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Cloud Computing as Key Digital Infrastructure to Achieve Japan's Sustainable Development Goals (SDGs) Challenge: A Potential "Revival" of Competition Analysis

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Abstract: Cloud computing services have evolved as key digital infrastructure for a digital economy; furthermore, they could potentially lead to the "revival" of an analytical competition law framework to balance anti-competitive effects and justification. Recently, various competition authorities have been scrutinizing cloud computing service providers ("CSPs") suspected of abusing their superior bargaining position by taking "advantage" of "vendor lock-in". On the other hand, CSPs provide agility, diversity, flexibility, scalability, and cost-efficiency that enable start-ups to develop innovative cloud-based software and solutions and strengthen their competitive advantage. Also, the Japan Fair Trade Commission ("JFTC") has published the draft "Guidelines Concerning the Activities of Enterprises, etc. Toward the Realization of a Green Society under the Antimonopoly Act" (Draft Green Guidelines") and explained that the benefits of SDGs, including the reduction of greenhouse gas emissions, can be considered justification for anti-competitive conduct. Thus, the competition policy's interaction with environmental policy, education/healthcare policy, and governmental digital transformation has become an emerging issue. In this regard, two theoretical issues must be addressed in order not to turn the competition law into a self-satisfying regulation. First, the definition of "relevant markets" must be revisited. Historically and theoretically, conduct was generally assessed by each market, regardless of whether the conduct generates consumer benefits in one market that may overcome the anti-competitive effect in another market. However, in 2021, a new regulatory framework aimed at digital platforms that regulate interactions between multi-sided markets came into effect in Japan (the Act on Improving Transparency and Fairness of Digital Platforms ("TFDPA")), which hints at building an analytical framework that will encompass effects in neighboring fields. Second, there needs to clarification about whether the environmentally friendly effects that cloud computing services trigger in other jurisdictions should be taken into account in Japan; accordingly, it is necessary to examine the geographical scope of the justification of anti-competitive conduct in terms of a common global agenda like SDGs.

Key words: cloud, competition, sustainability, digital, software
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1. Summary

Cloud computing services have evolved as key digital infrastructure for a digital economy; furthermore, as

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detailed in this article, it could potentially lead to the "revival" of an analytical competition law framework to balance anti-competitive effects and justifications, such as promoting renewable energy and competition, in cloud-based emerging services. Recently, various competition authorities have been scrutinizing cloud computing service providers ("CSPs") suspected of abusing their superior bargaining position by taking "advantage" of "vendor lock-in". On the other hand, CSPs provide agility, diversity, flexibility, scalability, and cost-efficiency that enable start-ups to develop innovative cloud-based software and solutions and strengthen their competitive advantage. Moreover, in Japan, (i) cloud data centers have emerged as renewable energy and de-carbonization leaders, (ii) CSPs have contributed to online education and healthcare services, and (iii) CSPs have enabled the Japanese government to conform with foreign governments that have adopted digital transformation and digitization of administrative operations. Moreover, the Japan Fair Trade Commission ("JFTC") has published the draft "Guidelines Concerning the Activities of Enterprises, etc. Toward the Realization of a Green Society under the Antimonopoly Act" ("Draft Green Guidelines") and explained that the benefits of SDGs, including the reduction of greenhouse gas emissions, can be considered justification for anti-competitive conduct. Thus, the competition policy's interaction with environmental policy, education/healthcare policy, and governmental digital transformation has become an emerging issue. In this regard, two theoretical issues must be addressed in order not to turn the competition law into a self-satisfying regulation. First, the definition of "relevant markets" must be revisited. Historically and theoretically, conduct was generally assessed by each market, regardless of whether the conduct generates consumer benefits in one market that may overcome the anti-competitive effect in another market. However, in 2021, a new regulatory framework aimed at digital platforms that regulate interactions between multi-sided markets came into effect in Japan (the Act on Improving Transparency and Fairness of Digital Platforms ("TFDPA")), which hints at building an analytical framework that will encompass effects in neighboring fields. Second, there needs to clarification about whether the environmentally-friendly effects that cloud computing services trigger in other jurisdictions should be taken into account in Japan; accordingly, it is necessary to examine the geographical scope of the justification in terms of common global agenda like SDGs.

2. Emergence of Cloud Computing Services in Japan

Recently, Japan has been struggling with the digital transformation of its society, and the Japanese government recognizes that cloud computing services will be a key digital infrastructure for the digital economy in Japan[1]. The following section reviews recent developments in policies regarding cloud computing services in Japan, which seem to have been affected to some degree by the policy proposal in the EU.

The term "cloud computing services" actually includes various types of services such as IaaS[2], PaaS[3], and

[1] Cabinet Office, Data Strategy Task Force, "Comprehensive Data Strategy", June 18, 2022, pp. 43-44.
[2] Infrastructure as a service: customers rent computers, servers, and storage from the CSP, and are able to access these resources via the Internet.
[3] Platform as a service: CSP hosts a customer's application development environment, through which the customer can design, test, and develop new applications.

SaaS[4] in various forms, such as public[5], private[6], hybrid[7] and multi-cloud[8]; moreover, they further vary depending on the technology and commercial developments (Minjae Song, December 2021, pp. 7-12). These types of services can be ordered based on the degree to which the customer operates and outsources its IT resource management, and the order should be the traditional IT (on-premises IT), IaaS, PaaS, and SaaS in increasing order of degree (Rolf Harms & Michael Yamartino, December 2021). Common examples of IaaS include Amazon Elastic Compute Cloud (EC2), Google Compute Engine, and Microsoft Azure; common examples of PaaS include AWS Elastic Beanstalk, Google App Engine, and Salesforce's Heroku; and common examples of SaaS include Google Docs, Slack, and Mailchimp.

Among these types of cloud computing services, the customer examines whether and how to adopt cloud computing services by taking into account the advantages offered by the cloud computing services such as the availability, scalability, elasticity, risk reduction, cost savings, security as well as disadvantages such as the loss of ownership over server hardware and latency (Minjae Song, December 2021, pp. 40-43). That said, it should be noted that cloud computing services are still a small part of all IT resources available to customers. In Japan, cloud computing services have gradually penetrated some fields such as manufacturing, education, healthcare and governmental authorities; and the Japanese government has declared that it will promote the adoption of cloud computing services further (cloud by default) (Digital Agency of Japan, December 24, 2021), but these efforts are still in the early stage (Deloitte Touche Tohmatsu Limited, April, 2022). These Japanese governmental authorities' decision to actively promote the adoption of cloud computing services could have been inspired by the GAIA-X project in the EU (Data Strategy Task Force within the Cabinet Office of Japan, June 18, 2022, p. 28) that was established based on German and French initiatives to build up the fundamental basis for combining and sharing data on cloud computing services.

