

Competition Assessment of the Mobile Ecosystem Interim Report Summary

April 26, 2022

**Secretariat of the Headquarters for Digital Market
Competition, Cabinet Secretariat**

1. The importance of the mobile ecosystem to the economy and society

- Smartphones are rapidly spreading in our society, and through smartphones, people are able to enjoy a variety of services necessary for their daily lives. **Consumers can keep them on hand at all times and use the services anytime, anywhere. For businesses, smartphones provide an unprecedented opportunity to access a wide range of users as a strong customer contact point.** They have brought tremendous benefits to both parties, serving as the **foundation of the economy and society.**

2. Influence of platform operators in the mobile ecosystem

- On the other hand, businesses that access customers through smartphones **need to provide services in accordance with specifications and rules set by providers of operating systems, app stores, browsers, etc.**

⇒ The **platform operators** that govern the mobile ecosystem have a **strong influence** in determining what the **digital space should be.**

- So far, we have focused on individual digital markets, such as online malls, app stores and digital advertising, and have made efforts to solve the problems.
- However, where many of these work within the mobile ecosystem, it is difficult to understand **the structural challenges in the digital market** simply by looking at individual markets.

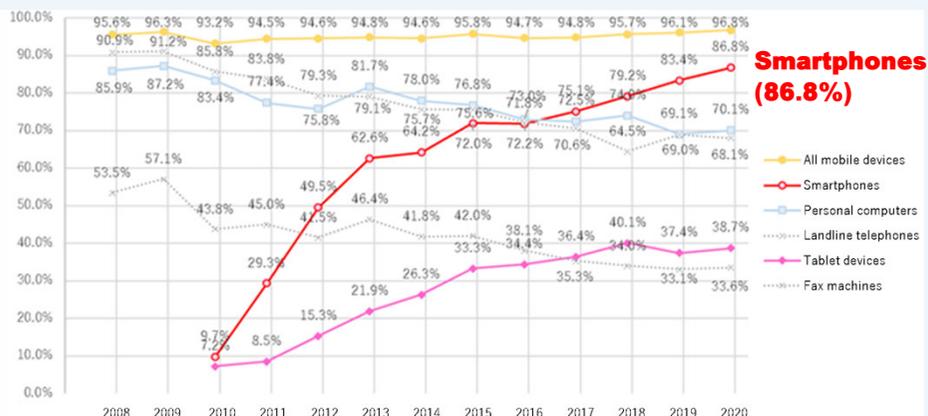


We are conducting a competition assessment of **how the layered structure in the mobile ecosystem affects the competitive environment.**

Market facts and structure of the mobile ecosystem

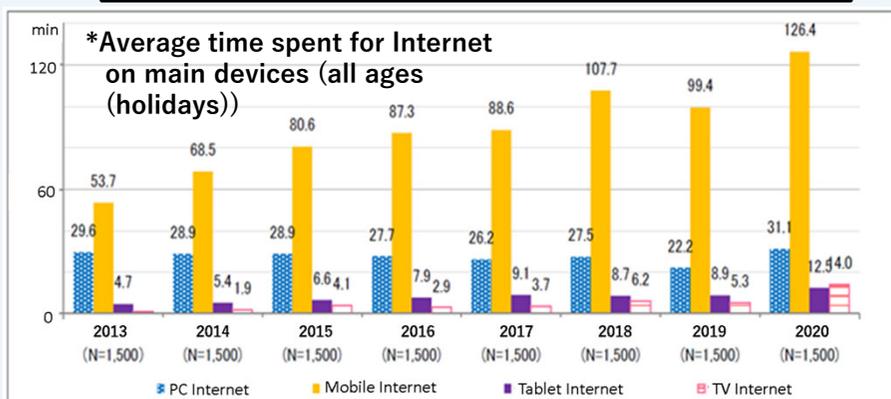
- "Mobile ecosystems" are becoming increasingly important in the economy and society.
 - Smartphones are spreading rapidly, reaching **86.8%** of households (2020).
 - Average time spent for daily mobile internet use has also increased significantly both weekdays and holidays. (On weekdays, the time spent for mobile internet has **tripled** from 37.6 minutes to **105.8 minutes** per day, and on weekends, the time spent has **more than doubled** from 53.7 minutes to **126.4 minutes** per day. (Comparison between 2013 and 2020))
 - The mobile content-related market is also expanding (**over 7 trillion yen**).

Smartphone penetration rate



Results of the 2020 telecommunications usage trends survey, Chart 1.1

Changes in average time spent for Internet



Survey on information and communication media usage time and behavior in 2020

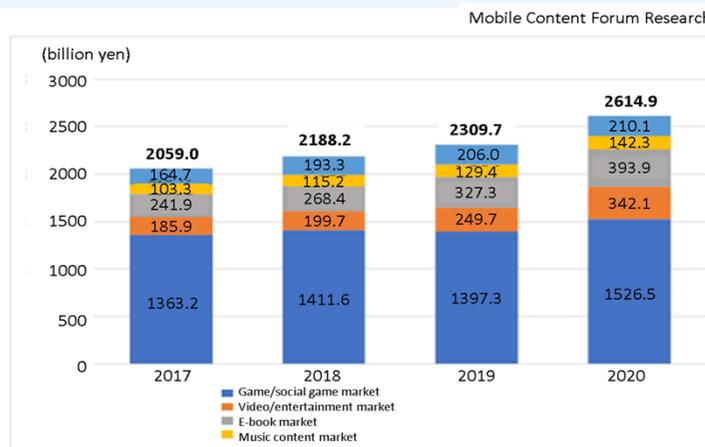
Mobile content-related markets

Unit: Billion yen

Year	2017	2018	2019	YoY	2020	YoY
Mobile content market	2110.9	2226.1	2337.8	105%	2629.5	112%
Mobile commerce market	3618.2	3994.1	4549.3	114%	4486.3	99%
Mobile content-related market	5729.1	6220.2	6887.1	111%	7115.8	103%

Mobile Content Forum Research

Mobile content market

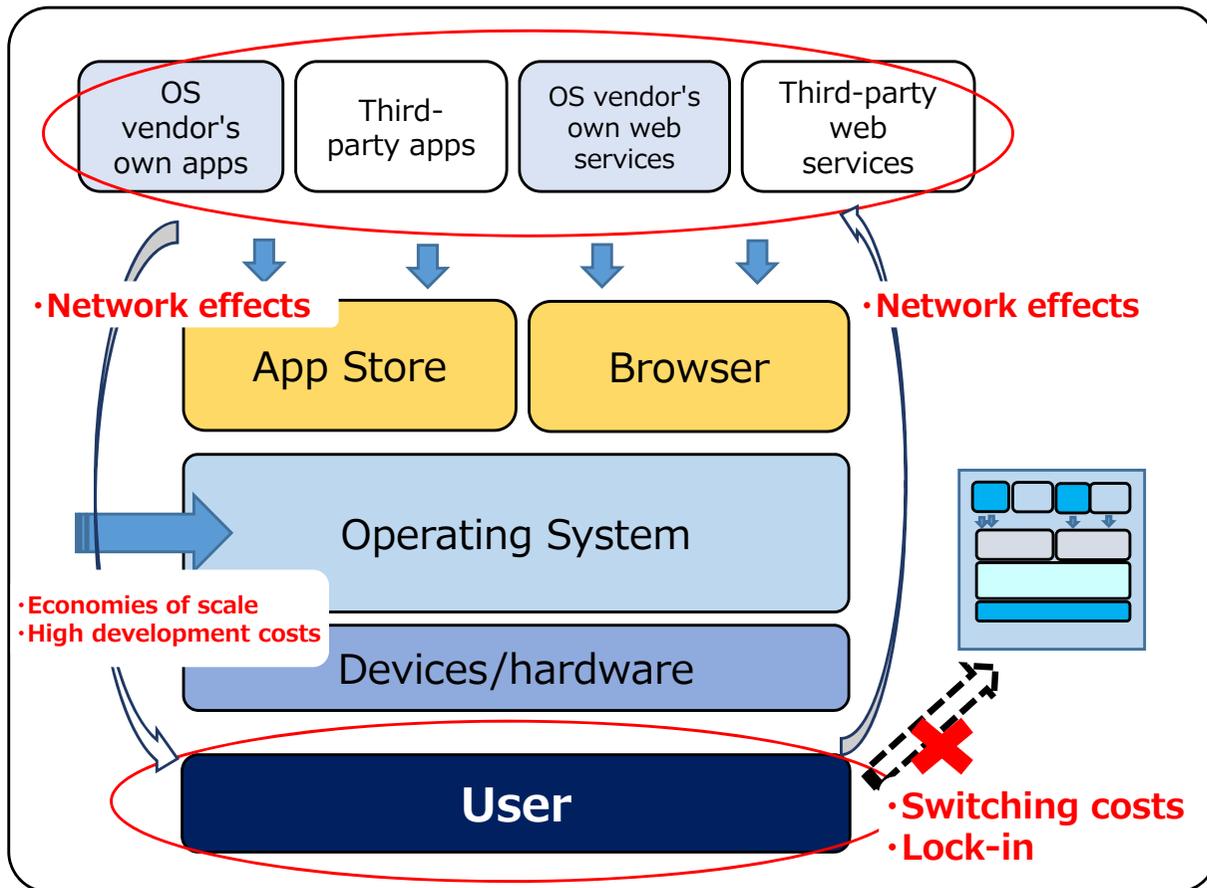


*1 Game/social game market : Billed content in online games, SNS, etc. Includes avatars, items, and other purchasable tools.
 *2 Video/entertainment market : Video and other content available on smartphones and other devices.
 *3 E-books, etc. = Book, comic and magazine content available on smartphones and other devices.
 *4 Music content market = Music content available on smartphones and other devices.

The 2020 figure of 26,295 in the table above includes the future phone market, while the figure of 26,149 excludes it.

