NISHIMURA
& ASAHI

[Translation]

Nishimura Institute of Advanced Legal Studies

Competition and Industrial law and policy regarding Data Business

June 2018

Nishimura Institute of Advanced Legal Studies

Otemon Tower, 1-1-2 Otemachi, Chiyoda-ku, Tokyo 100-8124, Japan

Nishimura Institute of Advanced Legal Studies (NIALS)
Attendees of the meetings of the Study Group for Laws and Policies Regarding Competition for and Industry of Data (titles omitted)

<<Chairperson>>

Nobuhiro Nakayama, Professor Emeritus, The University of Tokyo

<<Group Members>>

Tadashi Shiraishi, Professor, Graduate Schools for Law and Politics, The University of Tokyo
Naoto Ikegai, Associate Professor, Department of Policy Studies, Faculty of Economics, Toyo University
Kozo Kawai, Attorney-at-law, Nishimura & Asahi

<<Details of the Study Group Meetings>>

1st meeting (Thursday, September 21, 2017)
Speakers: Tatsuya Yoshimura, Manager of the Public Policy and Government Relations, Google Japan G.K.
Kenji Kushida, Japan Program Research Scholar, Shorenstein Asia-Pacific Research Center, Stanford University

2nd meeting (Thursday, October 18, 2017)
Speakers: Tadahiro Taniguchi, Professor, Department of Information Science and Engineering, College of Information Science and Engineering, Ritsumeikan University
Katsuya Uenoyama, Representative Director, PKSHA Technology Inc.

3rd meeting (Wednesday, November 15, 2017)
Speakers: Takafumi Nakanishi, Associate Professor and Senior Research Fellow, Center for Global Communications (GLOCOM) of the International University of Japan
Naoto Ikegai, Associate Professor, Department of Policy Studies, Faculty of Economics, Toyo University

4th meeting (Thursday, December 14, 2017)
Speakers: Hiroyuki Morikawa, Professor, Graduate School of Engineering, The University of Tokyo
D. Daniel Sokol, Research Foundation Professor of Law, University of Florida
Daisuke Korenaga, Professor, Faculty of Law, Hiroshima Shudo University

5th meeting (Monday, January 22, 2018)
Speakers: Masabumi Suzuki, Professor, Graduate School of Law, Nagoya University
Shuya Hayashi, Professor, Graduate School of Law, Nagoya University

6th meeting (Thursday, February 8, 2018)
Speakers: Toshiya Watanabe, Professor, Policy Alternatives Research Institute, The University of Tokyo

7th meeting (Monday, February 26, 2018)
Speakers: Ken Kusunoki, Professor, Graduate School of International Corporate Strategy, Hitotsubashi University

<<Secretariat>>

Kojiro Fujii, Attorney-at-law, Nishimura & Asahi
Noriya Ishikawa, Attorney-at-law, Nishimura & Asahi
Tatsuya Tsunoda, Attorney-at-law, Nishimura & Asahi
Atsushi Kono, Attorney-at-law, Nishimura & Asahi

* These study group meetings were held with the co-sponsorship of Google Japan LLC.
** The views and opinions expressed herein including the Study Group's Proposals are those of NIALS and do not necessarily reflect the views and opinions of chairperson, group members or guest speakers.

Table of Contents

Part 1 Purpose of the Study Group

Given that the Nishimura Institute of Advanced Legal Studies ("**NIALS**") was founded to actively contribute to the development of legal practice in Japan, NIALS has conducted activities to drastically enhance legal practice in Japan by integrating theory and practice. As part of them, it has provided constructive and advanced proposals regarding legal practice based on theoretical and practical researches and studies conducted from a law-related strategic standpoint, and it has offered a wide range of seminars and conferences to improve legal practice.[1]

Recently, there have been active discussions regarding how we can develop the Japanese economy by invigorating business using data or "AI"[2] (the "**Data and AI Business**"). Although there seem to be various methods to consider this issue, among others, how we can achieve the effective development of the Data and AI Business and how we should regulate that business by competition law and policies are broadly recognized as important topics. In fact, in various sectors, we can see a trend in which ideal approaches to competition law and policies of Japan are considered in connection with the Data and AI Business.[3]

However, in order to invigorate the Data and AI Business with the aim of developing the Japanese economy, it is necessary to clarify what kinds of barriers or issues exist that prevent invigorating such business and what are the appropriate solutions for that. To this end, in addition to the technological trends and the status of competition and collaboration among market participants relating to the Data and AI Business, it is necessary to consider various laws and policies, and sociocultural factors relating to the Data and AI Business, as well as competition law and policies.

The purpose of the Study Group for Laws and Policies Regarding Competition for and Industry of Data (the "**Study Group**") was to understand the current business situation, such as the technological trends and the status of competition and collaboration among market participants relating to the Data and AI Business, and to consider ideal approaches to various laws and policies relating to the Data and AI Business. In addition, the Study Group aimed to provide considerations and proposals regarding the roles of competition law and policies to be employed in invigorating the Data and AI Business and at the same time the limitations of such roles. Furthermore, the Study Group intended that if it could obtain important suggestions for laws and policies in connection with the invigoration of the Data and AI Business from any perspective other than competition law or competition policies, it would reflect these suggestions in its proposals.

---

1 A recent example is "Nishimura Institute of Advanced Legal Studies (NIALS) Report by the Space Resource Development Laws Study Group" (December 2016).

2 As stated in **Part 3, 1.** below, in this report, AI is understood to mainly refer to image recognition technology and the like using machine learning or deep learning, which is assumed in the Data and AI Business in the modern era.

3 For example, "Report of Study Group on Data and Competition Policy" (June 6, 2017) by the Competition Policy Research Center of the Japan Fair Trade Commission, and "Report of the Cross-sectional System Study Group for the Fourth Industrial Revolution" (September 15, 2016) and "Report of the Study Group for Ideal Approaches to Competition Policies for the Fourth Industrial Revolution - Towards the Realization of Connected Industries -" (June 28, 2017) by the Ministry of Economy, Trade and Industry ("**METI**") can be deemed to represent this trend.

Full-scale discussions on laws and policies for the Data and AI Business have only just begun recently; therefore, the Study Group's proposals must be elementary and tentative in nature. However, we consider it advisable that the topic of laws and policies for the Data and AI Business be considered deeply from a broad set of perspectives in various forums. We hope that the Study Group's proposals and supporting considerations will be helpful for discussions on laws and policies going forward in Japan.
Note that the views and opinions expressed herein including the Study Group's Proposals are those of NIALS and do not necessarily reflect the views and opinions of chairperson, group members or guest speakers.

Part 2 The Study Group's Proposals

1. Structure of This Report

This report first lays out the current technologies used for, and the business models of, the Data and AI Business, and the issues to be resolved for further development of that business (**Part 3** of this report).

Second, based on the current situation and forecast of the Data and AI Business as laid out in **Part 3**, this report provides discussion on priority issues for the development of the Japanese economy through the invigoration of the Data and AI Business from a broad perspective of various laws and policies, and sociocultural factors relating to the Data and AI Business (**Part 4** of this report).

Finally, this report provides discussion on the roles of competition law and policies for the Data and AI Business (**Part 5** of this report).

2. The Study Group's Proposals

The Study Group's proposals are as follows.

Proposal (1)	**In order to identify barriers and issues that prevent invigorating the Data and AI Business in Japan and to resolve and fix them, it is necessary to consider those barriers and issues by understanding the whole picture of laws and policies that may function as a solution or fix for them. Among others, first, it is important to organize an environment which enables parties to voluntarily transfer and share data for utilization of the data based on market principles and thereby develop an environment facilitating construction of business models and promotion of innovation. To this end, it is important to consider and disseminate efforts to formulate contract models and accumulate best practices that are necessary to invigorate the Data and AI Business. Furthermore, those efforts should be made in various forums in which a broad range of players participate from the public and private, overseas and domestic, and (multi-)industry sectors. It is also important—through those efforts—to ensure the enhancement of awareness and the sharing of experience toward the invigoration of the Data and AI Business in an internationally and cross-industrially suitable manner.**

Proposal (2)	**When considering various law and policy reforms with the aim of developing an environment enabling the invigoration of the Data and AI Business, it is important for the Japanese government, for example, to maintain laws and policies that balance the protection of privacy and the promotion of free utilization of data, and to also encourage and deepen public discussions regarding advanced issues, such as data portability, with a view to securing consumer's self-information control rights and options so that the utilization of data will appropriately lead to the expansion of consumer benefits. In addition, in order for utilization of data to be safely promoted on a cross-border basis, it is also important to make efforts to consider and promote trade law and policies to counter movements toward data protectionism whereby the government allows domestic companies to use the country's data on a priority basis or hoards the data within the nation.**
Proposal (3)	**Competition law and policies could constitute an important part of the necessary solution to issues for invigorating the Data and AI Business in Japan. On the other hand, it is necessary to note that applying or enforcing them in individual cases has limitations in that such application or enforcement is not appropriate for developing an overall framework for an environment that is necessary for promoting utilization of data. In addition, such application or enforcement has adverse effects in that it may lead to inefficient protection of enterprises or excessive interference with business models. When considering ideal approaches to competition law and policies in connection with the Data and AI Business in Japan, by focusing on an enterprise's problematic act, whether the relevant problematic act can be found to be artificial (abnormal), and whether there is any justifiable reason for the relevant problematic act should be considered carefully to prevent sound business activities from shrinking. In addition, when considering whether any market is being adversely affected, in particular, whether other enterprises have alternative means of competition should not fail to be considered so that enforcing competition law will not cause inefficient protection of enterprises or protection of vested interests or impede truly active competition in markets.**

(1) Proposal (1)

What is important for invigorating the Data and AI Business under the current situation in Japan is to consider what vision of society we would like to achieve by invigorating the Data and AI Business, what kinds of barriers or issues exist that prevent invigorating that business, and what is necessary to resolve and fix them from the perspective of various relevant laws and policies, such as contract law, unfair competition prevention law, personal information protection law, intellectual property law, international trade law, competition law, etc., and sociocultural factors, and to implement the necessary reforms. In addition, in order to further develop the Data and AI Business by taking advantage of Japanese companies' strengths and areas of specialty, it is important not only to pay attention to the domestic situation in Japan, but also to have the perspective of acquiring

international and universal competitive strengths through collaboration with foreign companies that have strengths which Japanese companies do not have.