3. Recent Development in Competition Law and Policy on Cloud Computing Services

Against the background described in Part II above, the Japan Fair Trade Commission ("JFTC"), which is the Japanese competition authority, conducted a survey of cloud computing services based on the suspicion, in particular, that CSPs could be engaging in abusive conduct by using the vendor lock-in situation, and other competition authorities also have started looking into competition assessments of cloud computing services. The following summarizes these developments.

3.1 International Developments

There seem to be some developments in the international discussion about how competition policy applies to cloud computing services, although the discussion has just begun.

(1) The U.S.

On October 6, 2020, the Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary published a report titled "Investigation of Competition in Digital Markets"[9] that contains a holistic

[4] Software as a service: customers use a CSP's software, which is hosted in the cloud and accessed through the Internet.
[5] A deployment method in which multiple unaffiliated customers share computing resources in the multi-tenancy model at a remote data center managed by the CSP.
[6] A deployment method in which the cloud environment is used by a single customer, sometimes for specific functions.
[7] An IT strategy in which a customer uses any combination of the core deployment methods described above, including traditional on-premise, public cloud, private cloud, and/or community cloud.
[8] A practice of using multiple CSPs across one or more of the above deployment methods.
[9] Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, "Investigation of Competition

survey of the business model and the anti-competitive concerns raised by the large tech companies in the U.S., as well as proposals to enable the competition authorities to more effectively tackle such anti-competitive concerns, including amendments to the U.S. anti-trust laws such as the Sherman Act, Clayton Act, and FTC Act. The report referred to cloud computing as "the service that enables remote storage and software programs on demand through the Internet", and recognized that "[c]loud computing is a critical input to many of the digital markets the Subcommittee investigated, providing infrastructure for online commerce, social media and networking, digital advertising, voice assistants, and digital mapping — technologies that benefit from dynamic storage and computational power. In a future with smart homes, autonomous vehicles, and artificial intelligence applications in nearly every sector from agriculture to healthcare, understanding the dynamics of the cloud market becomes critical. These ground-breaking technologies work because they can access and analyze massive amounts of data in real time, companies looking to innovate in these spaces will struggle to rely solely on traditional I.T. and will likely turn to public cloud vendors."[10] Also, the report said that "[i]ndustry reports suggest that the cloud computing market is consolidating around three providers domestically — AWS, Microsoft Azure, and Google Cloud Platform."[11]

That said, the report stated that, "[w]hen asked about lock-in, many market participants discussed how in response to the rise of a few dominant platforms in the cloud market, new strategies have emerged to increase portability between vendors and allow customers to use multiple clouds", and "[a]lthough third-party vendors can sell their service directly to consumers through their own websites, many smaller cloud vendors use the marketplaces of the dominant infrastructure providers to reach customers, which require fees and are subject to competition concerns that are similar to other marketplaces examined by Subcommittee staff during the investigation. Market participants have raised concerns that cloud infrastructure providers can prioritize their own offerings, or offer these products with exceedingly steep discounts, making it difficult for third-party software vendors with fewer products to compete.[12]"

(2) The EU

On January 20, 2022, the European Commission published the market survey report and the staff working paper based on the sector inquiry with IoT services and referred to the roles and functions of cloud computing services used in IoT services such as voice assistants. In the staff working paper, the cloud computing service was defined as "a digital service that enables access to a scalable and elastic pool of shareable computing resources" pursuant to Art. 4(19) of the NIS Directive ((EU) 2016/1148), and there has not been any description that raised anti-competitive concerns specifically from cloud computing services; rather, the respondents to the survey said that the lack of access to cloud services just constitutes a very small portion (approx. 3%-5%) of the barriers to entry or expansion into the IoT segment, although the staff working paper referring to one of the respondent's responses explained that the investment cost of developing the cloud computing service would be quite high as background information for examining the possible anti-competitive concerns in the field of voice assistants (European Commission, January 20, 2022, pp. 39-41).

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in Digital Markets", October 6, 2022.

[10] Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, "Investigation of Competition in Digital Markets", October 6, 2022, pp. 109-110.

[11] Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, "Investigation of Competition in Digital Markets", October 6, 2022, p. 114.

[12] Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, "Investigation of Competition in Digital Markets", October 6, 2022, pp. 119-120.

The discussion about the competition policy in the field of cloud computing services can also be observed in the EU member states' competition authorities. For example, on June 19, 2019, the German competition authority explained during the merger review of the planned acquisition of T-Systems by IBM that what needed to be considered was that any possibility for customers to switch to other data center systems or cloud solutions involves a very high investment.[13] As a more relevant fact, on January 27, 2022, the French competition authority announced the launch of a market survey of cloud computing services; it is expected to publish the findings in early 2023.[14] According to the French competition authority, the survey will especially focus on examining the competitive dynamics of the sector and the presence of players in the various segments of the value chain, as well as their contractual relationships, in an environment in which multiple alliances and partnerships are concluded for the provision of cloud services, and also on defining the relevant markets in the cloud sector, assessing the position and competitive advantages of the various players involved and examining the commercial practices that may be established.

Separately, among academics in the competition law space in the EU, Cloud Infrastructure Services Providers in Europe ("CISPE"), which is a non-profit organization comprising the CSPs who provide services in the EU, published a paper titled "Cloud Infrastructure Services: An analysis of potentially anti-competitive practices". The paper outlines the actual competition situation and the industrial structure in the cloud computing service market, and provides a list of possible anti-competitive conduct based on a holistic understanding of the dynamic nature of the cloud computing service industry. At the outset, the paper pointed out that the definition of the relevant market based on the various service types such as IaaS, PaaS and SaaS would be in line with the EU's court precedents, and the relevant markets should not be defined rigidly, but rather, flexibly in order to reflect emerging new service models such as the BaaS and FaaS.[15] In addition, the paper referred to a number of adjacent services for cloud computing services such as business tools (e.g., Office 365, Google Workplace, Oracle, SAP) and operating systems (e.g., iOS/Android, Windows, MacOS, Linux).[16]Thus, competition surrounding cloud computing services can be observed leveraging the competitive advantages of attractive software (e.g., a large traditional company tends to prioritize continuous use of existing software even after adopting cloud computing services). Therefore, the competition authority should keep in mind during its competition assessment whether the conduct at issue involves the "naked" CSPs who do not necessarily have the competitive advantage of their software, or CSPs who are capable of combining the competitive advantage of not only their cloud computing services but also their software.[17] Based on this understanding, the paper outlines the type of relevant anti-competitive conduct in light of the EU's competition law. First, from the perspective of conduct to excluding a competitor, there could be (i) the tying of low priced cloud computing services and high license fee software that is closed (i.e., not open source software), (ii) prioritizing its software to maximize the functionality of its cloud computing service compared to other software, (iii) raising the rival's cost through frequent and unstable updates and changes in specifications, and (iv) utilizing high entry barriers due to the high cost of researching and developing the software and infrastructure to force customers to enter into long-term agreements. Second, from the perspective of exploitative conduct with respect to