- Structure of the mobile ecosystem
 - The mobile ecosystem has **the layered structure** which consists of an OS layer in which only a few players exist and other layers (app stores, browsers, etc.) which are based on the OS layer.
- Characteristics of the mobile ecosystem
 - **Network effects** (The number of users increases by apps that attract users, and as the number of users increases, the number of app providers participating in the ecosystem further increases), **switching costs** due to UI and data accumulation, and **economies of scale** due to high development costs.
 - These **high barriers to entry** have resulted in an oligopoly structure with a small number of platform operators.

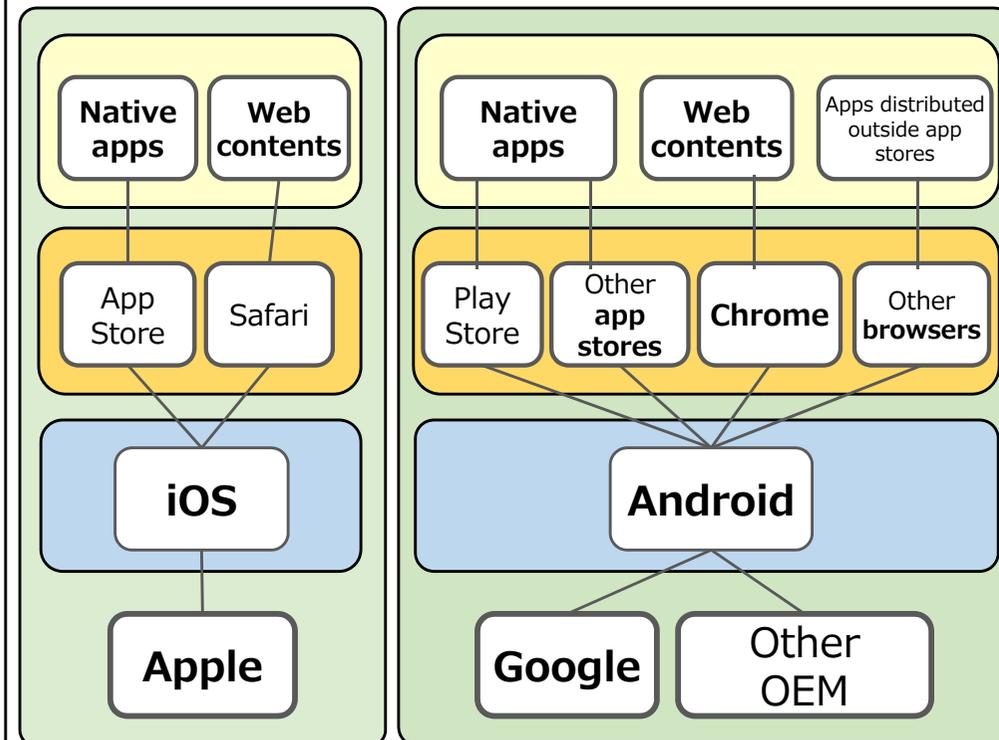
Overview and characteristics of the mobile ecosystem



Two different business models

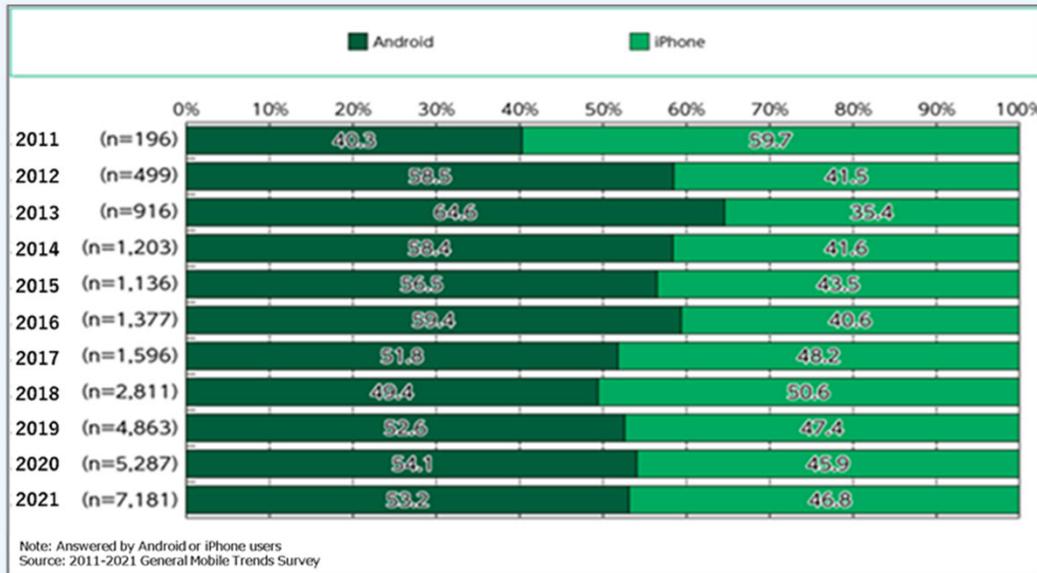
Apple: Strength in devices, vertical integration (App Store, browser engines)

Google: Strength in searches, etc., pre-installation and default settings under contracts.



- Two major ecosystems (Apple, Google)
 - In the market of mobile operating systems that provide the foundation for the mobile ecosystem, there is an **oligopoly** by two companies, namely iOS (Apple) and Android (Google).
 - In recent years, there has been no change in this trend and the **situation remains fixed**.

Mobile OS market share

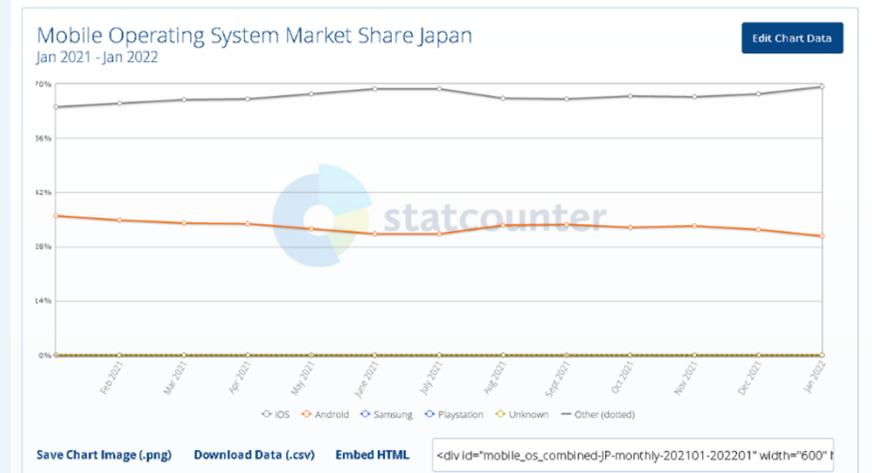


White Paper on Mobile Society 2021 Edition (Mobile Society Research Institute)

(Note)

- In the "Mobile Society White Paper 2021 Edition" (see figure on the left), the share of operating systems based on the number of units in operation was calculated through a web-based survey of those registered as monitors with a private research firm. According to the survey, the most commonly used operating systems share is **53.2% for Android and 46.8% for iOS** (2021).
- With Statcounter (see figure on the right), the share of operating systems was measured by calculating the number of views of web pages with embedded measurement tags and determining on which mobile OS device the page views were made. According to this survey, **Android and iOS accounted for 30.67% and 69.18%, respectively** (2022).

*The market share figures differ depending on how they were calculated, that is, the number of active users surveyed or the number of page views, but there is an oligopoly by the two companies, and this trend has not changed significantly.



Source: <https://gs.statcounter.com/browser-market-share/mobile/japan>

● OS layer

- Role: A system for **software of each layer to function on the mobile device**. Has a **significant influence throughout the mobile ecosystem**.
- Characteristics: **Indirect network effects** (More users attract more developers, which attract even more users.), **high barriers to entry** (e.g., required large development resources), **switching costs** (UI, data accumulation, etc.).

● App Store layer

- Role: A **gateway** for app providers to offer apps to mobile device users. Platform **operators review and decide whether or not to distribute** apps under the guidelines.
- Characteristics: **Indirect network effects**, **high barriers to entry** (banning other app stores (Apple), pre-installation and default settings by offering benefits to OEMs (Google)), **switching costs**.

● Browser layer

- Role: A **gateway** for web service providers to offer web services to mobile device users. Functions provided by browsers affect web service functionality, etc. **Influences the development of web services** including web apps.
- Characteristics: **Indirect network effects** (Many websites support browsers that have acquired many users. This attracts even more users.), **high barriers to entry** (e.g., difficulty to enter for browsers with website compatibility restrictions, dominance of browsers that have default status, large development costs, etc.), **switching costs** (due to ID/PW, bookmarks and other data, etc.)

● Search services

- Role: **Serves as the window to the web** for users, and **search results, display, etc. are critically important for web services** to reach users.
- Characteristics: **Network effects** (the more users for the search service, the more websites focus on responding to that search service. Accumulation of data from many uses improve accuracy of searches, which attracts more users), **high barriers to entry** (significant development costs, accumulation of query data and indexes), **switching costs** (advantages due to pre-installation and default settings)

1. Our understanding of the mobile ecosystem as a whole

- Oligopoly by platform operators
 - Existence of barriers to entry, indirect network effects, switching costs, etc.
 - There are **oligopolies** with a few platform operators in major layers.
 - Google is leveraging its strength in search and other services to gain leading positions in the layers such as OS, app store, and browser.
 - Apple determines the pre-installation and the default settings for its own App Store, browser and major apps on its devices and OS (vertical integration model).
- **Setting various rules**, etc. by platform operators → **Strengthening and entrenching influence** in the ecosystem
 - **Leverage their own strengths at each layer** to define **rules, etc. at other layers**
 - Making their own services **in layers where they already have strengths more competitive**, and **strengthening the competitiveness of their own services in other layers**
 - Various types of conduct within and across layers act in a **composite and synergistic manner**
 - **Influence** of platform operators in the overall ecosystem is **strengthened and entrenched**



Competition concerns in the ecosystem

- Deterioration of **level playing field** (between platforms and third parties, between third parties)
- **Increased cost and reduced viability** of each layer on the platform
- **Exclusion and restricted entry** at each layer and across the mobile ecosystem, and **elimination of competitive pressures** through technological innovations etc.