In light of the considerations based on this perspective, we consider that the largest barrier and issue that prevent invigorating the Data and AI Business under the current situation in Japan are attributable to circumstances where data transaction and sharing are difficult to agree in the form of a contract because rights and obligations relating to data are unclear, people have insufficient knowledge regarding intellectual property law and contracts for data, and people have no shared knowledge regarding the advantages and disadvantages of utilizing data for their business. Therefore, the most effective method to invigorate the Data and AI Business is that parties voluntarily develop an environment promoting appropriate transfer and analysis of data in markets on a priority basis through clarification of rights and obligations regarding data, consideration of contract models, accumulation of best practices for sharing and utilizing data, etc.

In this respect, we consider that efforts through a government-led forum, e.g., METI's "study group for contract guidelines on AI and data," would also be effective.[4]

On the other hand, at the same time, there are various and a broad range of players who participate in the Data and AI Business from the public and private (public-private), overseas and domestic (nationality of enterprises), and industry (multi-industry) sectors, and a variety of laws and policies are relevant. Therefore, we consider that ideal approaches to rights and obligations and contracts that would contribute to the invigoration of the Data and AI Business cannot be consolidated into one specific model due to their nature. From that perspective, we consider that it is important for multiple forums to be proposed that tackle various issues, including the formulation of contract models and a data protection framework that are necessary to invigorate the Data and AI Business, with the participation of various players from the public and private, overseas and domestic, and industry sectors, and for each forum to actively disseminate their sense of values and awareness of issues to each other. This would enable the enhancement of awareness and the sharing of experience toward the invigoration of the Data and AI Business in an internationally and cross-industrially suitable manner.

(2) Proposal (2)

When considering various law and policy reforms with the aim of developing an environment enabling the invigoration of the Data and AI Business, it is important for the Japanese government, for example, to consider and maintain laws and policies that balance the protection of privacy pursuant to personal information protection law, intellectual property law, and unfair trade prevention law, and the promotion of free utilization of personal data and industrial data. In addition, while considering the differences between sociocultural factors in each country, it is also important for the Japanese government to encourage and deepen public discussions regarding new advanced issues, such as data portability, with a view to securing consumer's self-information control rights and options so that the utilization of data will appropriately lead to the expansion of consumer benefits.

---

[4] The contract guidelines on use of AI and data that METI has been addressing w as published on June 15th, 2018<http://www.meti.go.jp/press/2018/06/20180615001/20180615001.html>.

In addition, in the context of international data transfer, so-called data protectionism and cyber protectionism have emerged in China and some emerging countries whereby the government allows domestic companies to use the country's data on a priority basis or hoards the data within the nation. With a view to safely promoting transfer and utilization of data on a cross-border basis and thereby ensuring the invigoration of the Data and AI Business, it is also important to formulate rules that counter data protectionism and the like from the standpoint of international trade law and other policies and thereby to create and maintain an environment promoting international free transfer and analysis of data.

(3) Proposal (3)

In respect of restraining or correcting an enterprise's act that may impede the invigoration of the Data and AI Business in Japan, competition law and policies would constitute an important part of the solution therefor.

However, if so, competition law should be enforced based on specific evidence and theoretical grounds that demonstrate the reasonableness of doing so. In other words, when enforcing competition law, it is necessary to appropriately evaluate the market environment based on specific evidence; at the same time, in the current situation, drastic changes are occurring in the Data and AI Business, and there is dynamic competitions for a new market that are happening in multiple markets. Therefore, the competition authority is required to further carefully make such an evaluation. From the theoretical perspective of competition law, mainly in the U.S., there is a penetrating view that competition in the Data and AI Business is not competition within existing markets but competition for new markets, the latter of which typically becomes an issue; therefore, it is recognized that careful attention should be paid to active governmental intervention in markets pursuant to competition law.[5] In the context of the Data and AI Business and competition law, the European authority's active movements tend to draw attention; however, in order to consider ideal approaches to competition law and policies that are capable of enduring international verification, at least, it would be necessary for Japan to pay attention to movements in the U.S. as well.

Based on that, in the process of evaluating a specific act pursuant to competition law, whether the relevant problematic act can be found to be artificial (abnormal), and whether there is any justifiable reason for the relevant problematic act should be considered carefully to prevent sound business activities from shrinking. In particular, it is necessary to carefully scrutinize whether there is any justifiable reason for the relevant enterprise's problematic act from the perspectives of: (i) utilization of scale or scope of economy; (ii) improvement of user experience or convenience or security; (iii) ensuring interoperability; (iv) essentiality for the platform to continue or improve, e.g., through preventing fragmentation or obtaining revenue; (v) protection of investment incentives; or (vi) provision of new business opportunities or new entry channels to users including small- and medium-sized enterprises.

Furthermore, competition law is not intended to protect competitors. Therefore, attention should be paid to prevent the enforcement of competition law from

---

5 Bernard A. Nigro, "'Big Data' and Competition for the Market", December 13, 20 17<https://www.justice.gov/opa/speech/file/1017701/download>.

resulting in other competing enterprises being helped unnecessarily. In the context of the Data and AI Business markets, aside from the situation where an enterprise is unduly deprived of an opportunity to enter competition for a new market or new business model despite using its ingenuity and implementing a process of trial and error, if the competition authority easily evaluates that the relevant market is adversely affected and enforces competition law at a stage where no sufficient verification has been made regarding whether other enterprises have alternative means of competition, then such enforcement may cause an adverse effect in that it diminishes incentives for enterprises to build business models on their own or to inspire technological innovation. Also, it is necessary to note that in that case, such enforcement may lead to inefficient protection of enterprises or vested interests or may result in impeding truly active competition in markets.

Even if competition law is applied or enforced, the application or enforcement is directly intended to resolve an individual issue that has specifically occurred. Therefore, it requires attention that competition law cannot replace other various laws and policies contributing to the development of an overall framework for an environment toward utilization of data to invigorate the Data and AI Business, and that competition law cannot function as a universal solution for the invigoration of the Data and AI Business.

Part 3 Current Situation and Future Forecast for the Data and AI Business in the Modern Era

When considering various laws and policies for the Data and AI Business, it is important to understand as its premise the current situation of the Data and AI Business as accurately as possible. This is because such understanding will enable us to avoid causing any notable discrepancy between the direction that laws and policies set and the current situation that they cover, and to provide practicable proposals, instead of being preoccupied with considering abstract and general legal issues. At a Study Group meeting as well, the following view was expressed, "Policymakers are required to obtain sufficient input from enterprises, to provide opportunities for discussion, and to pay attention to ensure that their policies reflect the current business situation. If persuasive reports reflecting the current business situation are issued, policymaking parties will achieve markets' trust and thus be able to effectively participate in discussion regarding ideal approaches to regulations in the relevant business."

Accordingly, we first outline the current situation and future forecast for the Data and AI Business and technologies used therefor, respectively, within the scope of those acquired from discussions at the Study Group meetings, as below.

1. Current Situation of AI Technology

(1) Details of "AI" Understood in the Current Data and AI Business

"AI" understood in the current Data and AI Business is a collective term for data mining, natural language processing, voice recognition, image recognition, mechanical translation, and the like, and the scope of its technology areas changes based on time and context. In particular, in recent years, "AI" is referred as deep learning, which has become capable of mechanically creating feature extraction devices (algorithms) through machine learning, by developing neural networks as machine learning (in particular, a machine learning device) into powerful ones that have more layers (deep neural networks) and then using large "labeled data."

Moreover, at a Study Group meeting, the following view was expressed, "When discussing policies for the current 'AI', it is necessary to accurately understand as its premise that unlike voice recognition, image recognition, machine learning, and automatic creation of melodies and sentences, there is still neither any likelihood of realizing[6] AI that independently collects information, makes decisions, and takes action in the real world, nor AI that has emotions, and autonomous 'general AI' that is capable of handling all of the intellectual work that humans can do."

(2) Characteristics of Current Deep Learning

In machine learning, basically, an algorithm as a feature extraction device that extracts "features" of input data affects the accuracy of its output. Because humans used to directly program feature extraction devices in existing machine learning, performance of "AI" largely depended on the programing of feature extraction devices by humans. Thus, data reading by machine learning used to be positioned as a process to just additionally optimize feature extraction devices.

