	Allowed	Not allowed
App store	Google Play	App Store
Other app stores	Installable	Not installable
Mobile OS	Android	iOS
Open source	Yes	No
Device	OEM/Self-manufacture	Self-manufacture

- **The use of smart watches and voice assistants** in Japan **is still spreading**.
- Google and Apple are also **expanding their business** into products and services used in conjunction with smartphones.

Smart Watch

Consumer usage of smart watches



Voice Assistant

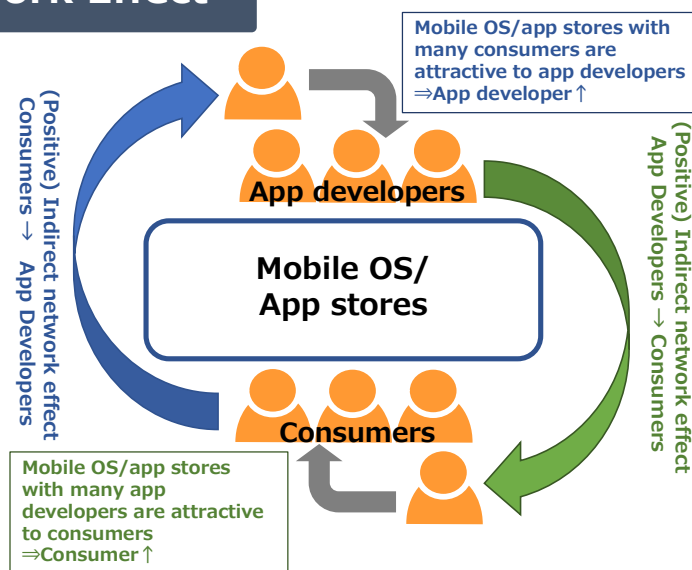
Those who use one or more voice assistants

iOS (iPhone)	37.3%
Android	21.9%

- In the mobile ecosystem that has achieved a certain scale, the operator of mobile OS or app store can make its position more consolidate with enough **indirect network effects**, stronger **lock-in effect** and **economies of scale**, and it can easily expand its own service in the mobile ecosystem with **economies of scope**.

1. Indirect Network Effect

- * When there are multiple participant groups belonging to the same network, an additional participant in one group increases the benefits of the participants in the other group (positive indirect network effect).



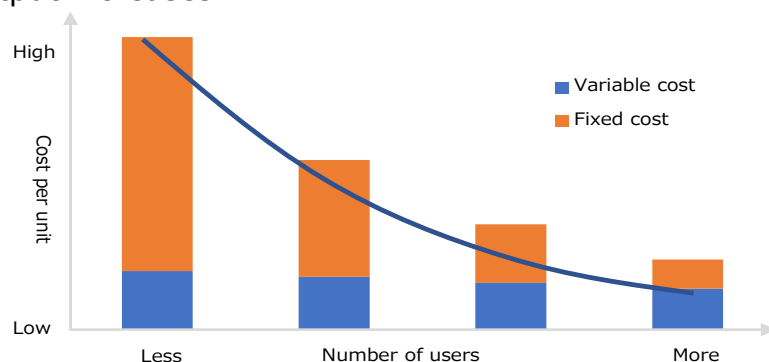
2. Lock-in Effect

- * Even if users want to stop the use of a good or service and switch to another one, they are unable to do so due to switching cost, indirect network effect or any other reasons.



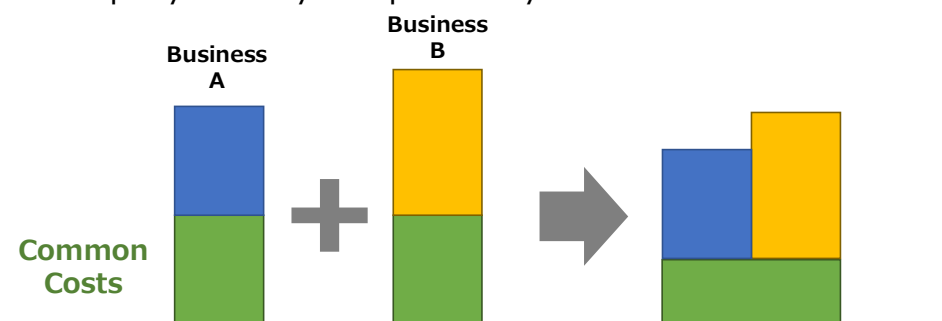
3. Economies of Scale

- * The average costs per unit of a good or service decreases as the output increases.



4. Economies of Scope

- * The production cost of goods and services is lower and more efficient when they are collectively produced by the same company than by independently.