2. The "ideal state" and direction of consideration for the overall mobile ecosystem

(1) Ideal state

Ensure **opportunities for innovation by diverse entities and consumer choice** at each layer of the mobile ecosystem. The followings must be ensured in order to achieve this.

- A) Exert **competitive pressure** on the **entire** mobile ecosystem **and its layers** from all sides to encourage innovation. Furthermore, ensure a **competitive environment that does not eliminate the possibility of a future paradigm shift**.
- B) In cases where each layer **affects competition in the other layers**, ensure a **fair and equitable competitive environment in the other layers concerned**.
- C) Ensure that a **fair and equitable competitive environment** is not impaired by the influence of the mobile ecosystem as leverage in the competition in **extending to new customer contact points**.

(2) Basic approach to address issues

A **combination** of the following approaches should be taken in accordance with the characteristics of each layer.

- **Whether there is competitive pressure at work** in the mobile ecosystem as a whole and at each layer.
 - Whether it is necessary **to take action to increase competitive pressure** in the layer concerned.
- **Whether there are concerns** that each layer within the mobile ecosystem is **impairing a fair and equitable competitive environment in other layers**.
 - Whether a certain approach is necessary to **restrain platform operators from conduct to impair a fair and equitable competitive environment in other layers leveraging their strengths at each layer**.

(The perspective in C) above is being evaluated in the interim report of the "Competition assessment on new customer contact points (voice assistants and wearables)," which is being conducted at the same time with this assessment.)

3. Perspectives in considering options to address the issues: Difficulties in solving current problems and further concerns in the future

- The **characteristics of digital markets** (the cost of trading participation is small, and the **network effect** is strong and works rapidly. Therefore, once **tipping occurs**, it will lead to a **“winner-takes-all” situation** and this problem is **difficult to solve through the market mechanism**) **effect together in multiple layers**.
 - The **status** of platform operators is established as **extremely strong and entrenched**.
- Algorithms and other factors have **black-boxed the business decision-making process** (asymmetry of information).
 - Platform operators can **easily exercise influence at each layer**.
- In the businesses using digital technology, **large two-sided markets** consisting of a group of businesses and a group of consumers tend to be formed **due to strong network effects**.
 - ✓ **Presenting offer at low or zero price to consumers**, while offering **unfavorable terms to the business side**. In between, rents can be enjoyed.
 - ✓ By controlling access to the consumer, the business is **locked in the ecosystem** and unfavorable terms are **difficult to be overcome by the business side**.
 - ✓ It is also **difficult to be overcome by consumers** due to the invisibility for them.
 - It is difficult to **solve the problem through market functions?**
- **Limited rationality of consumers** (limitations in the recognition of choice and the rationality of choices and decisions due to status quo bias).
 - ✓ Small screen size of mobile devices, characteristics of use situations (e.g., while on the move) and operability limitations.
 - ✓ Concerns are heightened by the fact that users use smartphones all day for daily needs such as purchases and payments.
 - Concerns that **restrictions or inducements to choices by platform operators may further reduce the room for consumers to make rational decisions**
- Extending influence in the mobile ecosystem by **leveraging mobile devices, a powerful point of contact that allows for constant connection to customers**. Concerns that platform operators will have a more **profound impact** on consumer and business activities.
 - It is most likely that this situation will **continue over the medium to long term**.

4. Possibility to address the issues through the existing framework

The conventional competition law approach has been to

(1) **pick up particular conduct**, (2) **identify a theory of competitive harm caused by it in a relevant market**, (3) **specifically prove that the harm is occurring** in accordance with the theory, and (4) **implement remedy to eliminate the harm**.

However, competition issues in the digital marketplace, particularly in the **mobile ecosystem that is the subject of this competition assessment is...**

- Caused by an **indefinite and simultaneous (usually) multiple actions** taken at any given layer that the **platform operator can leverage**.
- Even if the competition harm caused by a single act is relatively minor, multiple acts work in a **combined and synergistic manner** to manifest the competition harm. The **harm crosses layers**, or in other words, the **impact is exercised on a different layer** than the one in which the act is performed.
- In addition to these characteristics, there are many **zero-price markets and multi-sided markets**, which make it impossible to use conventional methods. Combined with the difficulty in envisioning future competitors **due to difficulty in predicting technological innovations**, there are difficult aspects in **market definition**.
- Furthermore, **the information necessary for evaluation is unevenly distributed on the side of platform operators**. Thus, it is difficult to identify theories regarding the process by which numerous acts cause competition harm, to **specifically prove that harm is caused in accordance with the theories**, to consider justifications, and to make a judgment, which includes the difficulty in **evaluating qualitative factors** (privacy and customer experience, etc. other than price).

- **Considerable time** is required to reach a conclusion (in the meantime, the competitive environment may change).
- Even if illegality can be proven, there is a risk of repetition of the **same type of competition harm by circumventing the law**.

It may be necessary to consider a different approach from the competition law approach taken so far.

5. Approach to the consideration of options to address the issues in this competition assessment

Regarding the digital market, in particular the mobile ecosystem, which is the subject of this competition assessment,

- Once **tipping** occurs, it leads to a **winner-takes-all situation**, which is **difficult to be overcome through the market mechanism**.
- **It has become clear what types of conduct are at high risk of adversely affecting competition** by platform operators that have formed a mobile ecosystem.



- There could be an **approach that prohibits, in advance, acts that have a high risk** of adversely affecting competition, in principle.
- If so, when **the platform operator indicates that there is some exceptional reason** (e.g. security, privacy protection, etc.) and it is deemed legitimate **after sufficient scrutiny by authority**, it would be possible to take an approach such as **exemplifying that act from the prohibition**.
- There exist information asymmetries about data and algorithms, etc. related to the acts of digital platform operators. Therefore, a mechanism could be considered that would **give regulators the authority to require extensive information and explanations from them**.
- In this competition assessment, **we will consider effective measures** in order to realize the ideal state **without being bound by the constraints of the current legal framework** while keeping the above ideas in mind as options.
- Various new frameworks are also being considered in other countries, and **we will continue conducting our assessment bearing in mind the trends in those countries**.
- **The options** to address issues presented here are only "possible options" and are **not intended to determine to take specific measures**. Rather, they are intended to **present a wide range of ideas, not bound by the current legal framework, as approaches to address issues, to gather ideas on these options from a wide range of interested parties** and to deepen discussions toward the final report.

○ Issues in the mobile ecosystem

- In the mobile ecosystem, the OS, app store, browser, and search service layers **interact with each other in various ways to form, strengthen, and entrench the ecosystem.**
 - Issues on the competitive environment have also **become apparent at each layer.** It is difficult to solve these issues simply by leaving them up to market competition.



- How about considering the measures to address each issue on the **acts in operating systems, app stores, browsers, and search services, in principle?**

○ Possible targets

- Those who are **realizing the formation of mobile ecosystems**
 - = By **providing a mobile OS, or by designing the mobile device including the OS themselves...**
 - **Pre-installation and default setting statuses** for app stores, browsers, search services, etc. have been achieved.
 - The mobile ecosystem has been **formed by a variety of acts at each layer.**

When **an enterprise providing an OS above a certain level of scale offers services in other layers**, should **the acts in the OS and those layers** be positioned as the target in addressing the issue?

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Common types of conduct can be found at each layer of the mobile ecosystem. Therefore, in this interim report, we have organized issues and approaches to address them by dividing them into four different types.

Type	How to understand issues	Major issues and approaches to address them (options)
<p>Rule setting, modification, interpretation and operation within the ecosystem</p>	<ul style="list-style-type: none"> ● Providers of operating systems, browsers, app stores, and search services set and change "rules" that service providers must follow in other layers, etc. ● On the other hand, they are also players in these other layers, and there are concerns about their self-preference in setting and changing the rules. 	<p>[OS]</p> <ul style="list-style-type: none"> ● Approaches to address competition concerns associated with setting or changing rules and specifications for other layers <ul style="list-style-type: none"> → Disclosure of information in setting and <u>changing rules and specifications</u>, etc., ensuring fairness of procedures, monitoring by the government, and necessary intervention by the government. → Addressing <u>concerns about OS providers' time advantage in app development associated with OS updates</u>, etc. (data separation, etc.) ● Approaches to increase competitive pressure among operating systems <ul style="list-style-type: none"> → Addressing concerns about enclosing apps by <u>closed middleware</u>. <p>[App stores]</p> <ul style="list-style-type: none"> ● Approaches to address competition concerns associated with the rule on the app layer <ul style="list-style-type: none"> → Addressing <u>mandatory use of the payment and billing systems of the OS providers</u> (making other payment and billing systems available, etc.) → Addressing <u>restrictions on the provision of information by app developers</u>. ● Approaches to increase competitive pressure in the distribution of apps through app stores, etc. <ul style="list-style-type: none"> → Addressing <u>mandatory use of the app store of the OS provider</u> (making other app stores available, etc.) → Addressing <u>hindrance to sideloading</u>.

Type	How to understand issues	Major issues and approaches to address them (options)
<p>Rule setting, modification, interpretation and operation within the ecosystem</p>		<p>[Browser]</p> <ul style="list-style-type: none"> ● Approaches to address competition concerns associated with setting or changing rules and specifications for the web service layer <ul style="list-style-type: none"> → Disclosure of information in <u>setting and changing rules and specifications</u>, etc., ensuring fairness of procedures, monitoring by the government, and necessary intervention by the government. → addressing <u>reluctance to support web apps</u>. ● Approaches to increase competitive pressure in the browser layer <ul style="list-style-type: none"> → Addressing <u>mandatory use of WebKit</u> in iOS. → Addressing <u>access restrictions on browsers</u> to the functions of OS and others. → Addressing limitations on <u>browser extensions</u>. <p>[Leading web services]</p> <ul style="list-style-type: none"> ● Approaches to address competition concerns associated with specification changes in leading web services (e.g., search services) for other web services or browsers <ul style="list-style-type: none"> → Disclosure of information in <u>setting and changing rules and specifications</u>, etc., ensuring fairness of procedures, monitoring by the government, and necessary intervention by the government.