However, with existing machine learning, in addition to humans not being able to predict all of the input data patterns, there used to be an issue that the standards of output "accuracy" that data analysts required were diverse and ambiguous. Moreover, there used to be the issue of "over-fitting." This means that when simply reading large data, an algorithm provides output that shows too much relevance to the existing data and does not contribute to prediction.

What overcame these issues is deep learning that has become capable of mechanically creating feature extraction devices by using "labeled data" through deep neural networks. This "labeled data" refers to a set of input and output data provided with a solution, namely, "correct answer" for data inputted into an algorithm. This deep learning is sometimes called "supervised learning" because it is machine learning using such a solution.

Using this enables us to create an algorithm that extracts common features from patterns observed in labeled data, and through adjustment of functions and parameters by humans, inductively returns certain output in response to input.

(3) Relationship Between Deep Learning and Data

It is said that in order for the above characteristics of deep learning to effectively function, as stated in **(2)** above, large labeled data usually needs to be prepared. Therefore, under the current situation, how we collect large and good-quality labeled data and improve the accuracy of output in response to input through deep learning has been drawing attention.

The reason is that under the current situation, such labeled data is only prepared manually by humans and the preparation entails huge costs. Therefore, how efficiently we collect labeled data by building some mechanism has been an issue for implementing deep learning.

---

6 At a Study Group meeting, the following view was also expressed, "Under the current situation, in order to realize such 'general AI,' it seems necessary to change the basic structure and conception of current machine learning that returns output in response to input."

However, at a Study Group meeting, the following view was expressed, "Even if such a mechanism were built, information relating to collective human knowledge existing in a non-digitalized state does not concentrate in specific enterprises by nature."

In contrast to this deep learning using labeled data, machine learning not using labeled data, namely, using only input data and not using output data that is the "correct answer" forming a pair with input data is sometimes called "unsupervised learning."

(4) Algorithm Usage Environment Used for Machine Learning

At a Study Group meeting, the following view was expressed, "Regarding algorithms for machine learning or deep learning, construction of algorithms themselves had added value in the past; however, recently, as a community of researchers has been created centering on progress in open innovation and intellectual curiosity, algorithms have been open-sourced,[7] and a mechanism where various people modify or add functions to algorithms has been established. Thus, it is becoming commoditized."

In some cases, users of algorithms open-sourced like this are not required to feed back the results to providers of algorithms or to likewise open-source the results. In light of these cases, we consider that the environment facilitating data analysis by using open-sourced algorithms has been developed in some respects.

2. Current Situation of the Data and AI Business

(1) Positioning of "AI" in the Data and AI Business

"AI" is one type of software that can enhance output accuracy by machine learning or deep learning, and as it were, something like a cog or gear wheel of a product. Inherently, it can be utilized in various business areas; as a result, it is a technology that has the potential to redefine the boundaries of existing business areas.

For example, at a Study Group meeting, the following view was expressed, "The essence of the algorithm revolution is automatization of humans' individual activities ('AI') and IA (Intelligence Augmentation) that assists humans' activities. The scope of those application is diverse, and various combinations of business are expected to be born in the future." In addition, at a Study Group meeting, the following view was also expressed, "As existing IT or ICT technology has fostered an environment enabling and has encouraged the appearance of new business and services using broadband, 'AI' technology relating to the Data and AI Business represented by IoT also has the potential to further foster and encourage new services and business in different areas by becoming part of IT or ICT as an infrastructure." Specifically, at a Study Group meeting, examples of collaboration between an airline company and an airplane or component manufacturer were provided.

On the other hand, at a Study Group meeting, the following view was also expressed, "As Google, Apple, Microsoft, and others showed their presence, as it

---

7 Google's TensorFlow is one typical example.

were, that could be equated to supremacy in the areas of search engines, smartphones, and OS in the past, I cannot deny the possibility that these companies will also have a strong presence in the 'AI' area." However, at a Study Group meeting, as stated in **(4)A.** below, other views were also expressed, "Firm grounds have yet to be provided regarding whether versatile AI (so-called general AI) that is capable of being applied to every usage and that has superiority can appear." and, as stated above, "Because 'AI' is just like a gear wheel of a product, even if these companies show a strong presence in the 'AI' area, Japanese companies should show their competitiveness by utilizing AI-related services provided by these companies as freely as possible to develop business, rather than seeking regulations on these companies' existence by the government."

From these perspectives, we consider that it is necessary to flexibly understand the current situation of the Data and AI Business, giving consideration to new markets or business that can be born in the future as well, instead of being preoccupied with the classification of existing markets or business.

(2) Importance of Business Ideas in the Data and AI Business

As stated in **1**. above, under the current situation, the accuracy of deep learning analyses depends on the quantity of collected labeled data and its quality, and the construction of algorithms in some respects. On the other hand, at a Study Group meeting, the following view was repeatedly expressed, "Success as a Data and AI Business using machine learning or deep learning does not depend on the simple quantity of collected data and other factors, and business ideas regarding how enterprises will appeal to what user segments are critically important."

For example, at a Study Group meeting, the following view was expressed, "In order to establish and be successful as a Data and AI Business, it is necessary to newly achieve competitive superiority by discovering new data that leads to added value, discovering data's new added value, and discovering new business models to acquire data." Moreover, at a Study Group meeting, other views were also expressed, "In the past, we could achieve innovation only if we overcame technical barriers (invention); however, under the current situation, after invention, we face a higher hurdle on innovation in respect of how we lead invention to business. Accordingly, progress in technology does not immediately lead to success as business (innovation)." and "Although the advantage of pioneers definitely exists in the Data and AI Business, its source is not the accumulation of data itself but how much know-how of data analysis is accumulated."

In addition, at a Study Group meeting, the following view was expressed, "It seems that by the appearance of a large number of types of Data and AI Business[8] specializing in specific areas, business area diversification within the Data and AI Business will progress." As an example of this, at a Study Group meeting, one case was introduced: Mobileye provided a software program that indicated the directions of automated driving to many auto manufacturers, collected data from them, and improved the accuracy of the software program; the company thereby enhanced both its negotiation capability and profitability, and thus became a very strong company. In addition, it was reported that IBM, NEC, Hitachi, and others have been developing "AI" specialized in the areas of natural language processing

8 "AI" used for these types of Data and AI Business specializing in specific areas i s sometimes called vertical "AI" or specialized "AI."

technology for call centers, face recognition technology for commercial business, and the like. Moreover, at a Study Group meeting, the following view was also expressed, "As indicated by the case where the aggregate market value of Sabre, which had managed vacant seat information for airplanes, exceeded that of American Airlines, it seems that enterprises can obtain new business opportunities when they look for data not having been digitalized to date."

However, in any case, it is necessary to note that business finally established after the process of trial and error with business ideas will be further subject to severe competition in markets thereafter.

From this perspective, we consider that it is important to develop an environment as an overall framework where individual enterprises can freely select business models, using their ingenuity.

(3) Relationship Between "Data" and "AI" in the Data and AI Business

From the following perspectives, we consider that irrespective of the quantity of labeled data, it is important to develop an environment as an overall framework where individual enterprises can freely select business models, using their ingenuity.

A. Business Model Collecting Labeled Data

As stated in **(2)** above, in order to ensure that "AI" fully functions in the Data and AI Business, it is also an important point to build a mechanism where labeled data can be efficiently collected. In other words, data collectors and data providers establish a Win-Win relationship based on individual enterprises' business ideas; and data is provided under the initiative of enterprises, not forced by outsiders, which will contribute to the invigoration of the Data and AI Business through efficient collection of labeled data in some respects (we consider that in particular, this point has more importance in the current situation where data holding parties and data analyzing parties ("AI" developing and providing parties) are separate). For example, spam filters for junk mail and Facebook's face recognition system are examples of machine learning using labeled data; both have characteristics whereby they have a mechanism where data is labeled in the usual operating process for users using services, such as selecting emails to be moved to a junk mail folder and tagging friends in photos.

Such importance of the mechanism where labeled data can be efficiently collected also applies in utilizing real data[9] including personal information, distinguished from virtual data, in the Data and AI Business. For example, at a Study Group meeting, the following view was expressed, "General Electric was able to reach the

---

9 Both "virtual data" and "real data" used in this report have the same meanings as defined on page 26 of "The New Industrial Structure Vision − Japanese Strategy Leading the Fourth Industrial Revolution − Interim Report," New Industrial Structure Committee of Industrial Structure Council of METI <http://www.meti.go.jp/committee/sankoushin/shin_sangyoukouzou/pdf/ch_01.pdf>. In other words, virtual data refers to voice and image data distributed from data inputted by users on the Web or from the Web, and data generated from activities on the Internet space such as the Web, SNS, and the like. In contrast, real data refers to data obtained by directly collecting activities in the real world (individual status, daily action, operating situation of products, etc.) through sensors.

status where it can provide more effective and prompt solutions (such as route prediction and fuel efficiency) than airline companies can analyze by themselves, by collecting data from start-up airline companies to which the leasing company owned by General Electric lends airplanes, and by acquiring more data than existing major airline companies. In response, currently, business models where one can successfully draw out labeled data and utilize it have been actively devised, and various enterprises that employ different business models have been competing to become a platform regarding real data."