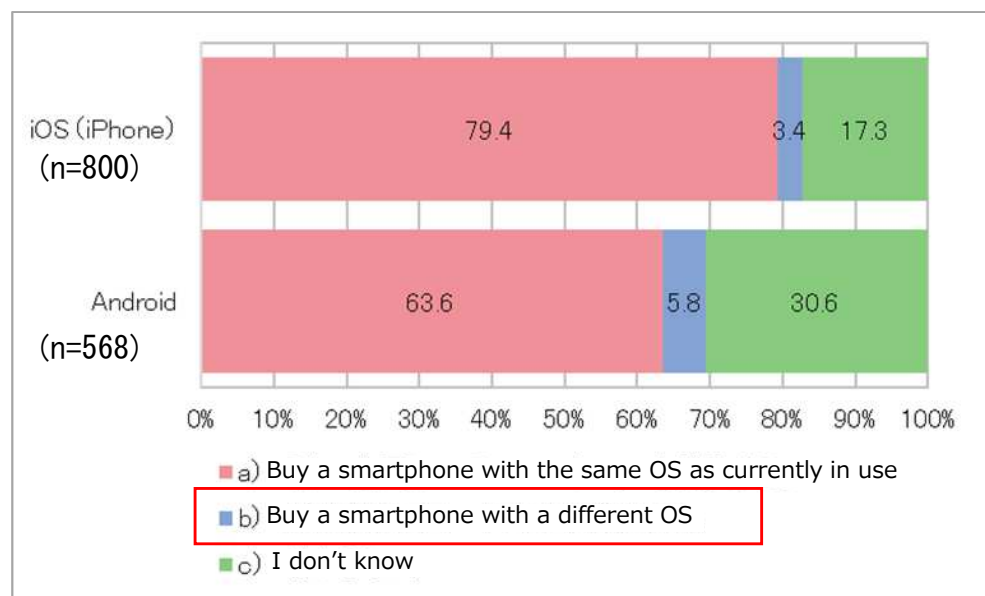
Competitive pressure between Android and iOS

- **Limited competitive pressure between Android and iOS** both from the point of view of **consumer switching** and from the perspective of **app developers**

Consumer switching

- Under a hypothetical price increase of smartphones, few consumers will choose a smartphone with a different OS. For consumers, various costs are incurred in switching between Android and iOS, and **there is a lock-in effect to the mobile OS currently in use.**

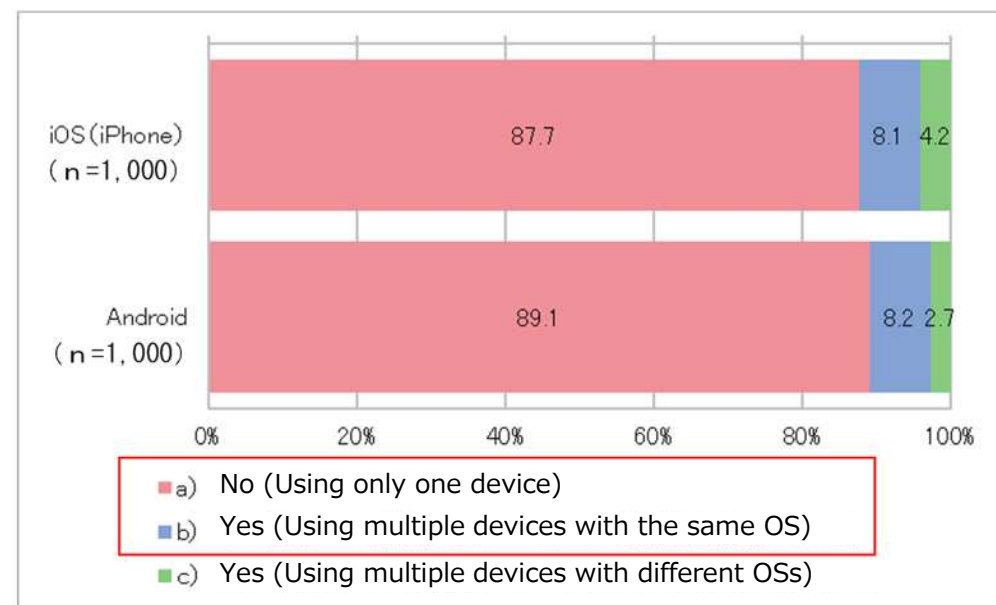
User's choice of smartphone when the price of smartphones with the mobile OS currently in use rises by 5-10%



Competitive pressure from app developers

- Most consumers use only one mobile OS, so it is reasonable for app developers to provide apps for both Android and iOS. Therefore, **providing Android apps and providing iOS apps are not in a binary relationship.**