Type	How to understand issues	Major issues and approaches to address them (options)
<p>Default settings, pre-installation, placement and other promotions, etc.</p>	<ul style="list-style-type: none"> ● Using the position of providing the OS and designing the mobile device including the OS to ensure superiority in each layer through pre-installation and default settings of browsers, search services, etc. → Entrenching the position in the mobile ecosystem and raising competitive concerns. ● Self-preference on search service, a powerful customer contact point as a gateway to the web space (preferred display, promotion). 	<p>[Browser/search services]</p> <ul style="list-style-type: none"> ● Approaches to increase competitive pressure in the browser layer and among search services. → Addressing <u>acts that hinder default switching.</u> → Ensuring that <u>consumers of browsers and search services have the opportunity to make choices based on their substantive decisions.</u> → Addressing <u>uninstallation restrictions.</u> <p>[Search services]</p> <ul style="list-style-type: none"> ● Approaches to address competition concerns associated with the preferential treatment of its own services provided in other layers (apps, web services, browsers, etc.) on search services. → Addressing <u>preferential treatment and promotion of its own services</u> in the display and placement in search services.
<p>Acquisition and use of data, etc.</p>	<ul style="list-style-type: none"> ● Enterprises that provide key services in the mobile ecosystem, such as operating systems, app stores, and browsers, obtain data regarding services provided at other layers that other enterprises cannot obtain. → Concerns that using this data for their own services lead to impede fair and equitable competition in such other layers. 	<p>[OS, browsers, app stores]</p> <ul style="list-style-type: none"> ● Approaches to address competition concerns associated with using data obtained from the OS, browser, and app store on other layers (ensuring equal footing). → Addressing the use of <u>undisclosed data</u> obtained in the capacity of an OS, browser, or app store provider <u>for competition</u> at other layers. → Addressing issues regarding <u>access by third party enterprises</u> to data generated by their business activities. → Ensuring <u>portability</u> of usage data of OS and other services by end-users. → <u>Data separation within the company.</u> → Addressing the <u>addition of services and/or setting these services as default, which are competing with third party.</u>

Type	How to understand issues	Major issues and approaches to address them (options)
<p>Access restrictions to various functions</p>	<ul style="list-style-type: none"> ● An OS provider has OS and browser functions available only for its own services. <ul style="list-style-type: none"> → Impeding competitive equal footing between itself and third parties <p>(Ex.) MiniApp, UltraWideBand, NFC</p>	<p>[OS, browsers]</p> <ul style="list-style-type: none"> ● Addressing competition concerns associated with access restrictions on third parties at other layers to functions (ensuring equal footing) <ul style="list-style-type: none"> → Addressing <u>access restrictions to the functions of OS, browsers, and others.</u>

1. Updates and specification changes in OS and others

<p>Issues</p>	<ul style="list-style-type: none"> ● The following points are raised by third-party developers. <ul style="list-style-type: none"> • <u>Disclosed information is unclear.</u> • <u>No response to inquiries regarding specification details.</u> • <u>Some changes are made to the specifications in the update of the beta version and the specifications are not finalized until just before the release of the OS update, resulting in significant costs.</u> • <u>The short three-month preparation time deprives third-party developers of time that should be devoted to quality improvement.</u> • <u>The specifications change so frequently that it is burdensome to comply with them.</u> ● <u>As mentioned above, there is a concern that the content of the disclosed information, the period and method of notifications, the frequency, and the response to inquiries are not sufficient or appropriate for developers to take the necessary actions when updating their products.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● <u>Predictability and transparency for developers in the areas of apps, browsers, web services, etc. is impaired, and it may create excessive burdens for developers and introduce business uncertainties/risks.</u>
<p>Options</p>	<p>(Option A: Disclosure of information related to updates, appropriate responses to inquiries, and reviews, etc.)</p> <ul style="list-style-type: none"> ● In order to ensure <u>predictability, transparency, and fairness in the series of update and specification change processes</u>, the following package of measures could be developed. <ol style="list-style-type: none"> a. <u>Provide advance notice with sufficient time to respond to updates</u> (mandate an appropriate (longer) preparation period, depending on the magnitude of the impact of the OS update.) b. <u>Appropriate information disclosure regarding the latest version</u> (including those related to the operational aspects of data handover and API linkage in the event of a change.) c. <u>Establish procedures and systems for developer inquiries</u>, and d. <u>Reporting of operational status to the government, and monitoring and review by the government.</u>

2. Time advantage for app development associated with OS updates, etc.

<p>Issues</p>	<ul style="list-style-type: none"> ● Third-party developers may not have sufficient preparation time to adapt to updates and specification changes, and in addition, they may not be able to have sufficient time to improve the quality of their apps. ● On the other hand, as for OS providers, <u>there is a concern that their own app development teams can acquire information on OS updates and specification changes ahead of time to develop apps, and that they can extensively test their developing apps before the OS update release and enjoy the benefit of feedback and evaluation.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● If apps, browsers, and web services are developed in-house by OS providers and <u>can be immediately ready by the release of updates, OS providers may have a time advantage over third-party developers</u> in the development of apps, browsers and web services.
<p>Options</p>	<p>(Option A: Ensure data separation within the company and access fairness)</p> <ul style="list-style-type: none"> ● It may be possible to <u>introduce a rule that requires them not to share information on OS updates and specification changes between the OS department and the development department of apps, browsers, and web services</u> (including the obligation to report the content and implementation status of such measures). ● In addition, <u>it may be possible to introduce a rule requiring the followings from the perspective of ensuring equal footing of access to such information.</u> <ul style="list-style-type: none"> • <u>Disclose information on OS updates and specification changes to their own development department of app browsers and web services and third parties at the same time.</u> • <u>Ensure equitable access to the development environment for pre-release versions of OS codes</u>

3. Tracking rule changes in operating systems (Apple)

Issues

- ATT (App Tracking Transparency) enables data control over targeted advertising and enhances transparency in app tracking.
- Apple requires other advertising providers to display ATT prompts.
- Apple itself does not show the ATT prompt because it does not track the users, and shows another notification for choices. But the tone of that notification is positive and, from the user's point of view, there is a large gap compared to the ATT prompt which developers are required to show. (See figure on the right)



Competition assessment at this time

- It can be argued that Apple is leveraging its position as a rule-setter to influence consumer choice and is creating a favorable situation for its own advertising business model, and thus fair competition in the field of advertising business may be impeded.
- It can be evaluated that app developers are being guided away from the advertising model to the billing model of App Store, which may be advantageous to Apple's own business.
- If OS providers do not provide sufficient prior information disclosure, notification, and response to inquiries when changing the requirement, predictability and transparency in the field of advertising services may be impaired.

Options

- (Option A: Disclosure of information related to rule changes, appropriate responses to inquiries, reviews, etc.)**
- In order to ensure predictability and transparency of the series of processes, it may be possible to develop a package of measures same as <1. Updates and specification changes in OS and others Option A (a)-(d)>.
 - In particular, in cases where there is a risk of serious and imminent harm to the affected businesses as a result of the rule setting/change, it may be possible to further develop a package of measures that incorporates (e) regulatory intervention.
 - e. Necessary collaborative processes (consultation) involving regulatory authorities, and injunctions, etc. (where there is a risk of serious and imminent harm to affected businesses as a result of the rule setting/change).
- (Option B: Prohibit acts that hinder autonomous decision-making by users, etc. in the display of notification to users)**
- In addition to Option A, it may be possible to introduce a rule that prohibits offering choices to end users in a non-neutral manner in the display of notification and hindering autonomous decision-making and choice by users.

4. Tracking rule changes in browsers (Apple)

Issues

- ITP (Intelligent Tracking Prevention) is a feature that can block certain third-party tracking activities from a privacy-conscious perspective. ITP is applied to other advertising providers.
- Since Apple itself does not use tracking cookies, ITP is not applied to Apple.
- Implementing ITP in WebKit to limit user tracking could weaken the targeting accuracy of display ads.
- ITP also reduces the quality of display advertisements viewed by browsers and may lead to a reduction in the attractiveness of web services on browsers.
- It was pointed out that there was not enough time for other advertising businesses to adapt to the rule changes, and that feedback was not accepted, raising concerns that the rule changes may have been made in a one-sided manner.

Competition assessment at this time

- Predictability and transparency in the field of advertising services may be impaired, creating undue burdens for developers and introducing business uncertainty and risks.
- While Apple itself is not affected by the rule change on ITP and is able to acquire data on users as a first party, it can also be evaluated as creating a favorable situation for its own advertising business model. If such acts significantly impair the competition opportunities of other businesses, fair and equitable competition in the field of advertising services may be impeded.
- The advertising business model on the web could become difficult, giving native apps on iOS a relative advantage and Apple's App Store an advantage.

Options

(Option A: Disclosure of information related to rule changes, appropriate responses to inquiries, and reviews, etc.)