B. Relationship Between Labeled Data and Competitive Superiority

As stated in **(2)** above, just collecting large labeled data does not immediately ensure success as a Data and AI Business; in order to lead the results of deep learning to success as a Data and AI Business, other factors including business ideas are also important.

Moreover, at a Study Group meeting, the following view was also expressed, "The Data and AI Business using labeled data can enjoy network effects in the sense that one can improve its quality in conjunction with collecting that data; on the other hand, because any software that collects and analyzes data can essentially enjoy network effects, the existence of network effects itself is not necessarily a specific issue to 'AI'."[10]

At a Study Group meeting, the following view was also expressed, "The purpose of the current 'AI' is to provide accurate output in response to certain input. In this respect, the fundamental idea is that the current 'AI' is created based on formats, standards, and the like of input data; therefore, formats, standards, and the like of input data cannot be specified or restricted by 'AI.' Rather, under the current situation, 'AI' is created to be compliant with existing data that can be inputted."

C. Progress on Analysis, Research and Development of Small/Little Data

The data quantity level required for deep learning to conduct the Data and AI Business is determined in relation to the level satisfying users as the appeal target; accordingly, large data is not always required.

In this respect, under the current situation, as a contrasting movement to utilizing big data where one tries to improve the accuracy of algorithm output by using data larger than a certain quantity, analysis of or research and development using highly accurate small/little data[11] that can correctly describe the reality by using the indices of singularity, similarity, and the like have progressed; and it is being found that data quantity itself does not necessarily directly lead to the accuracy of output as software and success in business.

---

10 Furthermore, at a Study Group meeting, the following view was also expressed, "The fundamental idea for business of doing what others cannot do or do not do also applies even to giant platform providers; therefore, it is not said that those platform providers particularly utilize special techniques and effects"; that view has the same basis as this view.

11 In the Study Group, the view stated in the texts was pointed out on the premise that small data means data that becomes smaller as a result of narrowing dow n contexts and conditions, while little data means data that can be acquired orig inally in a small quantity.

For example, there is the direction of analysis and research of conducting analysis with the indices of similarity and singularity, such as a phase, in respective experiment data, even in a small quantity. Thus, analysis using small/little data like this can improve efficiency and accuracy. Also, at a Study Group meeting, the following view was expressed, "Current Japanese companies have actually utilized all sorts of data in various forms, from large data to small data."

From the standpoint of this idea, it turns out that a large amount of data is not always required to ensure the quality of the Data and AI Business; therefore, there is also a possibility that network effects that are said to be a characteristic of the Data and AI Business are not necessarily large in fact.

(4) Current Situation of Competition in the Data and AI Business

As stated in **(2)** above, the Data and AI Business is currently under severe competition, and users make their choices by comparing each business; therefore, for enterprises operating the Data and AI Business, constant efforts for continuous quality improvement (including individual data protection level) have been required. If they neglect this, users seem to immediately cease using their services or switch to other services. Recently, actual examples can be seen, such as news reports on the withdrawal of advertisements from Facebook. Thus, it is remarkable that an enterprise continues to remain at a certain level in existing or new markets.

Given the current situation of competition for the Data and AI Business, the following characteristic trends can be seen in particular; and we consider that first, understanding the current situation is a starting point for considering competition law and policies for the Data and AI Business.

A. Creation of New Markets Through Segmentation Within the Data and AI Business

As stated in **(2)** above, at a Study Group meeting, the following view was expressed, "Business area segregation within the Data and AI Business may progress in the future, with the appearance of a large number of types of Data and AI Business specializing in certain areas."

Once a Data and AI Business using "AI" (vertical AI) specialized in a certain area establishes its market share, even if new entrants attempt to subsequently enter the same area of business, it becomes difficult for them to achieve output accuracy or performance to the same degree. Therefore, those new entrants may typically have difficulty in reversing the situation and acquiring their market share with existing technologies. However, it is also necessary to note that the Data and AI Business using "AI" specialized in a certain area has not only the attribute that it created the new market, but also that an enterprise has been able to acquire a large market share in a certain area because the enterprise provides highly accurate services and considerable benefits to its users. In addition, at a Study Group meeting, the following view was repeatedly expressed, "Even if such vertical 'AI' appears, enterprises can employ a business strategy aiming to be successful as a Data and AI Business by targeting niche areas that have yet to be covered."

On the other hand, it is difficult to predict the future feasibility of autonomous and general AI that can be diverted to all kinds of business, as these considerations

have just begun. However, at the moment, even multifunctional "AI"[12] has not been realized; therefore, it seems to be a prevailing view that in the current situation, more general AI is not likely to exceed the quality of "AI" specialized in an individual function.

At a Study Group meeting, the following view was expressed, "Such general AI or multifunctional 'AI' would constitute different markets from those of vertical 'AI' or specialized 'AI'."

B. Ingenuity of Platform Providers Working on the Data and AI Business

In the current situation, among the enterprises working on the Data and AI Business, in particular, the enterprises providing services assumed to be used by numerous parties are sometimes called "platform providers" by lumping them all together. However, at a Study Group meeting, the following view was expressed, "In the first place, the term 'platform' is used with various meanings depending on speakers; in addition, the details of the Data and AI Business developed by individual enterprises that actually operate platform business are considerably different, as can be seen only from major platform providers. Accordingly, it is inappropriate to discuss them by lumping them all together."

For example, even Google, Amazon, Facebook, and Apple (sometimes collectively called "GAFA,[13]" or including Microsoft, sometimes called "GAFAM") that are often referred to as "platform" businesses remarkably differ in their scopes of business, specific characteristics, and competitive advantages. As a specific analysis, at a Study Group meeting, the following view was expressed, "First, while Google has independently established various information infrastructures and has many channels to its customers, it essentially generates profit by leading those various channels to advertising revenue; therefore, it needs to reinvest the acquired revenue in improving those channels. Second, the scope of Facebook's business is very narrow, but it provides services that attract more attention from users than searched information and effectively provides advertisements in those services. Furthermore, Apple is a company that particularly depends on hardware business; in recent years, it depends especially on iPhone, one of its hardware items. Lastly, Amazon is a company whose main business is a retail and logistics service. Although Amazon Web Services (AWS), its cloud service, has been producing a certain level of performance, its contribution to sales is still limited. Thus, each company's business has its own characteristics, and none of those is by any means a 'versatile player' with competitive superiority in all business areas. Moreover, those companies are in a competitive relationship, and also in a relationship where they engage in severe competition within the same markets or for new markets by taking advantage of their respective strengths. In addition, these four companies have in common that their core business accounts for a large percentage (dependence) of their sales, and it can be presumed that each of them is actually facing fundamental issues in business management to maintain its revenue sources."

---

12 This refers to "AI" that has multiple functions specialized in certain purposes of use in one neural network.

13 At a Study Group meeting, it was also pointed out that "these four companies h ave in common that their sales in North America account for at least 40% or m ore of total sales; accordingly, it cannot necessarily be said that they are global platform providers."

In addition, at a Study Group meeting, the following view was expressed, "Given these characteristics of 'platform,' in general terms, if multiple similar kinds of platforms coexist, this would lead to inefficiency, since numerous parties would be using it."

Furthermore, at a Study Group meeting, the following view was expressed, "I have the impression that Google, Amazon, and the like have been inconsistently investing in various companies operating the Data and AI Business. However, given that the future is unpredictable and the revenue follows the law of increasing returns, it would be important to keep investment destinations broad; from this viewpoint, their investment activities may actually be reasonable." However, in the first place, it is not only GAFA that conducts such investment activities.[14] Moreover, the scopes of business, specific characteristics, and competitive advantages of these companies making such investments are actually limited and specialized; and they do not intend to dominate all the relevant business. From this viewpoint, we can point out that a wide range of investment activities do not immediately mean diversification of business areas. In addition, as stated in **(2)** above, in the context of the Data and AI Business, given that investment alone cannot generate revenue, and that based on which business ideas enterprises will build their mechanism to generate revenue affects their competitiveness, large-scale investment does not seem to directly lead to competitiveness.

(5) Current Situation of the Data and AI Business in Japan

Currently in Japan, regarding parties to the Data and AI Business, data holding parties and data analyzing parties ("AI" developing and providing parties) are separate in many cases. Accordingly, we consider that in addition to the design of algorithms, it is important to build a "mechanism" where data is smoothly transfered from a business perspective, to invigorate the Data and AI Business in Japan.

On the other hand, some examples have already been seen in Japan where the Data and AI Business has been actively developed. For example, at a Study Group meeting, the following view was expressed, "Data utilization has progressed in very broad business areas, such as digital marketing, finance, medical-care and health-care, automobiles, airplanes, infrastructure, production facilities, personnel (employment and evaluation), coaching for sales and nursing care, and the like. In addition, in business areas like the logistics industry where data utilization has not yet fully progressed up to now, there are emerging needs to manage operations using data.[15]

Moreover, at a Study Group meeting, as a typical example where a Japanese company has successfully been handling a Data and AI Business up to now, one case was introduced, "There is an example of Komatsu Ltd., which automates dump trucks' driving in closed zones, and enables inexperienced drivers to carry out

---

14 For example, recently, the acquisition of ARIMO by Panasonic has been reported .

15 "Artificial Intelligence and AI 2017" by GLOCOM of the International University < http://www.glocom.ac.jp/news/3246> introduces many actual examples of Japan ese companies' own Data and AI Business, including utilization of small/little da ta.

tough excavation by utilizing censors and machine learning."[16] In addition, at a Study Group meeting, it was also pointed out that as examples of vertical-type platforms of Japanese origin, there are industry-specialized types of platforms, such as furniture retailer Nitori, and clothing retailers UNIQLO and ZOZOTOWN, metasearch-type of comparison websites, retail platform Seven-Eleven, and the like.