Usage of multiple smartphones by consumers

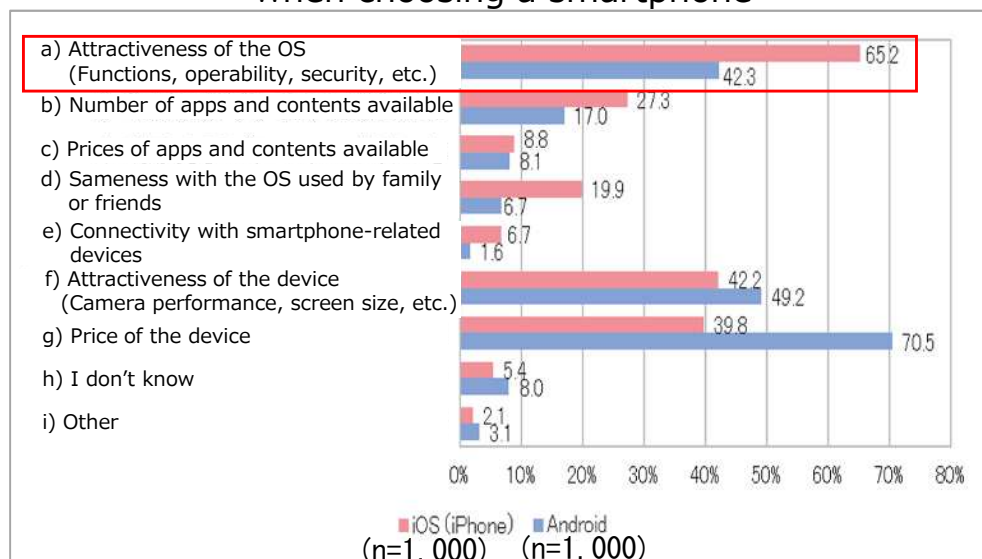


Competitive pressure from a mobile OS other than Android/iOS

- In order for a developer other than Google and Apple to gain market share in the mobile OS market, it is necessary to develop a mobile OS with considerable consumer appeal and have it installed in smartphones. In this regard, **financial strength and technological capabilities are barriers to entry.**

⇒ **Limited competitive pressure from a mobile OS other than Android/iOS**

Factors that consumers consider important when choosing a smartphone



Competitive pressure from other types of devices

- For consumers, smartphones are not only used at home, but also always carried when going out, making them an indispensable device in daily life.
- Tablets, PCs and other devices can be used instead of smartphones for certain purposes or specific usage situations. However, in principle, those devices can not replace smartphones, but are **used in parallel with smartphones.**

⇒ **Limited competitive pressure from other types of devices**

⇒ **Insufficient competitive pressure on Android and iOS**

Competitive pressure between Google Play and App Store

- Consumers do not have incentive to switch between Google Play and App Store. It is reasonable for app developers to provide native apps on both Google Play and App Store. Therefore, Google Play and App Store are not substitutable, and **competitive pressure between Google Play and App Store is limited.**

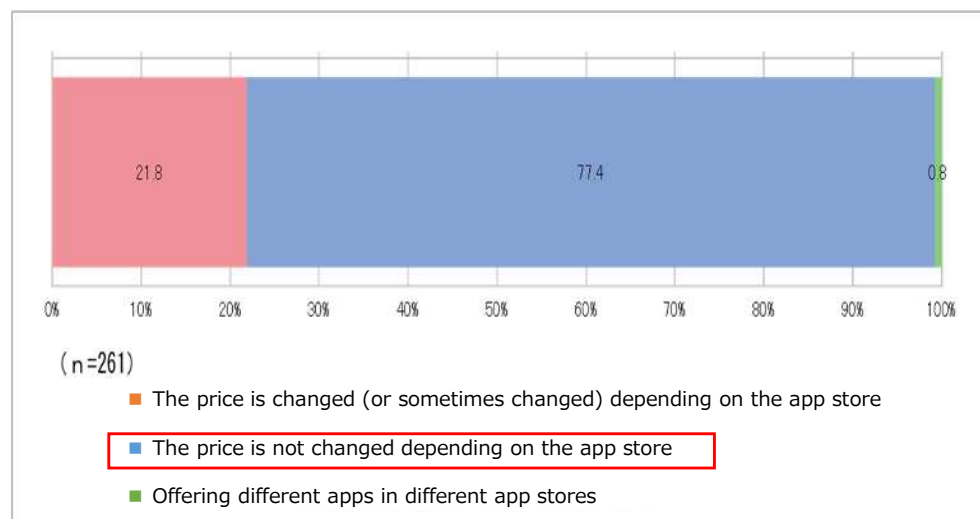
Consumer switching

- Many app developers provide native apps on both Google Play and App store, and there is no difference in terms of prices. Therefore, **consumers have no incentive to switch app stores.**