- <Same as Option A in 3. Tracking rule changes in OS (Apple)>

5. Tracking rule changes in browsers (Google)

Issues	<ul style="list-style-type: none"> ● <u>Privacy Sandbox would limit the ability of third parties to track users and personalize advertising.</u> ● <u>On the other hand, Google itself, which already has a leading position in the advertising services field, could be able to retain its capabilities related to user tracking.</u>
Competition assessment at this time	<ul style="list-style-type: none"> ● <u>In cases such as insufficient information disclosure and insufficient notification prior to implementation of rule changes, a large number of advertising businesses may experience excessive burdens on development in adapting to browser rule changes, or fail to secure sufficient preparation time, making it difficult to ensure the quality of advertising services.</u> ● <u>Google itself retains user tracking-related capabilities, and if it is able to obtain data on users as a first party, it could create a situation in which its own advertising business model would be favored.</u>
Options	<p>(Option A: Disclosure of information related to rule changes, appropriate responses to inquiries, reviews, etc.)</p> <ul style="list-style-type: none"> ● <u><Same as Option A in 3. Tracking rule changes in OS (Apple)></u>

6. Closed middleware (Google)

Issues	<ul style="list-style-type: none">● <u>While the Android Open Source Project (AOSP) is an open source for mobile devices, Google Play Services (GPS), which provides assistance in integrating third-party apps with Google's apps, is a proprietary API and is not open source.</u>● <u>There are concerns that some apps will not work on AOSP-based operating systems other than Android due to the fact that the most commonly used and influential middleware (GPS) is closed, and there are also concerns that app developers will be discouraged from developing apps that adapt to AOSP-based operating systems other than Android.</u>● <u>This raises concerns that apps will be enclosed in Google's Android-based ecosystem.</u>
Competition assessment at this time	<ul style="list-style-type: none">● App developers are <u>focusing on developing apps for Android, leading to a situation where some functions are not supported on operating systems other than Android.</u>● As a result, some apps may not run on AOSP-based operating systems other than Android, which could <u>lock in (enclose) apps to the Android-based ecosystem provided by Google, favoring Android, which has access to a large number of apps, and disadvantaging AOSP-based operating systems other than Android, thereby impairing a fair and equitable competitive environment among operating systems.</u>
Options	<p>(Option A: Make it mandatory to provide open access to the app development environment)</p> <ul style="list-style-type: none">● <u>In cases where the OS is provided as open source and the development environment for apps is provided, it may be possible to introduce a rule that requires that the development environment must be accessible by the entity that provides its own OS using the open source OS.</u>

7. Mandatory use of App Store (Apple)

<p>Issues</p>	<ul style="list-style-type: none"> ● Apple <u>limits the distribution of apps on the iPhone to only through its own App Store.</u> They do not allow downloads via other app stores or from websites (here, both are referred to as "sideloading"). ● Apple explained <u>that allowing sideloading on the iPhone would compromise privacy and security benefits.</u> ● On the other hand, it has been pointed out that since app distribution is limited to the App Store, <u>fees remain high, and app developers become conservative in innovation because they cannot provide services if their apps are rejected by the review process.</u> ● It has also been pointed out that security and privacy are ensured mainly by the device, and the reality is that apps are reviewed mainly for fraud.
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● The followings are concerns due to Apple's monopoly of the app distribution on iPhone and the lack of competitive pressure. ✓ <u>Fees may be higher than the competitive price,</u> placing a heavy burden on third-party developers and reducing their capacity to invest. ✓ <u>Impeding equal footing with apps that are in competition with Apple.</u> ✓ <u>Fairness and transparency in app reviews and other operational issues at the App Store may be impeding innovation by app developers and competition through the provision of diverse values, thereby undermining consumer choice opportunities.</u> ✓ <u>Privacy protection and security are also important means of competition, but since the use of other app stores is not permitted, competition in the app distribution field may not be functioning to improve and enhance services, including security.</u> ✓ <u>Decrease in competition among operating systems</u> by disadvantaging downloads from browsers independent of the operating system environment.
<p>Options</p>	<p>(Option A: Make it mandatory to allow sideloading)</p> <ul style="list-style-type: none"> ● It may be possible to impose an obligation to allow users to do the followings. <ol style="list-style-type: none"> ① <u>Install third-party app stores and select them as the default.</u> ② <u>Download apps directly through a browser.</u> ③ <u>Hide or uninstall the pre-installed app store.</u> ● Additionally, it may be possible to consider <u>some means to ensure privacy and security (e.g., certification systems and guidelines by related parties, etc.).</u>

8. Hindrance to Sideloading (Google)

<p>Issues</p>	<ul style="list-style-type: none"> ● On android devices, in addition to downloading from Google Play, <u>there are other ways to download apps, that is, downloading from third-party app stores other than Google Play and downloading through websites.</u> ● <u>As for sideloading, Google will display warnings at the time of downloading that the app may be harmful, etc.,</u> because apps through sideloading are not subject to app review by Google and downloading the app may pose a security risk. ● However, it has been noted that <u>the use of sideloading has been slow because warning signs overly discourage sideloading and it involves many procedures.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● The manner in which warnings are displayed (frequency, wording, font, etc.) and their content <u>may cause users to overestimate risks.</u> ● <u>The same warnings are displayed even if the app is not detected as a Potentially Harmful App (PHA) by Google Play Protect (GPP), which may make users overly cautious about security risks.</u> ● In addition, MADA and other agreements <u>may make it easier to use Google Play by having it pre-installed on Android devices and set as the default, while making it harder to take advantage of sideloading.</u> ● Furthermore, the terms and conditions state that developers using Google Play <u>cannot use Google Play to offer their own app stores,</u> which may also make it difficult to use other app stores. ● As a result, Google Play may be mainly used, <u>setting fees at a level higher than the competitive level due to the lack of competitive pressure, and hindering improvements through competition in the service aspect of app stores.</u>
<p>Options</p>	<p>(Option A: Prohibit acts that restrict app distribution through sideloading)</p> <ul style="list-style-type: none"> ● It may be possible to introduce <u>a rule that prohibits limiting the delivery of apps through sideloading.</u> ● In doing so, in order to ensure the transparency and predictability of the regulations, it may be possible to <u>clearly state by way of example that the following acts are prohibited.</u> ✓ <u>Displaying excessive warnings</u> in terms of content, frequency, timing, etc. (e.g., displaying excessive warnings for apps for which safety verification or confirmation has already been conducted). ✓ Making <u>overly complex sideloading procedures</u> necessary. ✓ Providing end-users with choices in any other non-neutral manner or hindering autonomous decision-making or choice.

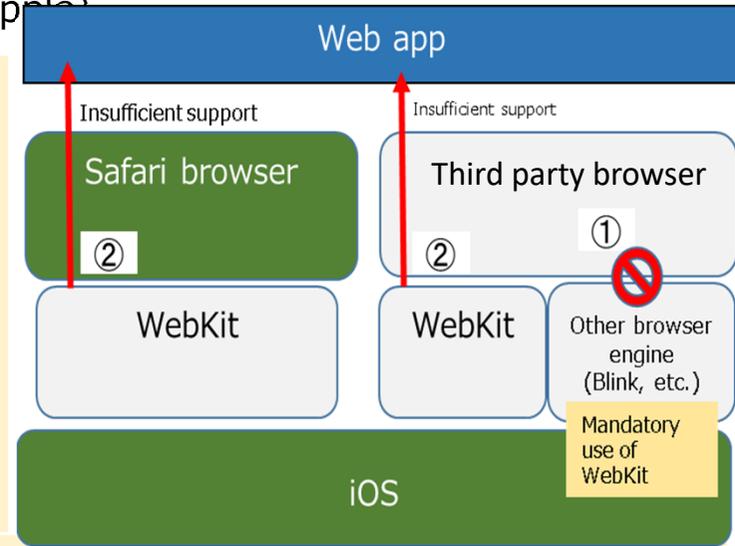
9. Mandatory use of payment and billing systems

Issues	<ul style="list-style-type: none"> ● <u>Third-party developers who use the App Store and Google Play to sell paid apps and in-app content are required to use the In-App Purchase (IAP) system provided by Apple and Google respectively.</u> ● <u>Apple and Google explained that they collect fees for tools and other services provided to third-party developers, and that the IAP is a system for collecting fees and forms a core and essential part of their app stores.</u> ● <u>On the other hand, customer contact information, card numbers, and other payment information are managed by Apple and Google on the IAP, making it difficult for third-party developers to obtain customer information.</u> ● <u>In addition, there are a variety of other concerns that have arisen, as indicated below.</u>
Competition assessment at this time	<ul style="list-style-type: none"> ● <u>The entry of operators offering alternative payment and billing methods that are superior in terms of user convenience, privacy protection and security may be inhibited, and users may be deprived of a choice.</u> ● <u>Third-party developers do not have customer information, which may hinder their ability to contact customers directly, preventing them from providing attentive customer service to users, thereby harming users' interests.</u> ● <u>There may be a lack of competitive pressure for fees, which are the price for using the service, due to lack of competition among payment and billing services, and they may be higher than the competitive level.</u> ● <u>Difficulties in the entry of the other IAPs available for iPhone and Android devices including the IAPs with high portability, etc., may have hindered switching between platforms and negatively impacted competition between operating systems.</u>
Options	<p>(Option A: Prohibit mandatory IAP use)</p> <ul style="list-style-type: none"> ● <u>It may be possible to introduce a rule that prohibits an OS provider from requiring app developers to use an IAP owned or controlled by the OS provider in question when the app developers offer the apps in an app store.</u> <p>(Option B: Prohibit the disruption of communication between developers and users)</p> <ul style="list-style-type: none"> ● <u>In addition to Option A, it may be possible to introduce a rule that prohibits OS providers from preventing app developers from communicating directly with users and preventing them from providing services through it.</u>

10. Restrictions on the provision of information, inducement, etc. of other billing systems, etc. within apps

<p>Issues</p>	<ul style="list-style-type: none"> ● Third-party developers using the App Store and Google Play can promote their services through their own websites, emails, etc. ● On the other hand, <u>inducing users to conduct transactions outside the App Store by posting external links (outlinks) in the app is, with some exceptions, prohibited, in order to prevent "free-riding" to avoid paying fees while using the App Store.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● Outlinks from apps provided in app stores may be a useful source of information on other billing methods, etc., and if links to the company's website, etc. are not allowed in the app, <u>users will be forced to make purchase decisions based solely on the information in the app, without knowing about other plans and pricing offered by the developer on its website.</u> ● As a result, the user's choice of payment and billing services is narrowed, as well as the user's choice of whether to use an app or a web service, and the <u>user's interests may be harmed in that the opportunity for transactions more suited to his/her needs is lost.</u>
<p>Options</p>	<p>(Option A: Prohibit restrictions on the provision of information)</p> <ul style="list-style-type: none"> ● It may be possible to introduce a rule <u>that prohibits OS providers from preventing developers from providing information or making offers for transactions (including doing so within the app and posting outlinks) that include different purchase terms and conditions to users acquired on the relevant app store.</u>