On the other hand, regarding the current situation of Japanese companies' real data utilization, at a Study Group meeting, the following issue was pointed out, "Although in the case of real data, the cycle required to make the mechanism of data utilization function and succeed tends to be long (it takes one day or more), it seems to be easy for companies that can shorten that cycle, in particular, to improve performance and further data sharing. However, actually, there are many companies, mainly, chemical manufacturers, that confine themselves to analyzing and utilizing in-house data in-house." Moreover, the following view was also expressed, "In Japan, because no company exists that took a lead in data accumulation and succeeded in accumulating voluminous data yet, each company has been able to handle competition based on the data quantity scale that each company can individually analyze. Thus, no company has emerged up to now with such overwhelming competitive superiority based on data accumulation as providing strong incentives for companies to provide data. This is one reason why data utilization has not progressed."

Furthermore, from the perspective of progress in international collaboration, an example has also appeared where a Japanese company utilizes an "AI" platform with U.S. origin. For example, at a Study Group meeting, Citrine Informatics, a U.S. company collaborating with Panasonic, was introduced as a company that has drawn attention for collaboration with the Japanese materials industry, and the following view was expressed, "The company provides services that improve experimental efficiency by predicting experimental results to produce new materials through machine learning."

3. Future Forecast of AI Technology or the Data and AI Business

(1) Future Development of Deep Learning

First, some kinds of information sources utilized by humans can be found within all the real world information perceived by humans. Because large data processing has led to highly accurate output due to the development of deep learning, among those human information sources, utilizing information sources that have not been utilized to date has easily lead to realization of more highly accurate output. Deep learning has the potential to create new values by extracting features from real world information that has not been utilized to date and by integrating them.

In this respect, at a Study Group meeting, the following view was also expressed, "Because machine learning is the process of externalizing tacit knowledge, tacit knowledge and real data may be connected to produce new services and technological innovation in the future."

---

16 Unlike AI that automates humans activities by using data, as stated in **(1)** above, this example is sometimes positioned as an example of the utilization of Intelligence Augmentation (IA) that cooperates with humans and improves their performance.

Moreover, at a Study Group meeting, the following view was expressed, "I consider that in the future, there will be a way to innovate on unsupervised learning, which differs from the world of supervised learning where acquisition of large or good-quality labeled data is a deciding factor." This unsupervised learning also referred to in **1.(3)** above is a technology with the potential to provide highly accurate output without labeled data, by mechanically learning the process of integrating various data.[17] Given the view as stated above, unsupervised learning may become mainstream, and collecting labeled data may no longer lead to competitive superiority in the future.

In addition, we consider that as stated in **1.(4)** above, data utilization may also rapidly spread if various users require further ways of analysis due to even more progress with commoditization of algorithms, among the necessary factors for the Data and AI Business.

(2) Future Forecast of the Data and AI Business in Japan

Examples of areas in which the Data and AI Business is expected to be invigorated in Japan are the IoT and service industry areas.

First, regarding the IoT area, given that this area is related to all real-world business activities, at a Study Group meeting, the following view was expressed, "U.S. horizontal platform providers with strengths in a different area, namely, collection and analysis of virtual data, would not dominate all of the IoT-related business."[18] In addition, at a Study Group meeting, the following view was also expressed, "in fact, what other business enterprises will develop cannot be decided only using economic rationality. The more detached from an enterprise's basis of value and business details the potential business is, and the stronger the profitability of its existing business, the more difficult it is for the enterprise to launch other business. Moreover, the ideal business vision held by management and the other cultural background also significantly affect the enterprise's business development. In addition, if the enterprise is a large-sized listed company, it cannot easily launch any business other than business that has advantages commensurate with its large scale, according to the theory of capital."

---

17 At a Study Group meeting, the following view was expressed, "This unsupervised learning is considered to be similar to the process of human language acquisition." In other words, as with humans understanding languages, only one information receiver among the five senses, namely, tactile sense, visual sense, auditory sense, sense of smell, and sense of taste, is not sufficient to understand languages by machine learning; and the process of integrating information in different dimensions (modals) acquired through the various senses, including the above senses, and of understanding the real world expressed by languages is necessary. It can also be said that unsupervised learning has the potential to mechanically learn such process of integrating information itself.

18 Also, in the IoT area, given that it is predicted that in the future, many IoT business companies specialized in certain types or fields of business, including U.S. platform providers, will coexist in quite a dispersive manner, at a Study Group meeting, the following view was also expressed, "I believe that it is quite possible that a business on par with Google will appear from Japan." In addition, at a Study Group meeting, the following view was also expressed, "Given the current competitive environment, it is quite possible that a strong business will appear with which even Google and Amazon will have no choice but to keep in line."

Based on the above, even if the invigoration of the Data and AI Business is expected in the IoT area, it is not easy for enterprises operating a Data and AI Business to enlarge their business by developing it from the existing business area to any other business horizontally. Accordingly, whether such strategy may be employed is required to be considered by scrutinizing what management strategy each enterprise has in the first place.

Second, regarding the service industry area, at a Study Group meeting, the following view was expressed, "The country that is facing the needs of service industry streamlining the most is Japan because Japan is facing a rapid decrease in its labor force unlike Europe and the U.S. Therefore, Japan is expected to increasingly introduce "AI" and IT technologies into the service industry ahead of the world in the future."

Regarding the business strategy that Japanese companies can actually employ in those areas, at a Study Group meeting, the following view was repeatedly expressed, "Japanese companies have to grow by adapting to the direction of the spread of data utilization, and by successfully using Google and Amazon, and further, technologies and the Data and AI Business of various domestic and overseas 'AI' companies." For example, we consider that if U.S. platform providers provide AI services that constitute the business base at low prices, it would be an effective competitive strategy for Japanese companies to compete on the concept of ensuring high quality and high added value of their "core" business by effectively utilizing those AI services.

On the other hand, we consider that the strategy to counter U.S. platforms "indirectly" by establishing vertical-type platforms specialized in specific business areas is also effective. For example, a movement toward construction of vertical platforms can actually be seen, such as the fashion industry represented by UNIQLO and ZOZOTOWN, and the furniture retail industry represented by Nitori Co., Ltd.

In light of the current situation and future forecast as stated above, it is less realistic to predict regarding the future Data and AI Business in Japan that all data will continue excessively concentrating in horizontal platform providers currently collecting a wide range of virtual data and that thereby in each market, there will be no competitors that can be on par with horizontal platform providers regarding the quality of all services.

Instead, we consider that it is realistic as a future vision that utilization of real data closely relating to industries will progress, and that many vertical platform providers, including those of Japanese origin, that specialize in various areas of specialty and that aim to utilize data and thereby improve the quality of their AI services will coexist.

(3) Issues Based on Future Forecast of the Data and AI Business in Japan

First, when collecting the necessary data to conduct the Data and AI Business, while there are image sets available to everyone such as image.net[19] provided by Getty Images Inc., the terms of service that restrict commercial use of data exist in many cases. Moreover, as stated in **2.(5)** above, if there are a large number of

19 http://welcome-to-gettyimages.jp/imagenet/guidance.html

stake holders that want to streamline their business by using data, and data holding parties and data processing or using parties are separate (for example, in the case of a plant, although the plant operator holds its operation data, the parties who want to conduct business using the data are considered to include plant manufacturers, and further, plant operators and the like in developing countries), then when receiving data from data holding parties, problems and barriers can be seen in the execution of agreements regarding protection of trade secrets, right of usage, and distribution of results. These have also led to barriers against data analysis by freely using algorithms and utilizing the analysis results for business.

In addition, in connection with the competitive strategy of Japanese companies, at a Study Group meeting, the following view was expressed regarding the importance of looking toward international collaboration in data utilization and global markets set as the goal for data utilization, "Even if they initially grew by leveraging the advantages of the Galapagos syndrome, if they do not reorient their paradigm based on a more international and universal thought at some phase, they would fail to grow as a business."

Furthermore, at a Study Group meeting, the following view was also expressed, "In light of the current situation of Japanese companies where digital innovation has not spread, in order for Japanese companies to successfully utilize AI, they need to first understand what AI is and what the technology called AI enables us to do. In addition, for organizational reform, they need to improve decision-making processes and to create an environment where younger employees can easily challenge the status quo."

Part 4 Issues on Laws and Policies for the Data and AI Business

Regarding issues required to be addressed to invigorate the Data and AI Business in Japan, while seeking ideal approaches to competition law and policies is useful, it is necessary to consider role allocation and priority from a wide range of perspectives including personal information protection law, intellectual property law, unfair competition prevention law, trade law, industrial policy, public policy, business management and administration, and the like (we consider that with this verification, we can also identify what is insufficient only using measures pursuant to competition law and policies).