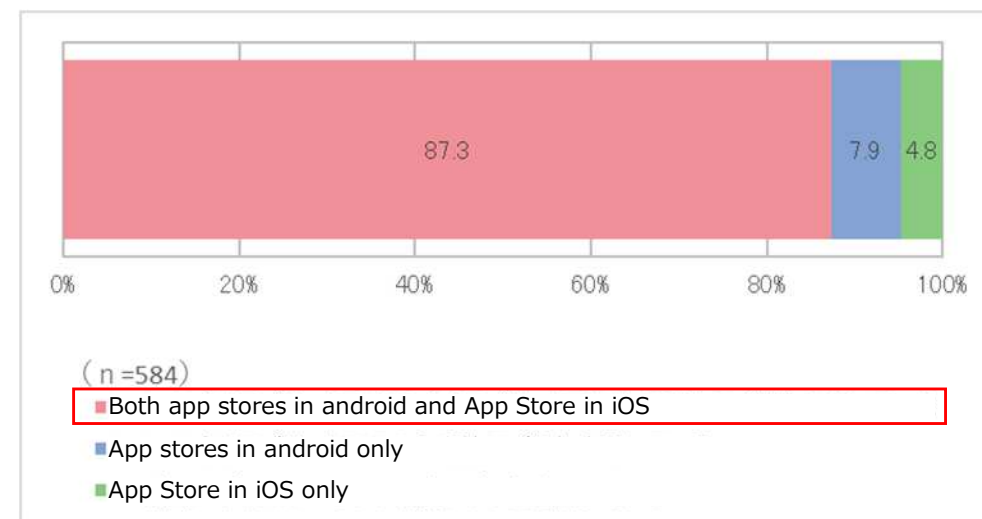
Competitive pressure from app developers

- It is reasonable for app developers to provide apps on both Google Play and App store. Therefore, **Google Play and App Store are not in a binary relationship.**

Pricing when app developers provide native apps on app stores



App stores where app developers provide native apps



Competitive pressure from an app store other than Google Play/App Store

- Regarding iOS, **only App Store is available**.
- Regarding Android, app stores other than Google Play (“other app stores”) are available. However, in the current situation:
 - Other app stores do not offer consumers the same benefits as Google Play
 - There is not much incentive for app developers to provide their apps to other app stores, or for smartphone manufacturers to choose other app stores
 - It is unlikely that new entrants will develop app stores and exert strong competitive pressure on Google Play

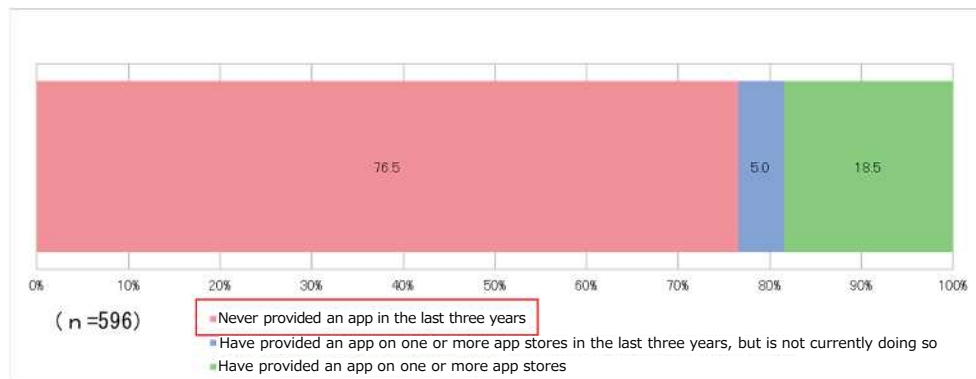
⇒ **Limited competitive pressure from other app stores**

Competitive pressure from side-loading

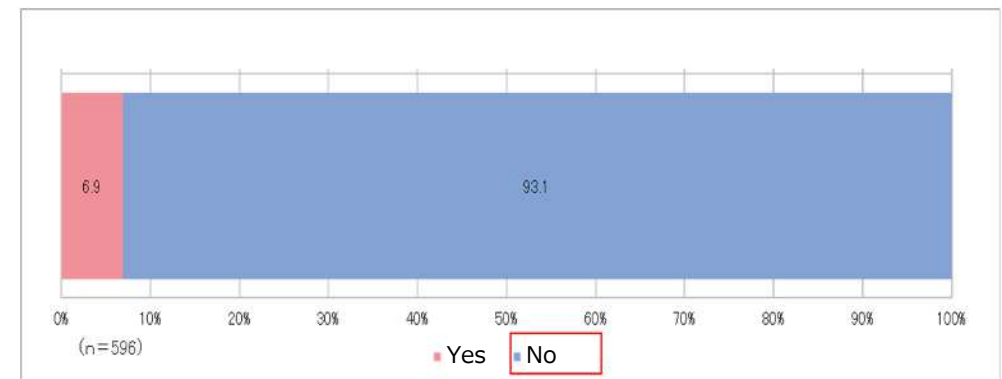
- iOS **prohibits side-loading via the browser**.
- Android allows side-loading via the browser. However, **it is common to download native apps from app stores** even on Android.

⇒ **Limited competitive pressure from side-loading**

Usage of app stores other than Google Play and App Store
by app developers



Status of providing side-loadable native apps by app developers



Competitive pressure from the use of web services

- Consumers prefer native apps to web apps for major services on smartphones.
- Due to factors such as poor operability for users, many of the app developers do not provide web apps offering the same service as native apps.
- Currently, web apps are not alternatives to native apps for consumers. Also, there is relatively little incentive for app developers to provide web apps as alternatives to native apps.