[13] Bundeskartellamt (June 19, 2019). "Bundeskartellamt examines the effects of a planned acquisition of T-Systems assets by IBM on the market for mainframe infrastructure outsourcing", p. 5.
[14] Autorité de la concurrence, "The Autorité de la concurrence starts proceedings ex officio to analyze competition conditions in the cloud computing sector", January 27, 2022.
[15] Frederic Jenny (October, 2021). "Cloud Infrastructure Services: An analysis of potentially anti-competitive practices", pp. 11-14.
[16] Frederic Jenny (October, 2021). "Cloud Infrastructure Services: An analysis of potentially anti-competitive practices", pp. 17-21.
[17] Frederic Jenny (October, 2021). "Cloud Infrastructure Services: An analysis of potentially anti-competitive practices", p. 21.

customers who are locked into the use of a certain cloud computing service, there could be frequent amendments to licensing terms, including an increase to an excessively high price, and forcing customers to repeatedly purchase "new" services for the unexpected long-term. Third, from the perspective of ensuring a sound competitive environment through competition policy, conduct that forces customers to provide commercially sensitive information for the purpose of unfairly soliciting those customers to switch from other CSPs.[18]

3.2 JFTC's Market Survey

The JFTC published a market survey report on the procurement and adoption of cloud computing services in the public sector on February 8, 2022;[19] on April 14, 2022, it announced[20] the launch of a market survey of the procurement and adoption of cloud computing services in the private sector, and it is expected to publish the results of the survey in the future.

(1) Public Sector

Based on the Japanese government's policy called government cloud or cloud by default principle to promote the adoption of cloud computing services, the JFTC's report generally encourages IT service providers, including CSPs, as well as governmental authorities to adopt open specifications and open source software, thereby avoiding the vendor lock-in situation, which means that the IT service providers are able to impose unfair terms and conditions on governmental authorities by using the situation whereby governmental authorities would not easily be able to terminate an existing relationship with an IT service provider and switch to another IT service provider due to heavy reliance on the existing on-premises IT functions as well as the lack of portability, interoperability, skills and budget.[21] That is, the JFTC's focus seems to be directed first at moving away from the existing, traditional and complex on-premises IT service environment that has been broadly adopted within governmental authorities to cloud computing services by exemplifying the possible anti-competitive behavior of the existing IT service vendors; therefore, the issues relating to being locked into major CSPs and switching between such large CSPs that have been discussed in other jurisdictions, such as the U.S. and the EU, could be addressed as the "second step" for the Japanese IT situation.

Interestingly, in the JFTC report, while traditionally it would be normal for the JFTC to merely list conduct that may have an anti-competitive effect and not provide any hints about the circumstances in which the business operator can engage in such listed conduct, it explained in what situations CSPs' sales activities would not be considered undue interference with competitors' transactions.[22] For example, it is recommended that CSPs (i) explicitly identify that the proposed service is the CSP's unique service or a form of commodity, (ii) refrain from engaging in deceptive communications with customers during their preparation of the service specifications and determining the bidding system, (iii) avoid introducing requirements that cause customer's to misunderstand that only the involved CSP is capable of fulfilling the requirements, and (iv) provide reasonable evidence where the CSP seeks to explain that the required specification can be met only by that CSP and cannot be substitutable for another CSP.[23] This description is meaningful in terms of determining the definitive factors used to distinguish conduct that

[18] Frederic Jenny (October, 2021). "Cloud Infrastructure Services: An analysis of potentially anti-competitive practices", pp. 32-47.
[19] JFTC (February 8, 2022). "Market survey on IT system procurement in the public sector".
[20] JFTC (April, 14, 2022). "Minutes of regular press conference of secretary general".
[21] JFTC (February 8, 2022). "Market survey on IT system procurement in the public sector", pp. 4-5, 8-9, 14-15, 19-20, 26, 50-51, 53-54.
[22] JFTC (February 8, 2022). "Market survey on IT system procurement in the public sector", p. 48.
[23] In November 2021, the JFTC reportedly raided two IT systems development companies on suspicion of undue interference with competitors' transactions, which is one of the unfair trade practices prohibited under the Anti-Monopoly Act of Japan. Although the

falls within "sound competition" on its merits from that which falls outside sound competition, which should be clarified in order to avoid an unnecessary chilling effect on innovative services.

Separately, the JFTC has requested that the Digital Agency, which is the governmental authority leading the digital transformation of Japanese governmental authorities, including local governments, provide support in relation to the budget and skills that are necessary to adopt cloud computing services, and to establish appropriate guidelines or standards in relation to the procurement of cloud computing services.[24] Although the specific interaction between the JFTC and the Digital Agency has not been described, this may imply that the conduct pursuant to the guidelines or standards prepared by the Digital Agency could generally be considered to be sound sales activities for cloud computing services.