As a result of organizing situations where free transfer and utilization of data (which are necessary to invigorate the Data and AI Business) have not currently been implemented in Japan, we consider there to be roughly two cases as follows: (i) as stated in **Part 3, 3.(3)** above, in some cases, there are issues concerning Japanese companies' efforts and other practices in the private sector, and (ii) in other cases, there are issues for the Japanese government in establishing laws and policies and developing a system environment toward the invigoration of data utilization. Accordingly, we consider point (i) in **1.** to **2.** and point (ii) in **3.** to **5.** below.

1. Necessity to Organize Relationships between Protection of and Rights for the Data and AI Business

Since the Data and AI Business is not limited to individuals or individual companies but is operated by using data acquired from the outside, the relevant parties usually make certain arrangements regarding the handling of data and its deliverables.

In this respect, at a Study Group meeting, the following view was repeatedly expressed, "It is an issue that no rules have been developed regarding how we coordinate relationships of data ownership, copyrights of deliverables, rights of software users, and the like." Given that most of the economy and society is actually regulated by contracts, it can be said that the priority issue is to advance development of an appropriate market environment where voluntary data sharing, transfer, or use is encouraged based on those contractual relationships.[20]

On the other hand, we cannot deny that there are some aspects that cannot be resolved just by merely formulating contract models. For example, at a Study Group meeting, the following view was expressed, "From the standpoint of enterprises, even if they provide data for the Data and AI Business, they generally have a strong desire to avoid a situation where the results based on their data are ultimately conveyed to other enterprises in the same industry, although they may be able to tolerate it if such results are ultimately conveyed to enterprises handling general-purpose products in different industries." In that case, data is not shared unless enterprises have business incentives such that they cannot win the competition without data sharing, even if some of the results are ultimately conveyed to enterprises in the same industry. However, enterprises should not be forced to share data even where there are no such incentives. Accordingly, what should be resolved is the current situation where parties cannot reach agreements and data utilization is not advanced because parties do not have a common understanding of contract law, intellectual property law, or data (personal information) protection law, and because their expectations and analyses regarding the advantages and disadvantages of data transfer, sharing, and utilization do not match, although they want to promote data utilization. This is expected to be resolved to a certain extent by not only formulating contract models but also developing an environment enabling the sharing of best practices. For example, other than the idea that many models should be converged on one model, given that the Data and AI Business is in its infancy, we consider that it is necessary to enhance companies' awareness of data utilization and promote efforts in individual cases by accumulating and introducing various cases of success and ingenuity as best practices.

The contract models to be formulated by coordinating various relationships of rights as stated above should not be converged on one specific model due to their nature, and various patterns of models should be prepared. For example, there is an option for an administrative agency to serve as one of the coordinators; in addition, there can be various options where a group of private enterprises may take the lead or that each enterprise may propose their own models. Furthermore, we consider that the various patterns of models include not only models simply assuming data transfer within the domestic markets of Japan, but also those that are internationally and universally suitable. Therefore, it is important that the results of METI's ongoing efforts to formulate guidelines for data transactions are

---

20 Regarding the process of organizing the relationships of rights between parties in connection with data utilization, the issues are not specific to Japan; there are similar issues in foreign countries. At a Study Group meeting, the following view was expressed, "If we attempt to ensure active provision and utilization of data, we cannot avoid the issue of data ownership. In the U.S., legal relationships regarding data have not been successfully organized, either. Even GE, that is often mentioned as a successful example of the Data and AI Business, had difficulties in negotiations with airline companies that were reluctant to provide data and made efforts to respond to each of the difficulties."

penetrating the Data and AI Business of Japanese companies; in addition, we consider that it is necessary to accelerate a movement toward proposing those models from further different perspectives.

At a Study Group meeting, the following view was expressed, "Japanese companies tend to seek governmental endorsement of their business, regardless of whether this is right or wrong. On the other hand, as seen in the development of IP telephony and the MVNO market, once the relevant business is found to be 'permissible' under regulations, the business significantly grows." This seems to suggest that if legal barriers or uncertainty are removed by organizing the relationships of rights between data holding parties, data processing parties, and data using parties, the Data and AI Business in Japan will rapidly develop.

2. Necessity to Address Organizational Issues in Japanese Companies Conducting the Data and AI Business

(1) Necessity to Develop and Secure Human Resources

At a Study Group meeting, the following view was expressed, "Under the current situation in Japan, persons holding data and persons with a certain degree of data analytical ability are separate. In order to develop human resources with a data analytical ability, it is necessary to considerably advance the movement of the 'democratization of AI' or to considerably advance collaboration with persons who already have an analytical ability."

In addition, as stated in **Part 3,3.(3)** above, at a Study Group meeting, the following view was repeatedly expressed, "In addition to the personnel possessing special techniques (as stated above), it is necessary to increase personnel capable of successfully utilizing 'AI' within companies." For example, at a Study Group meeting, the following view was expressed, "In order for Japanese companies to be able to successfully utilize 'AI', they would need to learn what 'AI' is and what the technology called 'AI' enables us to do. Based on this viewpoint, for organizational reform, it seems to be necessary to improve decision-making processes and to create an environment where younger employees are encouraged to make challenges."

(2) Necessity to Develop Systems in Companies

At a Study Group meeting, the following view was expressed, "In order to develop 'AI'-related deliverables, it is necessary to make an adjustment between three technological areas, namely, hardware, software, and algorithms. These technologies differ in their development methods, and the age distribution of engineers in each field is biased; therefore, collaboration among engineers beyond age groups is necessary, and this is one of the issues. It is difficult for such collaboration to be cultivated naturally, and specific organizational reform is necessary."

3. Necessity of Discussions Regarding Various Laws and Policies to Promote Data Transfer

At a Study Group meeting, discussions were held regarding a necessary system reform to promote data transfer as below.

First, at a Study Group meeting, the following view was expressed, "If the standardization and normalization of data for distribution management, data regarding industrial machinery, and the like are advanced, this will provide greater changes to enhance the relevant business and the user experience by utilizing data." We consider that instead of questioning the "hoarding" or release of data held by an enterprise, it may be important to allocate resources to such a system reform from the perspective of industrial policies.

In addition, at a Study Group meeting, the following view was expressed, "Regarding data for which the protection of rights or incentives is not required or data that is public and held by public institutions (government or local public entities) or public corporations, the release and sharing thereof should be promoted." If private enterprises can utilize such data, it is expected that the types and volume of data available for the Data and AI Business of Japan will increase and that the Data and AI Business will be invigorated.

Furthermore, as stated in **Part 3, 2.(5)** and **3.(3)** above, there seems to be the industrial policy or public policy standpoint that collaboration between overseas online platform providers and Japanese manufacturers should be promoted. Recently, in Japan, discussions regarding measures against GAFA in Europe are frequently being referred to; and at a Study Group meeting, the following view was expressed regarding the direction of these discussions in Europe, "It is necessary to note that these discussions admit that using U.S. platforms is useful for European companies as well; and based on that viewpoint, these discussions consider laws and policies from the perspectives of how they appropriately use these platforms, and how they develop an environment fostering an ecosystem where vertical platforms coexist based on these platforms. On the other hand, regarding the direction of discussions in Japan, there is a strong awareness that they should develop domestic industries that can counter these U.S. platforms, and sufficient discussions have not been held from the perspective of what means are really necessary to invigorate the data business in Japan."

4. Necessity to Counter Data Protectionism in China and Emerging Countries

At a Study Group meeting, the following view was repeatedly expressed, "We cannot ignore dramatic technological innovations not only in the U.S., but also in China in the areas of Data and AI Business and AI technology."

In addition, at a Study Group meeting, the following view was expressed, "As a typical example of domestic law containing data localization regulations that prevent data transfer beyond borders, there is the Internet Safety Law of China. In the context of international trade law, a certain agreement was reached for responses to such restriction on transfer in the chapter of electronic commerce of the TPP; however, negotiations are still continuing toward a solution. In such a situation, further efforts are necessary for this area." The following view was also expressed, "The issue of data localization has already been deemed a very serious issue, e.g., in discussions on the TPP, and we should consistently oppose data localization including the Cybersecurity Law of China. Data localization is nothing but an attempt to hoard data subject within the nation and stands in direct opposition to an open and free Internet and AI society." These data localization regulations mean that only Chinese companies obtain a large amount of data that other countries' companies cannot use (in light of the population and economic

scale of China, there is no doubt that it is voluminous data) and achieve competitive superiority in the areas of data and AI.

On the other hand, at a Study Group meeting, the following view was also expressed, "It is partially understandable that countries which have difficulty in effective extraterritorial application or enforcement of law against platform companies based in foreign countries have no other means but data localization to protect the personal information of their citizens and data relating to security and realize public policies such as ensuring taxes. Also, as the advancement of IoT accelerates transformation of the entire real world into data in the future, there will be issues that cannot easily be resolved, for example, whether citizens can actually tolerate such a situation where all data regarding connected cars and self-driving cars running in their country is located overseas, or whether other countries' investigative authorities should be permitted to access the relevant country's data when an accident or crime occurs."