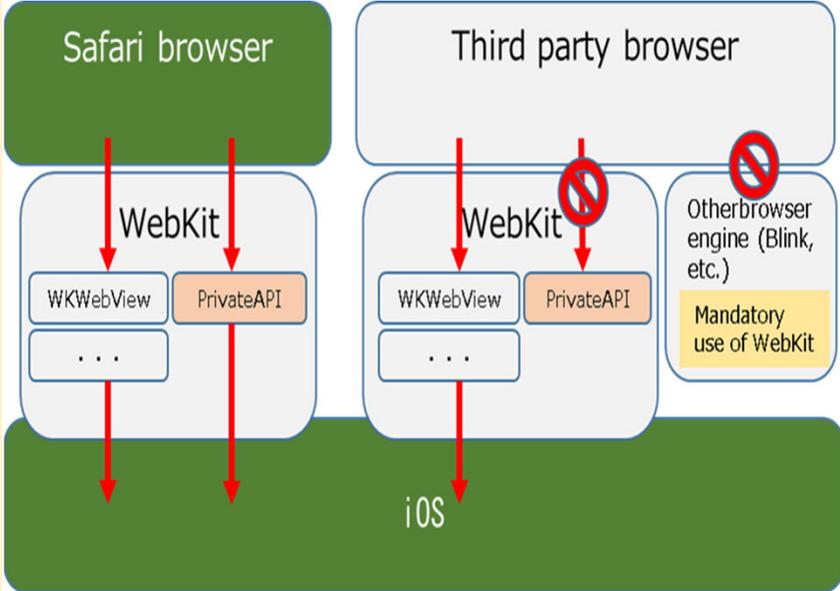
11. Mandatory use of WebKit and reluctance to support web apps in browsers (Apple)



<p>Issues</p>	<p>((1) Mandatory use of WebKit)</p> <ul style="list-style-type: none"> ● Apple <u>limits the browser engine that can be used with iOS to WebKit.</u> ● <u>Browser engines other than WebKit cannot be used for the browsers of third-party enterprises.</u> 	<p>((2) Reluctance to support web apps(*))</p> <ul style="list-style-type: none"> ● <u>It has been pointed out that Apple is delaying or not implementing technical changes to WebKit that are conducive to web app development.</u> <p>*A web app is one that incorporates more features than a regular web page, such as push notifications. Furthermore, PWAs (Progressive Web Apps) with functions similar to native apps are also developing.</p>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● <u>The functions provided by WebKit are not always of the highest quality to ensure security, and the mandatory use of WebKit makes it difficult for third-party providers to offer functions, including security, and it may prevent the opportunity for fair and equitable competition between Safari and third-party providers' browsers.</u> 	<ul style="list-style-type: none"> ● <u>Third-party browsers are forced to provide services based on WebKit, which lacks support for web apps, and competition through ingenuity among browsers may be impeded.</u> ● <u>In addition, web app developers may not be able to fully reach the iPhone users, who make up a large portion of the Japanese market, which may discourage investment and hinder the development of web apps.</u> ● <u>This may also impede competition between web apps and native apps, and by extension, between the gateways of service provision, the browsers and app stores.</u> ● <u>In addition, because of the OS-independent nature of web apps, if the development of web apps is impeded, opportunities for new entrants and switching at the OS layer may be impaired.</u>
<p>Options</p>	<p>(Option A: Prohibit mandatory WebKit use)</p> <ul style="list-style-type: none"> ● It may be possible to <u>introduce a rule that prohibits a OS provider from obliging third-party browser providers to use a particular browser engine.</u> <p>(Option B: Make it mandatory to provide support for web apps)</p> <ul style="list-style-type: none"> ● <u>In addition to Option A, with respect to the provision of browser functionality to support web apps, it may be possible to introduce a rule requiring that the OS provider's browser provide functionality equivalent to that provided by browsers on other mobile operating systems.</u> 	

12. Access restrictions on browsers to the functions of OS and others (Apple)

<p>Issues</p>	<ul style="list-style-type: none"> ● <u>Browsers provided by third-party providers may not be able to access various functions of operating systems and others at the same level as Apple's Safari.</u> ● <u>Apple often develops features that become available in Safari, and after a while makes them available in other WebKit-based mobile browsers.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● <u>Access to some functions of the OS and others may be restricted for browsers of third-party providers.</u> ● <u>Some functions can be accessed by Safari first, but may not be available for some time for other WebKit-based mobile browsers.</u> ● <u>As a result, Safari, which can fully use iOS functions, may gain an advantage, and third-party providers' browsers, which cannot, may be at a competitive disadvantage.</u>
<p>Options</p>	<p>(Option A: Ensure third party browser to access the same functions of the OS and others as OS providers' browser can access)</p> <ul style="list-style-type: none"> ● <u>It may be possible to introduce a rule that requires OS providers to allow third-party browser providers to access the same functions of OS and others as those their own browsers can access.</u>



13. Limitations on browser extensions

Issues

(iPhone)

- iOS does not allow third-party developers that develop browser extensions to provide the extensions for third party browsers through the App Store.

(Android devices)

- The Android OS does not provide (the ability to run) extensions for the Chrome browser itself. But the extensions for other browsers besides Chrome are not precluded on Android devices.

Competition assessment at this time

(iPhone)

- Browsers by third-party providers on iOS may be hampered in implementing the functionality same as or better than Safari, which prevents them from the opportunity to compete.

(Android devices)

- Competition in development of extensions may be impeded, and competition in web services may be impeded through the use of browser extensions to provide new value.

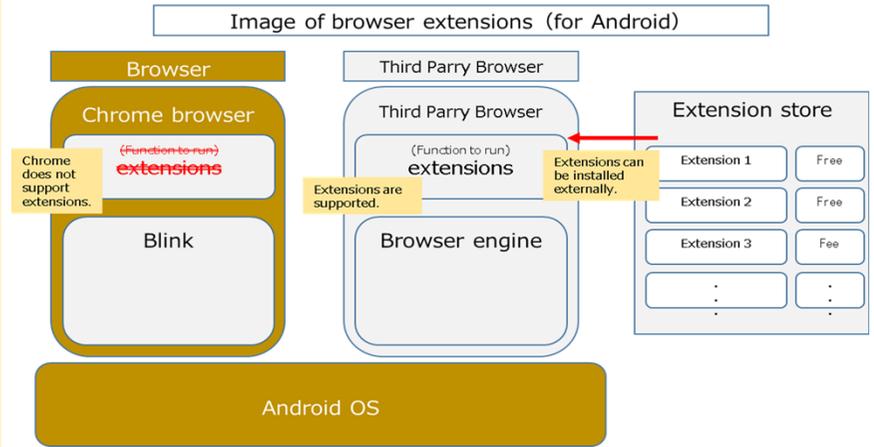
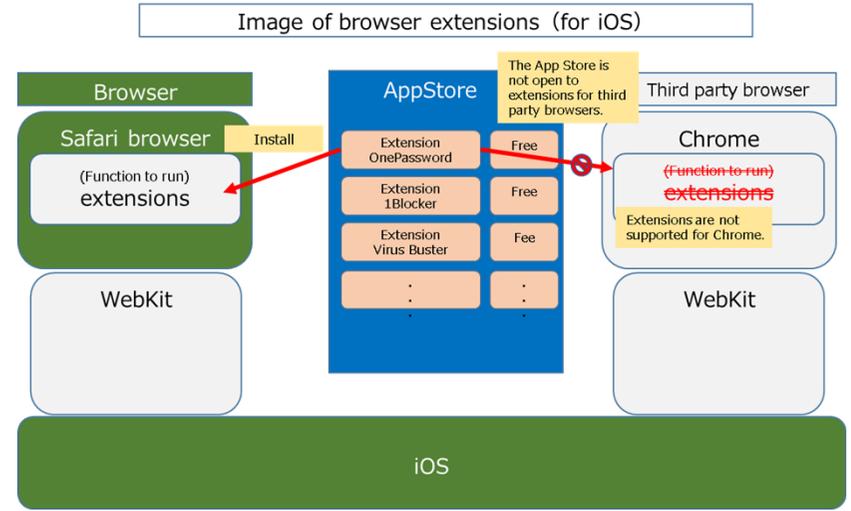
Options

(Option A: Make it mandatory to provide extensions)

- For the convenience of web service users, it may be possible to introduce a rule that requires OS providers' own browsers to support extensions.

(Option B: Ensure access to extensions)

- In addition to Option A, it may be possible to introduce a rule that requires OS providers to provide functionality equivalent to those they provide to their own browsers.



14. Switching costs (due to registration on browser and data linkage with other services)

Issues

- There are differences between Apple and Google in the handling of ID/PW information, bookmark information related to browsing, and other information that can be transferred back to the user or used in other browsers.
- For example, in the case of Apple, although it can be said that the company at least ensures that IDs/PWs are interoperable with browsers provided by third-party providers, there are doubts about whether this will lead to browser switching if transferring are not possible.

Competition assessment at this time

- If a user wants to switch to another browser, and if the user's ID/PW information and bookmark information for browsing managed by each browser cannot be easily transferred, the user will feel inconvenienced and will not be able to switch to another browser, and the user will be locked into the browser he/she is currently using, which may prevent sufficient competition among browsers.