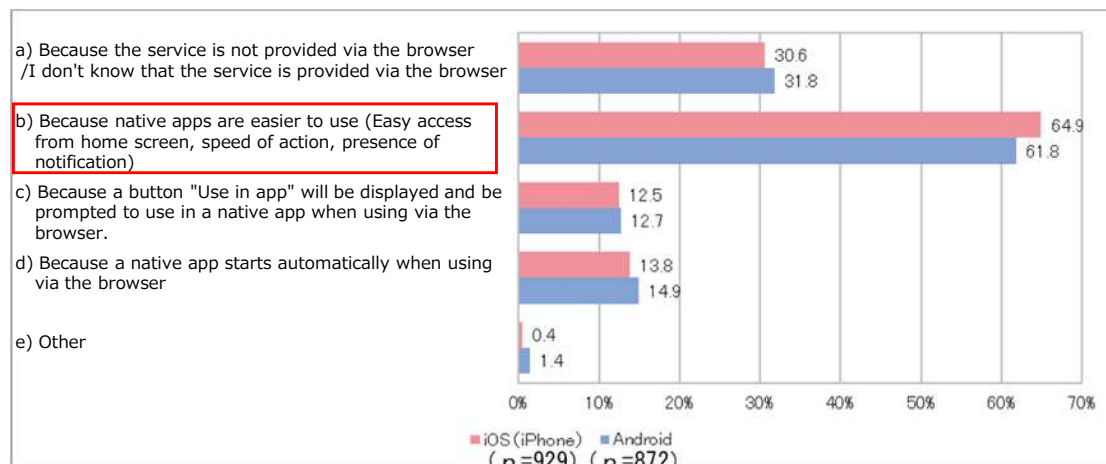
⇒ **Limited competitive pressure from web services (web apps)**

Competitive pressure from other types of devices

- Many apps are in line with the characteristics of smartphones, such as being able to send and receive information not only at home or at work, but also in various places.
- Consumers use apps on smartphones and apps on other devices depending on the factors such as the content of apps and the timing of use.
- Using apps on tablets, PCs or other devices can not be alternatives to using apps on smartphones. Those devices are complementary to smartphones.

⇒ **Limited competitive pressure from other types of devices**

The reason why consumers use services through native apps



⇒ **Insufficient competitive pressure on Google Play and App Store**

- The JTFC reviewed competitive concerns in each market regarding Google's and Apple's conducts.

App distribution service market

- In the mobile OS market and the app distribution service market, **there is not enough competitive pressure** on the mobile OS and the app stores provided/operated by Google and Apple.

Mobile OS market

- ⇒ To address competitive concerns regarding Google and Apple in both markets, it is effective to create a healthy competitive environment in both markets through **measures in terms of competition policy** (See page 24) such as increasing the scope for potential competitors to enter the market.

App market and other smartphone-related markets

- In the app market and other smartphone-related markets, new apps and products are emerging by Google, Apple and third parties, and **a certain degree of competition is taking place**.
- While providing mobile OS and operating app stores, Google and Apple compete with other developers in the app market and other smartphone-related markets (**dual role**).
- From the standpoint of the Antimonopoly Act (AMA), the JFTC reviewed the following that Google and Apple may conduct by using their position in the mobile OS market and the app distribution service market, where sufficient competitive pressure does not exist.
 - **Exclusionary self-preferencing in the app market and other smartphone-related markets** (See pages 16-19)
 - **Conducts causing unjust disadvantage to the contracted party** (See page 20)

* The JFTC also reviewed competitive concerns regarding **the level of app store commissions** (See page 21), and assessed **security and privacy** claims (See page 20).

Restriction of access, etc. (by using their position as the mobile OS providers)

- Google and Apple are in a position to be able to exclude their competitors by treating their own apps, products and services more favorably than those of competitors. Google and Apple might restrict competitors' access to smartphone functions (API connection, etc.), or allow mobile OS update information to be accessed by their own app development staff earlier than by competitors.

Examples of opinions from consumers and claims by app developers

Consumer



When I buy a smart watch, I want to choose one that is easy to link with a smartphone.

App developer



It seems that the apps provided by Google and Apple can access easily to smartphone functions than the apps provided by third parties.

Examples of claims by Google and Apple

Google



Android does not have the characteristic of prioritizing Google's devices and apps. Update information is provided to other companies at the same timing as our company, taking into account the time required for other companies to respond to the updates.

Apple



The reason why there are functions not offered to other companies is to ensure security and protect privacy. It is in line with the user's own data control desires.

Views from the AMA

- Google's and Apple's conducts such as the following would be **a problem under the AMA (Private monopolization, Interference with a competitor's transactions, etc.)** when such conducts lead to treat their own apps, products and services more favorably than those of competitors and interfere with transactions between the competitors and consumers, causing the decrease in trade opportunities for the competitors or the exclusion of the competitors.
- (1) **Restricting competitors' access to (part of) smartphone functions** that can be accessed by their own apps, products and services
 - (2) **Making their own apps, products and services compatible with updates** of their mobile OS **earlier than competitors**
 - (3) **Constraining the business models of competitors through updates** of their mobile OS

Disadvantageous treatment in rankings, etc. (by using their position as the app store operators)

- Google and Apple are in a position to be able to exclude their competitors by treating their own apps more favorably than those of competitors. Google and Apple might display their own apps in a way that appeal to consumers on the app store rankings, such as by manipulating search algorithms.