In any case, in order to ensure the invigoration of the Data and AI Business in Japan, it is definitely advisable to promote free data transfer beyond borders. Therefore, while considering the development of such international system or the establishment of such principles as enabling each country's enterprises to safely transfer the country's data internationally, including giving consideration to the legitimate purposes of public policies, enforcement of law, and security, it is necessary to promptly discuss countermeasures against excessive data protectionism in China and other countries.

5. Necessity of Multifaceted Discussions Regarding Introduction of EU's Data Protection Law in Japan

(1) Multifaceted Discussions Regarding Introduction of EU's Data Protection Law in Japan

In general, personal information protection law and normative consciousness existing behind the law may differ by region; therefore, if discussions regarding the EU's data protection law and other foreign personal information protection law are blindly introduced in Japan, this may result in the introduction of regulations that are detached from the Japanese sociocultural environment. In fact, at a Study Group meeting, the following view was expressed, "The EU's General Data Protection Regulation, Regulation (EU) 2016/679 ('**GDPR**'), is derived from the rights to personal information protection under the Charter of Fundamental Rights of the European Union. Therefore, I believe that these approaches cannot directly apply to Japan."

On the other hand, the Act on the Protection of Personal Information of Japan was formulated under the influence of the former EC Data Protection Directive (Directive 95/46/EC) to a considerable degree, and we cannot deny that the recent amendment to the Act on the Protection of Personal Information mainly aimed to obtain certification for its sufficiency from the EU. In connection with this, at a Study Group meeting, the following view was also expressed, "Regarding the GDPR, toward the start of its application in May 2018, platform companies including GAFA took measures to globally comply with it; and countries other than the EU also made efforts to amend laws by reference to the GDPR. Therefore, it is necessary to note that the GDPR is actually acquiring the position of an international standard for data protection and utilization."

Even if foreign services are convenient, the EU seems to have a tendency where it requires that the services comply with the common standards formulated by the European countries when accepting the services. In fact, at a Study Group meeting, the following view was also expressed, "Behind the EU's discussions on measures against GAFA, there seems to be a strategy to counter GAFA by attempting to make the EU's rules international standards." Therefore, in order to prevent Japanese enterprises' business activities in Europe and other affected countries from being unnecessarily eroded by this, we should not understand the EU's policies one-sidedly; but based on the possibility that the EU may strategically employ different directions in laws and policies depending on the situation, we consider that multifaceted discussions will be important with the perspective of strategically utilizing the EU's standards that have a strong international influence, including the GDPR, to achieve our country's policy purposes (we consider that discussions from this perspective will also be necessary when verifying U.S. laws and policies).

(2) Necessity of Public Discussions and Examinations for Data Portability

Among the issues concerning the EU's data protection law, regarding data portability, the following view was expressed at a Study Group meeting, "In respect of introducing data portability in Japan, it is necessary to consider its meaning and purposes without only focusing on the aspects of competition policies or measures against GAFA." In addition, at a Study Group meeting, the following views were expressed, "The right to data portability means protecting human rights relating to personal information protection and self-determination rights, and enabling people to use their own data in the services that they desire without such data being hoarded by a limited number of platforms in the data-oriented society where humans are managed or evaluated as data. What competition-promoting effects that the right to data portability which promotes a switch of services has is largely unclear. However, it is necessary to deepen discussions regarding the meaning of data portability from any perspective other than promoting competition." and "In order to strengthen self-control over peoples' own data by data portability and to ensure that individuals can play an active role in the data ecosystem, non-paternalistic methodologies, such as Personal Data Store (PDS) and information banking, are also effective, other than legal regulations or creation of rights." On the other hand, the following view was also expressed, "Where discussions are insufficient regarding how we decide the person to whom data legally belongs, what scope of data is able to be transferred by data portability is not determined. Therefore, this is not an issue that can easily be introduced in Japan."

Data portability could function to encourage individuals to play an active role in the data economy and data-oriented society by contributing to ensuring individuals' self-information control rights and various options. On the other hand, if data portability has such a function relating to individuals' basic values, we consider it to be important to ensure that discussions on data portability are advanced while encouraging public discussions relating to the positioning of individuals in the data-oriented society in the future.

(3) Necessity to Balance Privacy Protection and Data Utilization

While there are points to be noted as stated in **(1)** and **(2)** above regarding the introduction of the EU's data protection law in Japan, we consider that the point that the EU's data protection law attempts to protect individuals' privacy and at the same time not to impede the utilization of personal data and thus attempts to

balance protection and utilization is worthy of being referred to in Japan as well, mainly from the perspective of industrial policies.[21]

The necessity to balance utilization of data and protection of individuals to whom the value of data belongs shares a common ground with the suggestion obtained from intellectual property law, as stated in **Part 5, 4.(4)A.** below. Given the above, we consider that general attention needs to be paid to this point in considering various laws and policies for the invigoration of the Data and AI Business.

Part 5 Ideal Approaches to Competition Law and Policies for the Data and AI Business

As stated in **Part 2** above, when attempting to resolve issues (which is necessary to invigorate the Data and AI Business in Japan), competition law and policies are one useful tool in that they can restrain or correct an enterprise's acts that impede such invigoration. There seem to be some cases where appropriate enforcement of law is favorable, for example, against an act using a superior bargaining position to unduly and unilaterally exploit a large amount of data in an unforeseeable manner, to the extent that this is supported by specific evidence.

On the other hand, it is necessary to note that applying or enforcing them in individual cases could have limitations or adverse effects. In addition, when considering ideal approaches to competition law and policies for the Data and AI Business in Japan, it is important to prevent other enterprises from neglecting to pursue alternative means of competition (i.e., "not to indulge" competing enterprises) with a view to preventing the relevant enterprise's sound competitive activities or activities having a justifiable reason from shrinking, and to maintaining or promoting truly dynamic and active competition. From this perspective, below, we mainly discuss: (i) how we should understand the relevant markets in the Data and AI Business (**1.** below); (ii) how we should evaluate the Data and AI Business in light of the requirements under competition law (**2. and 3.** below); and (iii) the limitations or adverse effects that should be noted in the context of approaches to the Data and AI Business under competition law and policies (**4.** below).

1. How We Should Understand Relevant Markets in the Data and AI Business

At a Study Group meeting, it was pointed out that when analyzing the Data and AI Business, it would be important to analyze technological development from the perspective of engineers and monetization from the perspective of economists, other than legal analysis. Without an appropriate understanding of the current situation of technological development, it is impossible to appropriately understand the relevant markets in the Data and AI Business. Therefore, the following points are important in connection with how we should understand the relevant markets in the Data and AI Business.

---

[21] See paragraph (3) of the recital of the GDPR, and Article 1 of the Act on the Pro tection of Personal Informationof Japan

(1) Necessity of Analysis in Line with Individual and Specific Situations of the Data and AI Business

First, as stated in **Part 3, 2.(4)A** above, it is necessary to note that there is no abstract and general data market or AI market. For example, at a Study Group meeting, the following view was expressed, "A group of enterprises focusing on general AI and a group of enterprises focusing on vertical AI may belong to different markets." In addition, it is also necessary to note that in individual and specific markets defined for the Data and AI Business, there are interactions between business activities that can achieve monetization only by developing business in a manner that participates multiple markets.

(2) Importance of Creation of New Markets in the Context of the Data and AI Business

In the Data and AI Business, it is possible to enter into competition while creating new markets with no limitation, depending on business ideas. In that sense, it can be said that the advantage of existing large palyers is not always crucial in the context of accumulating data analysis know-how. Therefore, in order to appropriately understand competition for the Data and AI Business, it is necessary to focus on competition for new markets instead of competition within existing markets. In fact, given that mainly in the U.S., there is a penetrating view that competition in the Data and AI Business is not competition within existing markets but competition for new markets,[22] the relevant authority is required to be careful in evaluating competition that could lead to inappropriate protection of existing business models.

Furthermore, while we cannot deny that the existence of network effects in the Data and AI Business may bring competitive superiority within existing markets, this may also lead to severe competition among enterprises for new markets. Therefore, attention should also be paid to the view that this has the effect of promoting competition through large investments.[23]

2. Whether Anti-competitiveness Occurs in Association with the Data and AI Business Needs to Be Considered Very Carefully

As a result of taking into account the following points, we consider that anti-competitiveness may occur in association with the Data and AI Business only in a limited number of exceptional cases.

(1) Impact of Characteristics of Data on Competition

We consider that "data" used in the Data and AI Business has the following characteristics, and these characteristics seem to indicate a tendency that competition in the Data and AI Business is likely to be active. The reason for this is as follows: even where an enterprise conducts business utilizing a specific type of data, other enterprises can collect and use other alternative data; and it is often possible to use another combination of data to achieve the business.

---

22 Bernard A. Nigro, "'Big Data' and Competition for the Market", December 13, 20 17.

23 Bernard A. Nigro, "'Big Data' and Competition for the Market", December 13, 20 17.

A. Non-exclusivity of Data

There is no legally exclusive right, such as a patent right, for data, and data can be used on a non-exclusive basis. In other words, there is no legal prohibition on various persons obtaining and using the same data at the same time.