Options

(Option A: Ensure data portability of browser services)

- It may be possible to introduce a rule that requires the provision, free of charge, on a continuous and real-time basis, of tools that facilitate the effective exercise of the portability of data obtained from the use of a browser by an end user, upon request by such end user or by a third party authorized by such end user.

15. Impact on browsers due to specification changes in leading web services (Google)

<p>Issues</p>	<ul style="list-style-type: none"> ● <u>There are concerns that leading web services such as YouTube and search services are not fully compatible across browsers, with the latest features not being provided to third-party browsers.</u> ● <u>There are also concerns that new technical features will be introduced unilaterally, forcing third-party browser vendors to adapt to them.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● For other browser providers, the ability to offer users access to these leading web services, including newly introduced features, <u>with the same quality as others is a factor that could affect the competitiveness of their browsers.</u> ● Therefore, <u>if compatibility between browsers is not sufficiently ensured due to the latest functions not being provided to third-party browsers, the quality of services provided outside of Chrome may deteriorate and third-party browser vendors may be at a disadvantage.</u> ● If the developer of the leading web services introduces a feature that other browser providers <u>have doubts about introducing, the other browser providers may be forced to bear the cost of adapting their own browsers to that feature and, in the process, modifying the specifications to resolve bugs.</u> ● As a result, <u>fair and equitable competition among browser providers may be impeded by the browser provider which can use its own leading web services as leverage.</u>
<p>Options</p>	<p>(Option A: Prohibit self-preference on own browser in setting or changing the specifications of its leading web services)</p> <ul style="list-style-type: none"> ● <u>It may be possible to introduce a rule that prohibits favoring own browser over competing browsers in setting or changing the specifications of one's own web services.</u> <p>(Option B: Disclosure of information related to updates, appropriate responses to inquiries, and reviews, etc.)</p> <ul style="list-style-type: none"> ● <u>As an alternative to Option A, <Same as Option A in 3. Tracking rule changes in Operating Systems (Apple)></u>

16. Standardization of technologies that give the company an advantage in search services (Google)

<p>Issues</p>	<ul style="list-style-type: none"> ● <u>In February 2016, Google made adoption of the Accelerated Mobile Pages (AMP) (*) format a requirement for being displayed in the carousel of top news stories in Google Search (the requirement was removed in May 2020).</u> *Accelerated Mobile Pages is a technology that promotes the faster loading of content. ● Google has explained that AMP is an open source project and was not led by Google. However, it has been pointed out that at the time of implementation, Google was in effect taking the initiative by initially delivering AMP content via Google's servers.
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● <u>While whether or not a website appears at the top of Google's search service has a significant impact on enterprises that provide websites, there is concern that Google has increased the competitiveness of its search business by making the adoption of AMP a requirement for appearing at the top, distributing news services, etc. via its own servers, and spreading the data formats that its own search engine can easily handle.</u>
<p>Options</p>	<p>(Option A: Disclosure of information related to updates, appropriate responses to inquiries, and reviews, etc.)</p> <ul style="list-style-type: none"> ● <Same as Option A in 3. Tracking rule changes in Operating systems (Apple)>

17. Pre-installation and default settings of browsers, search engines, etc.

Issues

- Google concludes license agreements with OEMs, etc., and pre-installs its own browser and search engine or sets them as default through the selection of OEMs which take into account the effect of its economic incentives funded by its huge advertising revenues, etc. Apple has adopted Google Search as the default search engine for the iPhone in exchange for revenue sharing from Google, among other things, while setting Safari as the default built-in browser.
- It is thought that the majority of smartphones in Japan are shipped with Chrome or Safari as the default browser and Google Search as the default search engine.
- Default settings are less likely to be changed on mobile devices due to the user's tendency of status quo bias.
- There are behaviors such as inducing a return to the company's own browser only when the default is switched to another browser.
- In order to enable the users to make choices, it is also necessary to uninstall unused applications to make room in the data capacity.

Competition assessment at this time

- Google's agreements with OEMs and Apple, etc., are considered to have an exclusive effect on competitors in the field of browsers and search engines.
- Apple is in the position of deciding which apps to pre-install and which to set as default, and at its own discretion has set its own browser, Safari, and Google Search as default.
- Given that Android devices and iPhones dominate the market in Japan, the exclusive effect may be widespread, and it may be extremely difficult for third parties to gain a market share and become an effective competitor, and there is concern that the room for competition in the browser and search engine sectors would be significantly reduced or eliminated.

Options

(Option A: Prohibit acts that hinder the user's choice to change default settings)

- In switching defaults by end-users, it may be possible to introduce a rule that prohibits acts that provide end-users with choices in a non-neutral manner or prevent autonomous decision-making or choice (e.g., displaying choices, etc. only when another company's service is set as the default) .

(Option B: Choice system of browser and search engine)

- In addition to Option A, it may be possible to introduce a choice system (choice screen) to provide information on non-default apps (existence of choices, features, etc.) and enable users to switch defaults easily for the browser and search engine.

(Option C: Prohibit restrictions on uninstallation)

- In addition to Option A and Option B, it may be possible to introduce a rule that prohibits the restriction of the uninstallation of major apps such as browsers.

18. Preferential display of its own map service and promotion of its own browser on its own search service

<p>Issues</p>	<p>(Preferential display of its own map service in search results)</p> <ul style="list-style-type: none"> In Google Search, <u>Google Maps search results (e.g. maps) are often displayed at the top of organic search results. This cannot be changed by the user, and if the user wishes to view a different map service, they must scroll down the screen.</u> <p>(Promotion of its own browser in search service)</p> <ul style="list-style-type: none"> Google <u>has been promoting its own browser (Chrome) for more than a decade with ads that encourage users of other browsers to use its own browser (Chrome) when they visit the homepage of Google's services, using space that is not sold for advertising.</u>
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> Given that search services are powerful customer contact points for entry to the web and <u>Google Search is set as the default on most smartphones with a market share of more than 70%,</u> <ul style="list-style-type: none"> ✓ <u>The fact that Google Maps is arranged to appear at the top of search results may have an exclusionary effect on developers of competing map services, significantly reducing the room for competition among map services.</u> ✓ <u>Google's promotion of Chrome using Google Search may have created a substantial customer inducing effect that competing browsers cannot compete with and may have significantly reduced the room for competition in the browser field.</u>
<p>Options</p>	<p>(Option A: Prohibit self-preference on own services by display, etc. in search services)</p> <ul style="list-style-type: none"> It may be possible to <u>introduce a rule prohibiting self-preferences on own services by the display of search services (e.g., ensuring that the company's services are always displayed at the top of the list, displaying its own services frequently and prominently on the top page, etc.).</u> <p>(Option B: Ensure fair treatment for equivalent services from other companies)</p> <ul style="list-style-type: none"> <u>As an alternative to Option A, when prominently displaying a company's own services on the screen showing search results, it may be possible to introduce a rule that requires the company to display the equivalent or similar services of other companies under the same conditions, or to require the company to accept or not reject such display if offered by other companies.</u>

<Example of Google Maps display>



<Example of a Chrome ad>

19. Acquisition and use of data

Issues	<ul style="list-style-type: none">● OS providers <u>can obtain a variety of data in the OS, browser, and App Store that serve infrastructural roles and/or gateway to customers.</u>● They can also <u>use such data and financial resources to hire their own engineers to develop competing services.</u>
Competition assessment at this time	<ul style="list-style-type: none">● If an OS provider uses data on the business activities of third-party enterprises <u>to improve its own apps and web services, or if it does not provide or restricts information (data) obtained from the OS, etc., the environment for fair and equitable competition in the layers of such apps and web services may be impaired.</u>
Options	<p>(Option A: Prohibit use of acquired data in competing services)</p> <ul style="list-style-type: none">● It may be possible to <u>introduce a rule that prohibits the use of data not publicly available pertaining to third-party enterprises obtained from the OS, browser, or App Store to provide services that compete with such third-party enterprises.</u> <p>(Option B: Ensure data access for third-party enterprises)</p> <ul style="list-style-type: none">● <u>In addition to Option A, it may be possible to introduce a rule requiring that data pertaining to such services obtained when the OS, browser, or App Store is used by third-party enterprises to provide services be made available for free, continuous, and real-time access upon request from those third-party enterprises, etc..</u> <p>(Option C: Ensure data portability by end users)</p> <ul style="list-style-type: none">● <u>In addition to Option A and Option B, it may be possible to introduce a rule requiring that, with respect to data obtained from the use of an OS, browser, or App Store by end users, tools facilitating the effective exercise of the portability of such data be provided free of charge, continuously, and in real time upon request by such end users, etc..</u> <p>(Option D: Data separation within the company)</p> <ul style="list-style-type: none">● To ensure the effectiveness of Option A, <u>it may be possible to introduce, as a complement to Option A, a rule requiring data separation between the OS, browser, and App Store departments and the app and web service development departments (including reporting requirements for the content and implementation of such measures).</u>

3. Acquisition and use of data, etc.

20. Adding and integrating functions into the OS, developing apps with functions equivalent to competing apps and setting those apps as default, etc.