(2) Private Sector

In addition to the market survey of the public sector, the JFTC launched a market survey of cloud computing services in the private sector, and the survey is ongoing. During the market survey, the JFTC held a meeting with experts who are specialized in IT services on March 30, 2022. In the meeting, based on the survey thus far, the JFTC expressed a recognition of the current competitive situation surrounding cloud computing services whereby (i) the price of IaaS has gradually decreased in Japan, but (ii) the small number of CSPs have a high market share and have exploited the economy of scale, the scope of the economy, indirect network effects, and a wide range of other complementary services, and (iii) there is a switch from cloud computing services that are currently used to other IT services, including on-premises IT services and CSPs.[25] In addition, the JFTC further referred to possible anti-competitive concerns in relation to cloud computing services such as the strategy for foreclosing existing customers within its ecosystem (e.g., high data transmission fees), self-preferencing the licensing terms for its own software to be used on its IaaS compared to usage on other IaaS, and access to the non-public information of the CSP's customers who use the CSP's cloud computing service and compete in other IT services.[26]

4. Issues to Be Addressed

While cloud computing services have definitely been assuming a key role in facilitating the digital transformation of Japanese society through various means, as shown in Part II, the JFTC as well as other competition authorities have been seeking to identify possible anti-competitive conduct before concerns become a reality as observed in Part III. However, when it comes to the situation in Japan, as revealed in the JFTC's report on the market survey for the procurement of cloud computing services in the public sector, it is still in the early stages of adopting cloud computing services, and of detaching from the traditional on-premises IT environment; the same would apply to the private sector. In addition, in Japan, promoting the adoption of "green" technology, including cloud computing services based on data centers using renewable electricity, has also just started; and no concrete conclusion has been reached on how the environmental benefits provided by cloud computing services can be taken into account when assessing possible anti-competitive conduct. Considering this situation in Japan, there have been calls to clarify the balanced analytical framework for assessing competition, in particular, (i) how can dynamic competition in the

connection between this case and the market survey is not clear, the JFTC reportedly focused on the conduct of the system development companies that forced customers to include a requirement prohibiting the use of open source software in their specifications, through which the companies sought to exclude their competitors.

[24] JFTC (February 8, 2022). "Market survey on IT system procurement in the public sector", pp. 15, 20, 26, 39-40, 45, 51, 58.

[25] JFTC (March 30, 2022). Secretariat Material at the Opinion Exchange Meeting regarding Cloud Service, p. 11.

[26] JFTC (March 30, 2022). Secretariat Material at the Opinion Exchange Meeting regarding Cloud Service, p. 15.

market related to various types of cloud computing services and various related products be captured, and (ii) what can be the definitive factors to distinguish conduct that falls within sound competition on its merits, or is outside sound competition activity, in order to avoid causing an unnecessary chilling effect on , in particular, the adoption of cloud computing services in Japan to facilitate environmental benefits appropriately.[27]

4.1 Dynamic Competition in the "Market" and Cloud Computing Services

The first issue is how do we provide a basis for assessing the competitive effect through the market definition in a way that effectively and comprehensively covers dynamic competition in relation to cloud computing services.

(1) Relevant Market Definition Methodology in the Context of a Digital Economy

At the outset, we may learn something from the experiences in the EU and U.S. The EU is seeking to amend the Notice regarding the market definition (97/C 372/03), thereby clarifying the possibility that the geographic scope of the relevant market concerning digital services could be defined as the global market, and also taking into account the effect realized across multiple relevant markets for assessing the impact on the ecosystem.[28] Also, in the U.S., the Supreme Court's judgement in the Amex case provides certain guidance on how the two-sided market is considered to be defined as the relevant market; and if there were close interactions between the different sides of customers ("pronounced indirect network effects and interconnected pricing and demand"), both sides would constitute a single relevant market. Thus, the competition authority is required to prove the anti-competitive effect in the relevant market as a whole by considering the possible pro-competitive effect that may arise in one of the markets,[29] although there have been extensive discussions about to what extent the ruling can apply to other cases.

(2) Relevant Market Definition in Japan

As with the EU and the US, the fundamental work of defining the relevant market, which provides the basis for conducting a competition assessment, can be carried out by analyzing the demand-side substitutability as well as the supply-side substitutability as a complementary factor. The details are explained in the merger control guidelines.[30] as well as the unfair trade practices[31], and it is generally understood that this can apply to any other types of regulation under the competition law, such as the regulation against unilateral conduct.[32] However, although the merger control guidelines have been updated by reflecting the guide provided by the U.S. Supreme Court in the Amex case, as well as by clarifying that the traditional framework can still apply to services provided via the Internet, the methodology of defining the market has not been "deepened" to specifically address the features of the digital economy, such as cloud computing services.

More specifically, when it comes to the relevant market definition for cloud computing services, as shown in Part II, there have been various types and ranges of service provisions, and they are still developing dynamically. Therefore, as a starting point, it is important that the relevant market be defined in such a way that enables the

[27] OECD (November 18, 2021). "Environmental Considerations in Competition Enforcement - Background Paper by the Secretariat", pp. 17-19.
[28] European Commission (July 7, 2021). "Commission Staff Working Document Evaluation of the Commission Notice on the definition of relevant market for the purposes of Community competition law of 9 December 1997".
[29] Ohio v. Am. Express Co., 138 S. Ct. 2274, 2290 (2018).
[30] JFTC (May 31, 2014). "Guidelines to Application of the Antimonopoly Act Concerning Review of Business Combination", (as amended).
[31] JFTC (July 11, 1991). "Guidelines Concerning Distribution Systems and Business Practices," (as amended).
[32] In this regard, the legal text of the regulations against unfair trade practices under the Anti-Monopoly Act, which can be triggered by a lower threshold compared to the regulations against private monopolization (i.e., regulations against the abuse of a dominant position), would not necessarily require a definition of the relevant market; however, in practice, the relevant market has been defined for purposes of assessing the effect on competition, such as the applicability of the safe harbor.

competition authorities to conduct a holistic review, as well as for business operators to conduct appropriate self-assessment of the possible effect on conduct by considering the dynamism of competition surrounding cloud computing services. Then, traditionally and generally, in principle the relevant market should be defined by the type of service offered; thus, given that an anti-competitive effect arising in a market is not overcome by a pro-competitive effect arising in the same market, even if the conduct at issue provides a pro-competitive effect in another but related market, its anti-competitive effect still constitutes a violation of the Anti-Monopoly Act.

However, the competition that cloud computing services causes or facilitates would be more dynamic. More specifically, two different types of competition regarding cloud computing services can be observed: (i) competition on cloud computing services (competition among services created on cloud computing services); and (ii) competition among cloud computing services. Then, regarding competition on cloud computing services, there would be an argument that such competition can be restrained for the purpose of promoting competition among cloud computing services. On the other hand, regarding competition among cloud computing services, there also is an argument that such competition can also be restrained for the purpose of facilitating the investment and improvement of competition on cloud computing services. For example, even if the CSP ties its cloud computing services to its proprietary software and thereby restricts competition in the affected cloud computing service or software market, the CSP may argue that such restriction could be justified because of the pro-competitive effect in the software market where the CSP enables customers to develop new software using the resources of cloud computing services, and to facilitate their innovations.[33] However, if the promotion of competition in the secondary market means promotion based on the development of new software only by CSP itself, this pro-competitive effect argument would be challenged by the counterargument that such effect is based on an abusive utilization of the network effect between customers in the cloud computing service and the software market or based on unfair self-preferencing. In fact, the Competition Policy in Digital Market Study Group established at the JFTC published a report and referred to the interactions between cloud computing services and the AI platform that enables CSP in itself to further develop and strengthen the software using the AI platform in order to obtain the competitive advantages.[34] These possible arguments reflecting the dynamic state of the cloud computing services should be appropriately addressed in the competitive analytical framework.