Examples of opinions from consumers and claims by app developers

Consumer



When downloading an app, I refer to rankings and recommendations on an app store.

App developer



Google's and Apple's own apps do not have to bear commissions and app reviews, and may be treated more favorably than the apps of competitors on the app store rankings.

Examples of claims by Google and Apple

Google



Google treats our own apps and other companies' apps fairly. In-app payment is a seamless and secure system. Actually, few app developers pay commissions.

Apple



App Store applies the same search algorithm to all apps. In-app payment provides a high-quality user experience. Actually, few app developers pay commissions.

Views from the AMA

- Google's and Apple's conducts such as the following would be **a problem under the AMA (Private monopolization, Interference with a competitor's transactions, etc.)** when such conducts lead to treat their own apps more favorably than those of competitors and interfere with transactions between the competitors and consumers, causing the decrease in trade opportunities for the competitors or the exclusion of the competitors.
 - (1) Manipulating search algorithms or app store rankings in order to **display their own apps in a way that appeal to consumers**
 - (2) **Disadvantaging the apps of competitors** by collecting commissions from competitors while not collecting commissions from themselves
 - (3) **Treating the apps of competitors disadvantageously in app review, such as by arbitrarily rejecting those apps**

Use of data (by using their position as the mobile OS providers or the app store operators)

- Google and Apple are in a position to be able to exclude their competitors by creating a situation that is more advantageous than competitors when developing and providing their own apps, products and services. Google and Apple might widely and cross-sectionally collect the data (location information, payment history, etc.) generated from apps, products and services provided by other app developers, and use the data for developing and providing their own apps, products and services.

Examples of claims by app developers

App developer



Google and Apple may be collecting the data generated from our apps (while we cannot collect or use the data) and using the data for developing their own apps.

App developer



Google and Apple may be able to develop apps that are easy to monetize based on the payment history generated from our apps.

Examples of claims by Google and Apple

Google



Google may collect specific data to improve our services and maintain quality, but do not use undisclosed data of other companies to gain an unfair advantage.

Apple



To protect user privacy, data processing is basically performed on the device. In addition, Apple do not share the information of other companies obtained from the App Store with our service business.

Views from the AMA

- Google's and Apple's conducts such as the following would be **a problem under the AMA (Private monopolization, Interference with a competitor's transactions, etc.)** when such conducts lead to treat their own apps, products and services more favorably than those of competitors and interfere with transactions between the competitors and consumers, causing the decrease in trade opportunities for the competitors or the exclusion of the competitors.
 - (1) Widely and cross-sectionally collecting **the data generated from apps, products and services provided by other app developers**, and **using the data for developing and providing their own apps, products and services**
 - (2) Through app review, collecting **information related to new functions of apps provided by other app providers** before the app is newly released, and **using it for developing their own apps, products and services**

Self-preferencing by influencing consumer's rational choice (by using their position as the mobile OS providers or the app store operators)

- Google and Apple are in a position to be able to exclude their competitors by creating an advantage in consumer choice for their own apps or services compared to those of competitors, such as by disabling uninstallation of pre-installed apps or complicating settings of changing default.

Examples of opinions from consumers and smartphone manufacturers

Consumer



I'm using the pre-installed browser, and don't know the features of other browsers. Changing the browser's search engine is troublesome.

Smartphone manufacturer



One app per service is pre-installed on our devices because pre-installing too many apps takes up memory space and leads to consumer complaints.

Examples of claims by Google and Apple

Google



OEMs can pre-install apps other than ours. There is no obligation to pre-install our app on all devices.

Apple



Our apps are pre-installed so that users can use various services as soon as they get a new device. Users can easily use other apps.

Views from the AMA

- Google's conducts such as the following would be **a problem under the AMA (Private monopolization, Tie-in sales, Trading on exclusive terms, Trading on restrictive terms, Interference with a competitor's transactions, etc.)** when such conducts lead to create an advantage in consumer choice for its own apps or services compared to those of competitors, causing the decrease in trade opportunities for the competitors or the exclusion of the competitors.
 - (1) As **a condition of pre-installation of Google Play**, urging other smartphone manufacturers to **pre-install other Google's apps**, or to **set other Google's apps or services as default**. Or **disabling uninstallation of pre-installed apps**, or **complicating settings of changing default**
 - (2) **Providing financial incentives** to smartphone manufacturers **on the condition that they do not pre-install other apps competing with Google's apps**, or **on the condition that they set Google's apps or services as default**

(*) Apple, which is also a smartphone manufacturer, makes pre-installation and default settings on its smartphones.

Although this section only describes the conducts of Google, it doesn't mean that Apple's conducts would not be a problem under the AMA.