<p>Issues</p>	<ul style="list-style-type: none"> ● Apple and Google are thought to have <u>collected data on the use of third-party apps</u> and used it to <u>enhance the functionality of their own operating systems, or to develop competing apps and set them as the default*</u>. *In the case of Android devices, the default setting of apps is the choice of the OEMs, but it is highly likely that Google's apps are extensively set as the default given that there are agreements that include free, package licenses and revenue sharing in exchange for preferential treatment of Google's apps. ● While this has the aspect of <u>increasing user convenience</u>, it cannot dispel the possibility that it has had a <u>significant negative impact on the business activities of competing third-party developers</u>. 	
<p>Competition assessment at this time</p>	<ul style="list-style-type: none"> ● If <u>functions that are virtually identical to functions originally provided by third-party developers as apps are added to the OS, or if OS providers' apps with such functions are pre-installed/defaulted on devices, they will be more readily available to users than third-party developers' apps, which may give Apple and Google a competitive advantage and put third-party developers at a disadvantage.</u> ● Apple and Google can <u>obtain undisclosed data that third-party developers cannot, at low cost, quickly, and in the form of very large data sets, which can then be used to develop their own products and improve their services. As a result, apps and services offered by Apple and Google may have a competitive advantage over their competitors.</u> 	
<p>Options</p>	<p>[In terms of acquisition and use of data] (Option A-Option D) <Same as Options A-D in 19. Acquisition and use of data></p>	<p>[In terms of adding functions that compete with third parties'] (Option E: Prohibit the addition of default settings, etc., for competing apps with third parties')</p> <ul style="list-style-type: none"> ● It may be possible to <u>introduce a rule that prohibits the addition or integration of third-party competing functionality into the OS and the default setting of own apps with such functionality.</u> <p>(Option F: Transparency of the process of adding features, etc.)</p> <ul style="list-style-type: none"> ● <u>As an alternative to Option E, it may be possible to introduce a rule on transparency of the process of adding features, etc. to the OS and ensuring that third parties have the opportunity to be involved in that process. <Same as Option A in 3. Tracking rule changes in OS (Apple)></u>

3. Acquisition and use of data, etc.

21. Social login ("Sign in with Apple" (SIWA)) (Apple)

Issues	<ul style="list-style-type: none"> ● Apple, which is in a position to review apps distributed through its App Store, requires that developers using the App Store indicate "Sign in with Apple" (SIWA), Apple's social login service, as an option when they offer social login.
Competition assessment at this time	<ul style="list-style-type: none"> ● Compared to the case where there is no such requirement, the possibility for users to select Apple's social login is enhanced and Apple can obtain transaction data through social login and use such data to improve its services, which gives Apple a competitive advantage. ● On the other hand, since it is only displayed as an option, it can be thought that the requirement has no exclusive effect and could increase user choice and improve convenience.
Options	<p>(Option A: Prohibit the mandatory display of own services including ID services)</p> <ul style="list-style-type: none"> ● It may be possible to introduce a rule that prohibits requiring developers who use app stores, to use, offer, or interoperate with own services, such as social login. <p>(Option B: Prohibit the use of obtained data in competitive fields)</p> <ul style="list-style-type: none"> ● As an alternative to Option A, it may be possible to introduce a rule that prohibits the use of undisclosed data obtained from social logins, etc., to provide competing services.



<Example of social login>

22. Automatic login to Chrome browser (Google)

Issues	<ul style="list-style-type: none"> ● There is a feature that automatically logs a user into the Chrome browser with the Google account the user are already logged into on the device when the user log in to any of Google's web services, such as Gmail. 	
Competition assessment at this time	<ul style="list-style-type: none"> ● Due to the possible status quo bias regarding default settings, it is likely that in many cases the user will be automatically logged into the Chrome browser and it is not expected that the "do not log in" option will be chosen. ● Since Google can obtain data on Chrome usage and use such data to improve its own services, they may gain a competitive advantage. 	
Options	<p>[In terms of acquisition and use of data] (Option A-Option D) <Same as Options A-D in 19. Acquisition and use of data></p>	<p>[In terms of setting up automatic login] (Option E: Require automatic login to be "off" by default, etc.)</p> <ul style="list-style-type: none"> ● It may be possible to introduce a rule regarding (i) requiring automatic login to be "off" by default, (ii) requiring to obtain prior consent for login, and (iii) prohibiting inducing users to login against their will.

3. Acquisition and use of data, etc.

23. Sending information from the browser only to its own websites (Google)

Issues	<ul style="list-style-type: none">● <u>Chrome implements what is called the X-client-data header, which is included in HTTP (Hypertext Transfer Protocol, a protocol for exchanging web information between a web server and a browser) requests and is sent out only when accessing Google websites.</u>● <u>X-client-data headers are provided to selected user groups prior to the full release of new features, such as improved page loading features in Chrome, in order to ensure that they will function properly when they are introduced.</u> This is done through a system called "Chrome Variant" (an identifier assigned to the end user upon installation of Chrome), known as the "field test".
Competition assessment at this time	<ul style="list-style-type: none">● <u>If the results of the field test are shared with each of Google's services through the transmission of the X-client-data header, it may be possible for only Google's services to work well in relation to Chrome.</u>● <u>Google states that it is not possible to identify individuals by this transmission, but if it is possible to track users in the field test by combining it with other IP addresses, they may be able to develop its services using information that is not known to other web service providers.</u>
Options	<ul style="list-style-type: none">● We will continue studying the issues, <u>including whether it is necessary to take some measures, taking the facts into account and baring the following points in mind.</u>✓ <u>While this act by Google is in the nature of a performance test for the introduction of a new feature, whether it is appropriate to provide web content providers with the opportunity for such a field test.</u>✓ <u>Whether there is an aspect of Chrome's competitiveness that will be enhanced by the increased usability of leading websites through this act.</u>

24. Search query data and other resources (Google)

Issues	<ul style="list-style-type: none">● It has been pointed out that in order for new third-party search engine providers to enter the market, <u>access by such providers to Google's search query data and index should be widely allowed.</u>● Google is opposed to such access for the following reasons.✓ Search query data and indexes are the <u>result of significant investment</u> in proprietary technology to crawl and index web pages quickly and efficiently.✓ Search query data and indexes are not necessary for third-party search engines <u>to enter the market and for fair and equitable competition.</u> In addition, search query data <u>may contain sensitive information.</u>✓ Search query data is not a limiting factor for search engine growth and <u>search engine growth can be achieved by machine learning technologies such as deep learning and small amounts of data.</u>
Competition assessment at this time	<ul style="list-style-type: none">● <u>Because Google is usually used as the default search engine,</u> this may impair the ability of competing search engines <u>to reach users and create barriers to expanding users through network effects, monetizing operations, and improving the quality of search results.</u>● <u>In order for competing search engine providers to generate competitive search results, search engines must overcome economies of scale in crawling and indexing, which may be a barrier to entry.</u>
Options	<p>(Option A: Ensure access to search query data and indexes)</p> <ul style="list-style-type: none">● It is necessary to continue to <u>gather information, including soliciting opinions from interested parties.</u>● (If necessary) It may be possible to <u>introduce a rule that requires ensuring third-party search engine providers to have a means of accessing search query data and indexes when requested by such third-party search engine providers.</u>

4. Restrictions on access to various functions

- 25. Access restrictions on apps to OS functions
- 26. Access restrictions to UltraWideBand (Apple)
- 27. Access restrictions to NFC (Near Field Communication) (Apple)

Issues	<p>(Access to OS functions)</p> <ul style="list-style-type: none"> ● <u>Apple prohibits apps that are subject to app reviews from implementing MiniApps that call native OS functions for third parties.</u> ● <u>It is not thought that it is technically impossible to verify third-party software in the app review process, and we question the validity and legitimacy of a blanket ban on the MiniApp for third parties in question.</u> 	<p>(Access to UltraWideBand)</p> <ul style="list-style-type: none"> ● <u>Apple has limited the use of UWB chips only to its own apps from 2019, when it implemented UWB in iOS11, until at least the end of 2021 or early 2022.</u> 	<p>(Access to NFC)</p> <ul style="list-style-type: none"> ● <u>Apple has not opened up the technical specifications for NFC used in iPhone touch payments and requires the use of Apple Pay to access the NFC chip.</u> ● <u>It is pointed that this means developers of payment apps are incurring additional costs to comply with the Apple Pay specifications, and that they cannot directly access the large number of end users in Japan with their own apps.</u>
Competition assessment at this time	<ul style="list-style-type: none"> ● <u>Competition through various value offerings utilizing the MiniApp may be impeded.</u> ● <u>If Apple can provide the same value offering as MiniApp without using MiniApp, but denies access to MiniApp to other app developers, fair competition with apps that compete with Apple may be impeded.</u> 	<ul style="list-style-type: none"> ● <u>Apple is in a position to develop apps using UWB chips more than a few years ahead of third-party developers, and to improve apps based on user feedback.</u> ● <u>Apple could gain a competitive advantage as a leader in the field of app development using UWB chips.</u> 	<ul style="list-style-type: none"> ● <u>App developers seeking to provide payment services directly using NFC functionality may be prevented from the opportunity to compete on an equal footing with Apple.</u>
Options	<p>(Option A: Ensure equivalent, or transparent, fair, reasonable and non-discriminatory access to the functions of OS and others)</p> <ul style="list-style-type: none"> ● <u>It may be possible to introduce a rule requiring that the functions of OS and others be granted access equivalent to the company's own services, or transparent, fair, reasonable and non-discriminatory access if the company does not use the same functions.</u> 		

- This interim report have summarized the issues surrounding the competitive environment in the mobile ecosystem and have presented possible options to address these issues and points to keep in mind.
- However, this is a tentative proposal, including the options to address issues in this interim report, and no decisions have been made. Rather, the purpose of this report is to clarify and publicize the issues to be discussed and examined in the future, and to solicit opinions and ideas of concerned parties in a broad manner in preparation for the final report.
- Therefore, the following "items for which we would like to receive your opinions" are included in each issue mentioned above, and we will receive opinions from a wide range of concerned parties through the public comment procedure.

(Example)

(Main items for which we would like to receive your opinion regarding this matter)

1. Additional information on facts and concerns

- Is there additional information (e.g., additional or supplemental specific examples) regarding the facts and concerns?

2. Effectiveness of the options

- Will options effectively solve the issues? What kind of benefits will the option bring?
- Other than the options written in the report, are there any other options to effectively solve the issues?

3. Possible costs and risks with the options implemented

- What kind of costs and risks will be raised if the options are implemented?
- What kind of measures can be considered to mitigate those costs and risks?

- Based on the opinions received, we will hold hearings, exchange views with concerned parties and experts, study and organize measures to address the issues, and will publish a final report, taking into account the result of the fact-finding survey to be released by the Japan Fair Trade Commission. We appreciate your continuous cooperation.