In this connection, the JFTC may adjust the enforcement practice by deprioritizing such a case in which the conduct at issue may have a pro-competitive effect in the economy to a certain extent; and if that approach is workable in practice, the business operator would not necessarily suffer from an unpredictable or opaque enforcement of the Anti-Monopoly Act. However, there would still be legal uncertainty, and such uncertainty would lead to a significant chilling effect on companies who tend to take a conservative or risk-averse approach. This type of chilling effect would become larger for local companies since those companies would more frequently gauge the local regulator's feelings compared to foreign companies. Therefore, the traditional market definition framework should be revisited in order to examine how the work of defining the relevant market would function theoretically.[35] On this point, recently, Japan enacted the TFDPA, which became effective from February 1, 2022. The TFDPA is

[33] An argument also could be made that there is no "tying," in that multiple IT services technically are combined and thereby constitute a single service.

[34] Competition Policy in Digital Market Study Group, "Algorithm/AI and Competition Policy Report," March 31, 2021, pp. 53-56.

[35] Although the answer depends on the CSP's policy regarding handling and protecting the data collected, the competitive advantage arising from data accumulation also should be assessed in order to precisely determine the "position" of the CSP in the relevant market (Randal C. Picker, "Competition and Privacy Web 2.0 and Cloud, " 2008, pp. 3-4), regardless of whether the data at issue is collected within the relevant market to which the consideration of the anti-competitive effect applies.

specifically set out for the purpose of regulating the indirect and direct network effect arising from multi-sided markets, and thereby contemplating the purpose of the Anti-Monopoly Act that is preventing any anti-competitive effect. In fact, the TFDPA contains provisions that exempt specified digital platform operators from liability to disclose information and to provide a prior notice such as a prior notice for account termination when fulfillment of that liability would impede the consumer's benefit. In other words, in certain situations, the TFDPA allows specified digital platform operators to prioritize the consumer's benefit compared to the business user's benefit. Therefore, one mode of thinking could be that, in particular, after the TFDPA became effective, it would be clarified that a holistic assessment of the interaction between different segments of consumers is possible under the Anti-Monopoly Act even if the separate relevant market could be defined for the different consumer segments.[36] In fact, even before the TFDPA was implemented, it was hinted at that the Anti-Monopoly Act is capable of providing such assessment methodology regarding the tying regulation because the JFTC explained that, whether there is an anti-competitive effect in the secondary market should be examined based on the effect both in the primary market and the secondary market collectively.[37]

4.2 SDGs as a Justifiable Ground

However, a further issue remains. The Anti-Monopoly Act needs to clarify how the JFTC is able to balance and prioritize the harm and benefit experienced by different segments of consumers. Generally speaking, it can be observed that competition among the platforms tends to be prioritized compared with competition on the platforms. Thus, even if consumers who have been active on a platform have suffered due to exploitative abuse of the platform, the platform might not be considered to be violating the Anti-Monopoly Act in light of the possible promotion of competition among the platforms; furthermore, this understanding may be affected by an analogy to the traditional comparison between inter- and intra- brand competition. That said, this analogy still would not have a rigid theoretical basis, and the JFTC has clarified its position that inter- and intra-brand competition have the same value in its guidelines.[38] In the context of the adoption of the cloud computing services, as it would be expected that cloud computing services would be a key infrastructure component of the digital transformation of society, as well as the promotion of a green society.[39]

(1) Compatibility Between Competition Policy and Environmental Policy in the EU

As further illustrated below, in the EU's competition law practices, it has been recognized that the benefit to the environment can be considered to be a pro-competitive effect that may override an anti-competitive effect under certain conditions, but it would be necessary for the benefit to the environment to be realized within the jurisdiction of the EU. This mechanism may be affected by the EU's legislative system concerning the protection of the environment that enables the competent authorities to compel business operators to comply with certain legal requirements pursuant to environment-related laws and regulations, such as the Packaging Waste Directive (94/62/EC), Batteries Directive (2006/66/EC) and Waste Electrical and Electronic Equipment Directive (2002/96/EC).

[36] The same idea can be observed in the EU's proposed Digital Markets Act (COM/2020/842). Art. 6, para. 1 of the Digital Markets Act encompasses tying practices whereby a gatekeeper in operating systems only allows access to third party software through its cloud computing system, but this does not mean that the gatekeeper cannot take measures to protect "the integrity of the hardware or operating system of the gatekeeper" (Nicolass Petit, "The Proposed Digital Markets Act (DMA) - A Legal and Policy Review", 2021, p. 14).
[37] JFTC (June 16, 2017). Result of Public Comments on the draft Revised Guidelines Concerning Distribution Systems and Business Practices, No. 114.
[38] JFTC (July 11, 1991). "Guidelines Concerning Distribution Systems and Business Practices," (as amended).
[39] Deloitte Touche Tohmatsu Limited (April, 2022). "Growing on the cloud", p. 28.

The European Commission further published the policy paper titled "European Green Deal" on December 11, 2019[40], and subsequently there has been active policy making concerning environmental, social, and governance ("ESG") investments and SDGs from the perspective of competition policy. For example, the European Commission decided to impose fines on collusive conduct restricting competition in emission controls for new diesel passenger cars on July 8, 2021[41], and also the European Commission further published papers addressing the contribution of competition policy to environmental policy[42].