Conducts causing unjust disadvantage to the contracted party

- In the mobile OS market and the app distribution service market, while the market share of Google and Apple is almost 100% in total, the competitive pressure between them and from other companies, etc. is not sufficient. Therefore, **Google and Apple are highly likely to have a superior bargaining position in service transactions with the contracted parties** (i.e. other app developers(*)).

(*) Regarding conducts as a mobile OS provider, companies providing products and services used in conjunction with smartphones may also included.

(Example of concerns)

By making mobile OS specification changes (updates) frequently and without giving sufficient preparation time, **incurring significant costs for other app developers to adapt their apps, products and services to the changes in the mobile OS.**

Views from the AMA

- When Google and Apple have a superior bargaining position in service transactions with the app developers, it would be **a problem under the AMA (Abuse of a superior bargaining position)** to unjustly cause disadvantage to the app developers in light of normal business practices.

Assessment of security and privacy claims

- Google and Apple argue that part of their conducts in the app market and other smartphone-related markets are **necessary from the perspective of ensuring security and protecting privacy among consumers.**
- When judging whether a conduct violates the AMA, various factors must be comprehensively considered. In assessing those security and privacy claims, consideration will be given to **the rationality of the objective** and **the appropriateness of the means** (whether there are alternative means that are less restrictive, etc.).
- In the enforcement of the AMA, verifying such security and privacy claims (especially from the viewpoint of appropriateness of means) may require advanced technical evaluations related to security assurance and privacy protection. Also, in order to carry out such evaluations, there may be cases where a large amount of verification work and highly specialized knowledge are required.

- It has been pointed out that the level of app store commissions may remain high. There are **app developers being deeply dissatisfied with the level of app store commissions.**

Example of claims by Google and Apple

Google



Most developers do not pay commissions. 15% or less commission rates are applied to most developers paying commissions.

Apple



When launched App Store, Apple thought a commission model would be the best way to encourage app development. At the time, many other software sellers charged commissions over 30%.

- In fact, as claimed by Google and Apple, the number of app developers paying 30% commission rate is limited. On the other hand, since 30% commission rate is applied to the developers whose sales exceed a certain amount, commission income from these developers appears to account for a high percentage of total commission income.

Views from the AMA

- (1) The high commission levels lead to the high price of digital contents and services subject to in-app payment, and interfere with transactions between the competitors and consumers, causing the decrease in trade opportunities for the competitors or the exclusion of the competitors
- (2) When having a superior bargaining position in service transactions with the app developers, unilaterally setting excessively high commission levels, unjustly causing disadvantage to the app developers in light of normal business practices

These would be **a problem under the AMA (Private monopolization, Interference with a competitor's transactions, Abuse of a superior bargaining position, etc.).**



- Some of other app stores set commission rates lower than 30% (around 12%). Because there is not enough competitive pressure on app distribution in the app stores provided by Google and Apple, **the level of app store commission cannot be expected to decline by market functions.**

⇒Including the concerns about the level of app store commissions set by Google and Apple, **it is important to take measures in terms of competition policy** (see pages 23 and 24) to increase competitive pressure.

App distribution service market

Mobile OS market


- Insufficient competition in the mobile OS market and the app distribution service market
- On the other hand, in general, even in a monopoly or oligopoly market, if there is sufficient entry pressure or there is active competition among incumbent oligopoly operators, market functions are expected to reduce competitive concern.

⇒ **It is effective to create a healthy competitive environment in both markets through the measures in terms of competition policy** such as increasing the scope for potential competitors to enter the market.

App market and other smartphone-related markets

- **Eliminating violations by enforcing the AMA is effective against anticompetitive conducts.**
- However, **the market definition and the proof of competitive harms may take time**, and **the verification of issues such as security may require** highly specialized knowledge and **a large amount of verification work.**

⇒ It is effective to complement the enforcement of the AMA with **the measures in terms of competition policy preventing the AMA violations and encouraging the improvement of potentially problematic behavior under the AMA.**

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- The following three measures can be considered in terms of competition policy in order to **create a healthy competitive environment in the mobile OS market and the app distribution service market** and to **complement the enforcement of the AMA with the measures in terms of competition policy preventing the AMA violations and encouraging the improvement of potentially problematic behavior under the AMA.**
 - While it is desirable for Google and Apple to take the following measures, it is effective to secure them by law to the extent necessary to ensure the effectiveness of measures.

Three desirable measures in terms of competition policy

1. Prevention of self-preferencing in the app market and other smartphone-related markets
2. Ensuring a healthy competitive environment in the mobile OS market and the app distribution service market
3. Ensuring fairness in rule-making for the mobile ecosystem

1. Prevention of self-preferencing in the app market and other smartphone-related markets

- Google and Apple may adversely affect competition through self-preferencing by using their position in the mobile OS market and the app distribution service market, where sufficient competitive pressure does not exist. Therefore, it is desirable for Google and Apple to take the following measures.