In the "European Green Deal", the European Commission set forth policy objectives such as climate neutrality with no net emissions of greenhouse gases in 2050, decoupling economic growth and resource use, and transforming its economy and society to be more sustainable. These policy objectives are based on the Paris Agreement which became effective in November 2016 and which aims to prevent increases in global temperatures, and to achieve this ambitious policy goal, the European Commission enacted the European Climate Law (Regulation (EU) 2021/1119) stating that the EU will decrease 55% of greenhouse gas emissions substantially by 2030. Under the "European Green Deal", the European Commission has formulated policy packages in seven fields, such as supplying clean, affordable and secure energy, mobilising industry for a clean and circular economy, building and renovating in an energy and resource efficient way, accelerating the shift to sustainable and smart mobility, preserving and restoring ecosystems and biodiversity, establishing "From 'Farm to Fork'" (designing a fair, healthy and environmentally-friendly food system), and preserving and restoring ecosystems and biodiversity. These policies have been implemented by not solely relying on environmental policies, but by also combining industrial policies as well as energy policies. In addition, the European Commission implemented the Taxonomy Regulation ((EU) 2019/2088) to define what kind of economic activities can fall under sustainable investment in order to examine whether the investment at issue in the private sector should be promoted or not, and announced its intention to add natural gas and nuclear power related activities as sustainable investments, although, in response to the Ukraine situation there seem to be the differences among EU member states in their positions on this matter.

While ESG/SDG related policy making in the EU is largely developed, business operators have not been able to respond to these rapid and material changes in the social structure through their own efforts, which may be resulting in delays in achieving environmental policy goals, and therefore, cooperative actions may be called for which could conflict with prohibitions against horizontal or vertical agreements under the EU's competition law (Art. 101, paras. 1 & 2 of the Treaty of Functioning of European Union ("TFEU")). In this context, historically, there have been some efforts to strike a balance between competition policy and environmental policy. More specifically, even if agreements fall within the scope of prohibitions under Art. 101, para. 1 of the TFEU, such agreements would not be considered to be in violation of competition law provided that all the requirements under Art. 101, para. 3 of the TFEU are fulfilled. The requirements under Art. 101, para. 3 of the TFEU would be generally examined by balancing the anti-competitive effects and the pro-competitive effects. In this regard, past guidelines for assessing the requirements under Art. 101, para. 3 of the TFEU explained that, "[g]oals pursued by other Treaty

[40] European Commission (December 11, 2019). "Communication from the commission to the European Parliament, The European Council, The Council, The European Economic And Social Committee And The Committee Of The Regions - The European Green Deal".

[41] European Commission (July 8, 2021). "Antitrust: Commission fines car manufacturers €875 million for restricting competition in emission cleaning for new diesel passenger cars".

[42] European Commission (November 2021). "Competition Policy Brief 1/2021 - Policy in Support of Europe's Green Ambition" on September 2021, European Commission, "COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - A competition policy fit for new challenges".

provisions can be taken into account to the extent that they can be subsumed under the four conditions of Article [101] (3)".[43] In addition, other guidelines for horizontal agreements explicitly refer to a framework concerning how environmental agreements should be assessed[44]. To be specific, the guidelines define environmental agreements as agreements for the purpose of achieving pollution abatement, and then specified three types of environmental agreements that (i) do not fall (e.g., agreements with no precise individual obligation, or a loose commitment to contribute to the attainment of an environmental target, agreements with no appreciable effect on the product and production diversity or user choice, agreements designed to genuinely create markets), (ii) almost always come (e.g., cooperation does not truly concern environmental objectives, but serves as a tool to engage in a disguised cartel (recently, a so-called "green wash")), and (iii) may fall (e.g., agreements that appreciably restrict the parties' ability to devise characteristics for their products or the way in which they produce them, thereby granting them influence over each other's production or sales) under Art. 101, para. 1 of the TFEU. Thereafter, given that there must be net benefits in terms of reduced environmental pressure resulting from the agreement, as compared to a baseline where no action is taken, such agreement could be justified pursuant to Art. 101, para. 3 of the TFEU. Having said that, in the revised guidelines, while environmental agreements have not been elaborated on in the independent section, environmental agreements have been referred to in some research and development agreements and standardization agreements, and the guidelines still explain that these kinds of agreements can be justified pursuant to Art. 101, para. 3 of the TFEU because of environmental benefits that increase economic efficiency.[45]These guidelines surely confirm that social welfare, such as environmental benefits, can be taken into account when conducting a competition assessment, and could also be considered to be a factor that has the potential to overcome anti-competitive effects to a certain extent.

This observation seems to be in line with past precedents of the EU's competition law. For example, cases involving recycling, such as the DSD case[46], Eco-Emballage case[47] and ARA et al. case[48] evaluate the contribution to the protection of the environment realized through collective conduct to achieve recycling among the competitors as one of the factors that proves the legitimacy of the agreement. Also, in the CECED I case, which involved an agreement to ban imports of high energy consumption washing machines by the home appliance manufacturers' association[49], the agreement was found to be legal since the agreement provides for collective environmental benefits to consumers even though the total market share of the participants in the agreement was approx. 90%[50], and further, in the CECED II case, which involved a ban on imports of high energy consumption dishwashers and water heaters,[51] the agreement was found to be legal by considering the fact that an agreement on the use of low energy consumption machines indirectly contributes to the EU achieving its environmental policy goals. Recently, the same views have been expressed in a conference hosted by European Commission where, "Some respondents considered that in order to take due account of sustainability benefits, changes need to be introduced in the

[43] European Commission, "Guidelines on the application of Article 81(3) of the Treaty (2004/C 101/08)", para. 42.
[44] European Commission, "Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements (2001/C 3/02)", paras. 179-197.
[45] European Commission, "Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (2011/C 11/01)", footnote 1, paras. 145 and 329.
[46] DSD, [2001] OJL319/1.
[47] Eco Emballages, [2001] OJL233/37.
[48] ARA, ARGEV and ARO, [2004] OJL75/59.
[49] OJ [2000] L 187/47.
[50] OJ [2000] L 187/47, para. 56-57.
[51] European Commission (November 26, 2021). "Commission approves agreements to reduce energy consumption of dishwashers and warter heaters" (IP/01/1659).

assessment under Article 101 (3) TFEU. In this regard, it was argued that the scope of relevant benefits needs to be extended to non-economic benefits as well as to benefits that occur outside the relevant, investigated markets. Some suggest that the notion of 'consumers' needs to be expanded to encompass not only users of the products but also citizens and society as a whole. Others expressed a preference for a flexible interpretation of the notion of 'fair share' to allow benefits from an agreement to be credited even if they do not fully compensate for the harm suffered by consumers in the market. Some even questioned the soundness of a consumer welfare standard as an underlying principle of competition law and policy".[52] Furthermore, at the EU member state level, there have been a number of policy developments addressing the issue of ensuring compatibility between competition policy and environmental policy. For example, on September 2020, the Greek competition authority published a discussion paper that includes a proposal for establishing a sandbox framework on the assessment of conduct relating to sustainability[53]. In the Netherlands, in January 2021, draft guidelines were published which explain that agreements regarding sustainability would be considered for the purpose of sharing benefits with the entire society, and were thereby justified pursuant to Art. 101, para. 3 of the TFEU given that the agreement meets certain conditions,[54] and in January 2022, the German competition authority also published a statement regarding competition assessments for agreements concerning sustainability in the fields of food retailing, meat, and milk[55].

However, the white paper that was prepared by the European Commission in the course of the modernization of the relevant guidelines originally contained concerns that, "if more systematic use were made under Article 85(1) of an analysis of the pro and anti-competitive aspects of a restrictive agreement, Article 85(3) would be cast aside, whereas any such change could be made only through revision of the Treaty…Lastly, this option would run the risk of diverting Article 85(3) from its purpose, which is to provide a legal framework for the economic assessment of restrictive practices and not to allow application of the competition rules to be set aside because of political considerations",[56] and similar approach can be observed in judicial precedent.[57] If this approach were taken, the environmental benefit can be considered to be a factor which counters the anti-competitive effect to the extent that the environmental benefit contributes to promoting competition.

In addition, one more important issue: whether or not the environmental benefit can be attributed to customers located outside of the EU, such environmental benefit can still be considered under the EU's competition law. In this regard, there have been views that state that the collective environmental benefit to be considered in the context of competition assessment under the EU's competition law means the "collective" benefit for not only customers in the EU, but also customers outside of the EU, and Art. 101, para. 3 of the TFEU does not contain any legal text that restricts the scope of the consumers benefit to be taken into account during the competition assessment.[58] In addition, under the horizontal guidelines, it is still permissible to consider the consumer benefit which may realized at a later time to a certain extent[59], and in light of this principle, even if the environmental benefit is achieved in a

[52] European Commission (September 2021). "Competition Policy in Support of Europe's Green Ambition,", p. 2.
[53] Hellenic Competition Commission, "Draft Staff Discussion Paper on Sustainability Issue and Competition Law".
[54] Authority for Consumers and Markets, "Guidelines on sustainability agreements are ready for further European coordination".
[55] Bundeskartellamt, "Achieving sustainability in a competitive environment — Bundeskartellamt concludes examination of sector initiatives" and "Surcharges without improved sustainability in the milk sector: Bundeskartellamt points out limits of competition law."
[56] European Commission (April 28, 1999). "White Paper on Modernization of the Rule Implementing Articles 85 and 86 of the EC Treaty", pp. 23-24.
[57] Case T-86/95, Compagnie generate maritime v. Commission, February 28, 2002.
[58] Nicolas de Sadeleer, "EU Environmental Law and the Internal Market", Oxford (2014), pp.411-413, Suzanne Kingston, "Greening EU Competition Law and Policy," Cambridge (2012), pp. 277-278.
[59] European Commission, "Guidelines on the application of Article 81(3) of the Treaty (2004/C 101/08)", para. 87.

country outside of the EU, such environmental benefit can still be considered in the context of the EU competition law assessment provided that the environmental benefit raised outside of the EU could be proven to contribute to an environmental benefit worldwide, including the EU.

(2) Compatibility Between Competition Policy and Environmental Policy in Japan

The Japanese government has said that Japan will aim to reduce carbon emissions substantially by 2050, and to promote the further digital transformation of Japanese society.[60] Also, in response to an increasing awareness of the need to collaborate to promote SDGs and environmentally-friendly business activities, in March 2022, the Ministry of the Energy, Trade and Industry ("METI") launched a study group with the aim of proposing a somewhat new framework for balancing competition policy and environmental policy, and thereby promoting a drastic transformation of Japanese society to one that embraces de-carbonization.[61]

Thus far, as in the EU, when business operators seek to engage in concerted or cooperative activities in relation to the ESG/SDG, regulations on unfair trade restraints (e.g., cartels) as well as private monopolizations (e.g., abuse of a dominant position) under the Japanese Anti-Monopoly Act could be triggered (Art. 2, paras. 5 and 6, Art. 3 of the Anti-Monopoly Act). In addition, even if business operators do not have a dominant position in any of the relevant markets, the regulation against unfair trade practices under the Anti-Monopoly Act can apply to a case in which the business operator has an influential position in the relevant market, or a superior bargaining position against the counter party to the transaction in a way that is not necessarily connected to the level of market share (Art. 2, para, 9, Art. 19 of the Anti Monopoly Act). Further, the Anti-Monopoly Act uniquely regulates business associations as entities which are capable of being accused of violating the Anti-Monopoly Act (Art. 8 of the Anti-Monopoly Act).

In contrast, the general interpretation of the Anti-Monopoly Act that the public interest, such as the protection of the environment, can be taken into account during a competition assessment has been historically confirmed.[62] On the other hand, thus far, the JFTC has not explicitly stated that evaluations of sustainability and/or SDG under the Anti-Monopoly Act are made, but the JFTC has confirmed that, "the framework of horizontal agreements in the environmental context should be arranged without impeding competition in the market while the JFTC considers the necessity of concluding such agreements on a case by case basis".[63] More specifically, the JFTC has published a number of cases involving an environmental benefit where the JFTC was voluntary consulted by the business operator to ask whether the proposed conduct/scheme would conflict with the Anti-Monopoly Act, and the JFTC has provided brief explanations which confirmed that cooperative conduct (e.g., setting industrial standards to inhibit emissions of toxic substances, ceasing to manufacture and sell products with high environmental loading, preparing guidelines for the pricing of plastic bags) for the purpose of promoting an environmental benefit, such as recycling, would not be in violation of the Anti-Monopoly Act by highlighting the fact that the conduct does not compel participants to comply with certain requirements, and is simply implemented on a voluntary basis, and that the measures are taken to an extent reasonably necessary to achieve a social benefit.[64]The JFTC has already demonstrated that the Anti-Monopoly Act is capable of considering other kinds of the social benefit, such as disaster

[60] SDGs Promotion Headquarters at the Cabinet Office, "SDGs Action Plan 2022".
[61] METI (March 17, 2022). Press Release titled "Study Group regarding Competition Policy toward realizing the Green Society",.
[62] Supreme Court Judgement, September 17, 1984, Keishu Vol. 38, No. 4, p. 1287, JFTC, "Guidelines Concerning the Activities of Trade Associations under the Antimonopoly Act," October 30, 1995, JFTC, "Guidelines Concerning Joint Activities for Recycling under the Antimonopoly Act," January 26, 2001.
[63] OECD (November 24, 2011). "Horizontal Agreements in the Environmental Context 2010", p. 68.
[64] JFTC (March 2002). "Major Consultation Cases regarding the Trade Association's Activities," Cases 14, 25, 27, 31, 32, 46.