(1) Ensuring equal footing regarding access to mobile OS functions and update information

- (a) Permitting access to the mobile OS functions at the same timing, scope and level as Google's/Apple's apps, products and services, so that other developers' apps, products and services can be interoperable with the mobile OS (Except when justifications are recognized from the viewpoint of security assurance and privacy protection)
- (b) Disclosing information on mobile OS updates at the same timing and contents as for Google's/Apple's app development staff (Excluding urgent updates such as vulnerability response)

(2) Ensuring equal footing regarding App store management

- (a) Application of transparent, fair and non-discriminatory terms regarding search results, rankings, recommendations, etc.
- (b) App review based on fair, reasonable and non-discriminatory terms
- (c) Not restricting other app developers from indicating different terms of sale and payment within their apps, and not restricting the conclusion of contracts with or the receipt of service fee from users outside the app stores
- (d) Making it possible to use or select a system other than Google's/Apple's in-app payment system and/or Google's/Apple's in-app payment system, and separately setting the commission of using the in-app payment system and the commission of using app store
- (e) Clarification of app store's operation costs and income, and actively responding to individual negotiations regarding commission rates, etc.

(3) Ensuring equal footing regarding use of data collected from other developers' apps

- (a) Not using non-public data generated by other developers' apps, products and services for the purpose of developing competing apps, products and services, and constructing a mechanism to share the data with other developers subject to the user's opt-in consent
- (b) Not using non-public data obtained in the app review regarding the apps of other developers for the development of Google's/Apple's apps, products and services

(4) Ensuring equal footing regarding consumer's choice of apps and services

- (a) Not imposing technical or other restrictions when consumers switch apps and services
- (b) Respecting consumer's rational choice of apps by displaying choice screens

2. Ensuring a healthy competitive environment in the mobile OS market and the app distribution service market

- In order to secure a healthy competitive environment by increasing potential entry pressure and revitalizing competition among business operators as much as possible, it is desirable for Google and Apple to take the following measures in the mobile OS market and the app distribution service market, where sufficient competitive pressure does not exist.

(1) Promoting consumer switching

(2) Promoting the entry of new mobile OS and app store

Mobile OS market

(a) Improving interoperability, such as providing data portability tools for free to consumers

(a) Not entering into a contract with a smartphone manufacturer that prohibits the manufacture of smartphone devices equipped with a competing mobile OS or the development of a competing mobile OS.

(c) If there is no problem in terms of security assurance and privacy protection, regarding smartphone devices equipped with the Google's/Apples mobile OS, making it possible to download apps including app store apps regardless of whether or not the Google's/Apples app store is used.

App distribution service market

(b) If there is no problem in terms of security assurance and privacy protection, improving interoperability, such as enabling consumers to access and use digital contents acquired from the routes other than Google's/Apples app store.

(b) When licensing major apps to smartphone manufacturers, making it possible to license app store app and other apps separately.

(d) Allowing app developers to make reasonable choices regarding the use of browser engines, and not imposing technical or other restrictions on the web apps if there is no problem in terms of security assurance and privacy protection.

3. Ensuring fairness in rule-making for the mobile ecosystem

- The mobile ecosystem functions as the foundation of consumers' daily lives, and **a certain degree of publicness has emerged**.
- Based on this, **it is desirable for Google and Apple**, which are in a position to make rules in the mobile ecosystem, **to take the measures to develop a fair competitive environment within their respective ecosystems**.

- (1) Notifying relevant developers in advance of any changes to rules within the mobile ecosystem. Also, after presenting the details of the change and the grounds for the change, providing a sufficient explanation, such as responding to inquiries appropriately.
- (2) Providing a sufficient grace period between notification of such changes and implementation of such changes.
- (3) When receiving reasonable complaints on the content of the change from related businesses, considering such complaints as much as possible and hold sufficient discussions with related businesses.

4. Promotion of competition related to the formation of new ecosystems

- In addition to the above three initiatives, it is desirable for Google and Apple, which are central players in the mobile ecosystem, to take the following measures.
 - Continuing to bring about innovation without hindering the creation of new products or services and the construction of new ecosystems centered on such products or services by developers other than Google and Apple.

- 1 The JFTC continues to respond strictly and appropriately to concrete cases involving a mobile OS provider or an app store operator that become problematic under the Antimonopoly Act (AMA).
- 2 The JFTC will make public the contents of the report in order to realize the development of a competitive environment in the mobile ecosystem, and also continues to proactively engage in collaboration and cooperation with the Headquarters for Digital Market Competition and other related ministries or agencies to develop the competitive environment.
- 3 The JFTC also pays close attention to trends related to new ecosystems centered on products and services other than smartphones, and conducts market studies as necessary to clarify issues on the AMA and competition policies while taking consumer interests into consideration.
- 4 The JFTC exchanges opinions with competition authorities in other countries and regions and also makes use of opportunities offered by organizations such as the Organization for Economic Cooperation and Development (OECD) and the International Competition Network (ICN) to promote continuous collaboration with relevant overseas authorities and develop competitive environment.