relief, human rights, public health, work safety, secure employment, and compliance with other legal requirements.[65] Having said that, unlike the EU, Japan has a limited amount of legislation that compels a broad range of stakeholders to take measures to protect the environment like the pick-up obligations of retailers under the Act on Recycling of Specified Kinds of Home Appliances, and thus, it would be hard to achieve high standards of environmental protection only through voluntary cooperation, and it would also be difficult to ensure an equal-footing among domestic business operators who generally tend to respect voluntary requests and foreign business operators who do not necessarily have to comply with voluntary requests. Therefore, a clearer analytical framework would be necessary to assess when the Anti-Monopoly Act may accept environment-friendly conduct, regardless of whether the conduct is implemented on a voluntary basis or compulsory basis, and it might be necessary to set out broader safeguards for allowing environment-friendly activities by giving priority to environmental policy compared to competition policy. This could in turn mean that even if the alleged environmental benefit would not necessarily be closely linked to the promotion of competition in itself, such environmental benefit could still be considered to be a justification provided that the environmental benefit in fact contributes to the social welfare. Although environmental compatibility could already be a competition parameter for consumers located in Japan even at this stage, there is also room for environmental benefits where it is not necessarily clear how the benefit promotes competition in itself could still be taken into account to justify possible anti-competitive conduct. When it comes to the adoption of cloud computing services using renewable green energy, by taking this approach, the benefit to the environment in Japan could be generally considered to be one justification in an assessment under the Anti-Monopoly Act provided that the use of the renewable green energy is a key competition parameter for selecting the cloud computing services, and even if the use of the renewable green energy is not necessarily the decisive factor for customers to choose cloud computing services, the benefit would still be considered to be a justification as a part of achieving environmental policy goals. This would also contribute to facilitating a digital transformation in the public and private sectors in Japan, which would be another justification, and would be in line with the international approach suggested by the OECD.[66]

In regard to the territorial scope of the justification, the JFTC has not published cases or an assessment methodology for how the Anti-Monopoly Act could address environmental benefits raised outside of Japan. In this connection, given that the Anti-Monopoly Act applies to conduct that may have an effect on competition when supplying customers located in Japan, environmental benefits that can be taken into account could be limited to only benefits provided to consumers in Japan. However, although the description is directly related to competitive pressures through imports and not related to the overall framework for assessing competition, and also not related to environmental benefits, the merger control guidelines imply that an effect on competition which would be realized within 2 years can be practically evaluated in the course of assessing competition.[67] Also, in fact, if it were true that Japan has weaker mechanisms to ensure the protection of the environment compared to other jurisdictions such as

[65] Supreme Court Judgement, December 14, 1988, Minshu Vol. 43, No. 12, p. 2078, Osaka High Court Judgement, October 14, 1994, Shinketsushu Vol. 41, p. 490, Yamaguchi District Court Shimonoseki Branch Judgement, Shinketsushu vol. 52, p. 918, January 16, 2006, JFTC, "Consultation Cases in 2019," Case 6, JFTC, "Consultation Cases in 2007", Case 11, JFTC, "Q&A concerning the Great East Japan Earthquake", No. 3. Competition authorities in New Zealand and Australia also take the position that competition law can consider the positive effects derived from environmental initiatives on society if they outweigh any detriment resulting from a loss of competition (OECD, "Sustainability and Competition - Note by Australia and New Zealand," 2020).

[66] OECD (November 18, 2021). "Environmental Considerations in Competition Enforcement - Background Paper by the Secretariat", p. 19.

[67] JFTC (May 31, 2014). "Guidelines to Application of the Antimonopoly Act Concerning Review of Business Combination", (as amended).

the EU, there would be an imbalance whereby conduct involving foreign business operators who comply with stricter environmental requirements in other jurisdictions could not be justified due to the mere fact that they participate in a compulsory framework in Japan, or they do not cooperate with voluntary and unique requests in Japan.[68] This could be a more serious situation when adopting cloud computing services which operate globally. Measuring the environmental benefit realized outside of good or territorial scopes of a relevant market would be challenging, as a practical endeavor[69], but this could be a matter of proving facts and does not exclude the theoretical possibility of such an interpretation.

5. Conclusion

The paper dealt with two issues: first, the definition of "relevant markets" in the context of the cloud computing services and second, the environmentally friendly effects that cloud computing services can trigger in other jurisdictions. These issues are not essentially new in themselves, but the active adoption of cloud computing services has revived them and provided the impetus for deeper consideration. As for the first point, the Japanese Anti-Monopoly Act has the potential to allow for a holistic review of the dynamic competition surrounding cloud computing services by covering interactions between the effects on different consumer segments which are related to each other, but there would still be the issue of balancing and prioritizing the different consumer segments. As for the second point, the Japanese Anti-Monopoly Act may be capable of taking environmental benefits into consideration even though the benefits could be raised in another relevant market as well as outside of Japan, but this is still developing and being discussed. To advance the discussion further, the Anti-Monopoly Act should continue to explore and learn from the experience of other fields, such as privacy and international trade disputes. For example, in the context of the international trade disputes, there was a case in which import bans were placed on shrimp and related products by the U.S. to protect sea turtles, and this was justified under the General Agreement on Tariffs and Trade ("GATT") because, even if sea turtles migrate outside of the U.S. in some cases, there was a sufficient link between the import ban and the protection of natural resources by considering the fact that the sea turtles would circle back to the U.S. jurisdiction.[70] Also, there is a view that stricter regulations imposed on the import of goods because the country does not have control over disease and insect pest inspections carried out outside of that country could be justified under the GATT.[71] This may metaphorically imply that where data free flow with trust (DFFT initiative in G20 in 2019) performs like an ocean current, the pro-competitive effect and/or environmental benefit offered by cloud computing services could be relevant to all economies that participate in that flow.

[68] Similarly, cybersecurity and economic security issues have been calling for cooperative responses, and are not matters that individual countries can tackle effectively alone. Therefore, it is important to ensure consistent operation and harmonization between countries in regard to the cloud computing services which tend to have the impact at the global wide .

[69] Nadine Watson (November 19, 2021). "Measuring environmental benefits in competition cases", pp. 12, 20-21.

[70] WT/DS58/AB/R.

[71] Mitsuo Matshutita & Kazumochi Kometani (2015). *International Trade Law*, p. 305.