In addition, in light of the course of actually obtaining data, while data is necessary as an input for the Data and AI Business, it seems to be difficult to actually assume a situation where data is concentrated into a specific enterprise. For example, as stated in **Part3, 1.(3)** above, we consider that data existing in the non-digitalized form of collective human knowledge that has not been processed into labeled data cannot be concentrated in a specific enterprise due to its nature. Also, we consider that it is difficult for one enterprise to dominate every acquisition channel of real data across all types of business.

B. Substitutability of Data

Since there are various and numerous data in the world and there are various sources, it is possible to achieve a certain service by obtaining and combining various alternative data. For example, data includes not only information regarding individuals' or consumer's preferences, but also medical information, industrial information, product information, infrastructure information, and various statistical information held by public institutions. Based on this viewpoint, at a Study Group meeting, the following view was also expressed, "Generally, the barrier to enter business utilizing data is low." As stated in **Part 4,3.** above, in particular, it is advisable that information held by public institutions be increasingly released in the future.

C. Timeliness of Data

Essentially, data can exert its added value by being used in a timely manner as it quickly becomes obsolete.[24]

D. Importance of Data Processing

The added value of data significantly depends on the quality of data or the analysis method or perspective other than the quantity of data. We consider that utilizing knowledge obtained by analyzing data, such as business ideas, e.g., through structured "smart data" that enables data analysis or data scientists, is the source of competitiveness, and that a typical example of this is the Data and AI Business utilizing little data or small data.

At a Study Group meeting, the following view was expressed, "Output of 'AI' is inductively drawn based on the analysis of features held by data. However, the output that is inductively obtained information may differ depending on the initial algorithms of the relevant 'AI' as an analyst; and even if the same 'AI' is used, the output may differ depending on the past learning process." On that premise, we consider that even if "AI" learns using similar data, the output will not always lead to a specific outcome; conversely, data is not the sole element affecting the quality of "AI" output.

---

[24] However, there is data for which historical accumulation is important.

(2) So-called Theory of Monopoly Leveraging

In the context of the Data and AI Business, there are active interactions among multiple markets including new markets. Given the above, some people consider this point based on the theory of "monopoly leveraging" that addresses an issue such that if an enterprise with market power in a market exercises its market power in any other market, in what circumstances such exercise will contravene competition law. According to this theory, enforcing competition law, so to speak, "in a preventive manner" could be permitted on the grounds that such exercise of market power may cause anti-competitiveness in a market where no one has market power.

However, as stated in **4.** below, such enforcement in a preventive manner may adversely affect the Data and AI Business. Furthermore, for example, in the U.S., the Supreme Court and lower courts have repeatedly dismissed the simple argument that "the relevant act is illegal pursuant to the theory of monopoly leveraging." Instead, to date, the courts have clearly indicated their attitude of focusing on whether there is a substantial risk that market power is also created in the other market where an enterprise with market power in a market exercises its market power, and whether such exercise of its market power in the other market, so to speak, circularly contributes to strengthening its position in the previous market where the enterprise has market power. We consider that these decisions also serve as a useful reference in Japan.

Given the current situation of the Data and AI Business, under the competition law of Japan, it seems that circumstances assumed by the theory of "monopoly leveraging" do not necessarily arise. At a Study Group meeting, as stated in **Part3, 3.(2)**. the following view was expressed, "What other business an enterprise will conduct significantly depends on the economic rationality, how the potential business is detached from the basis of value obtained by the enterprise before then, how the potential business differs from the enterprise's existing business, the profitability of the potential business (the stronger the profitability of its existing business, the more difficult it is for the enterprise to launch other business; therefore, the enterprise will spend its resources on investments or innovations to maintain or strengthen the profitability of the existing business), the ideal business vision held by the management, the sense of values and other cultural backgrounds, etc. Therefore, it is not easy for even a large-sized platform provider to plan to expand its business to other types of business." Also, at a Study Group meeting, the following view was expressed, "As represented by GAFA, if an enterprise is a large-sized listed company, it cannot easily launch any business other than business that has advantages commensurate with its large scale, according to the theory of capital."

On the other hand, at a Study Group meeting, the following views were expressed, "Vertically specialized services in the true sense may be prevented from being born in some respects because enterprises are concerned that if they pursue a vertically specialized service in a biased manner, they will consequently have no other choice but to use a large-sized horizontal platform and will have to pay usage fees, etc." and "In fact, in Europe, the possibility that vertically specialized services have been prevented from being born cannot be denied for the same reason." However, at the same time, at a Study Group meeting, the following view was also expressed, "Recently, vertical services have actively appeared in the Internet industry, and they

are obtaining bargaining power comparable to that held by large-sized horizontal platforms."

Based on the above views, there would be room for argument regarding to what degree it is realistic that an enterprise with market power in a certain horizontal Data and AI Business market will exercise its market power to exert its influence over a market of vertical AI specialized in a specific area.

(3) Necessity to Comprehensively Consider Competition-promoting Effects and Anti-competitiveness Realized by an Act Participating Multiple Markets in Other Markets

Regarding an enterprise employing a business model that closely links multiple markets to each other (e.g., a provider of a platform that only functions by supplying goods or services to two different groups of users), there is a persuasive view that whether such enterprise impedes consumer benefits should be considered by analyzing the multiple markets not separately but in the aggregate. Based on this view, it is necessary to consider whether the requirement of impediment is satisfied by comprehensively taking into account the protection of incentives for the entire business and investment activities regarding various services and other positive effects occurring in other markets.[25] In practice, we consider that there is room to employ this view when construing the requirement of market harm under the competition law of Japan or considering the priority order in enforcement.[26]

For example, as stated above, enterprises respectively holding certain positions in different markets may compete for a new market with each other by taking advantage of their existing services. In addition, it is possible that a U.S. online platform provider holding a certain position in a market may create a competition-promoting effect in any other market by collaborating with a Japanese manufacturer. In this case, we consider that it is necessary to comprehensively consider the positive effects and anti-competitiveness being generated in different markets without falling into a short-sighted discussion detached from the current dynamic situation of the Data and AI Business.

(4) One Aspect Where Horizontal Platform Providers Invigorate Competition

If a mutually complementary relationship between a Japanese company and a large-sized horizontal platform provider ensures an active competition process that

---

25 State of Ohio et al. v. American Express Company et al., Brief for Amici curiae, Antitrust law & Economics scholars in support of respondents, etc.

26 Request for public comments on (proposed) amendment to the "Guidelines Concerning Distribution Systems and Business Practices under the Antimonopoly Act" of the Japan Fair Trade Commission, Appendix 2 "Outline of opinions and ideas for (proposed) amendment to the Guidelines Concerning Distribution Systems and Business Practices under the Antimonopoly Act" (June 16, 2017) No. 114 (p. 62), in the context of the tie-in sale] regulations, points out as follows: "Regarding the safety of products, and development, promotion, and protection of intellectual property rights and know-how, as you pointed out, 'tying products' and 'tied products' are not considered separately but may be considered when deciding whether there is a market foreclosure effect in the market of tied-products." We consider that it is not impossible to read this as suggesting that when considering anti-competitiveness in a market, there is room to consider a competition-promoting effect occurring in another market.

contributes to the protection of domestic users, this may lead to the Data and AI Business in Japan acquiring, through collaboration with overseas platform providers, superiority not only in competition in Japanese markets but also in universal or international competition. In addition, we consider that it is of course permissible to take into account this point in the context of competition law and policies.

In this respect, as stated in **Part 3, 2.(5) and Part 4, 3.** above, There are already many examples where a Japanese company effectively utilizes an overseas platform provider's services in its business, and we expect that those cases will increase in the future. In particular, there seems to be much room for Japanese companies that hold a large amount of real data to acquire competitive superiority by effectively utilizing large-sized horizontal platform providers. Given the above, we consider that the aspect where these platform providers promote competition by Japanese companies should be appropriately evaluated in the context of competition law and policies.

(5) Personal Information Protection Level as One of the Parameters of Competition

We consider that the personal information protection level of a service provided by an enterprise is included in the parameters of competition that are considered in the context of competition law because users may select the service by focusing on this point. In fact, in the business combination case of Microsoft and LinkedIn in Europe,[27] the impact on privacy was raised as a potential concern under competition law.

However, this point was not raised as an apparent issue under competition law. Also, it does not seem that they attempted to randomly raise a potential issue that was uncertain regarding how likely it might occur, but it seems that this point was raised as an issue because they could confirm that there was a certain degree of real possibility that it might occur.

In this respect, when enforcing the competition law against an act that falls within the lawful scope under personal information protection law for the reason that the act may adversely affect the competitive order, especially careful consideration is required by paying attention to both personal information protection law and competition law, so that the enforcement will not have an excessively chilling effect on a company's business activities. For example, regarding the case examples where a violation of competition law in connection with the collection or use of personal information was raised as an issue in Europe, we infer that such collection or use of personal information also violated personal information protection law, in practice.[28]

---

27 http://ec.europa.eu/competition/mergers/cases/decisions/m8124_1349_5.pdf

28 For example, in the investigation for Facebook by the German Federal Cartel Office, it seems that Facebook's violation of the Federal Data Protection Act of Germany (BGH VBL Gegenwert II) was evaluated as an abuse of the market dominant position in some respects. Also, in the business combination case of Microsoft and LinkedIn, how the processing of personal data in a problematic manner would be prevented by the data protection law of each country in Europe at that time and the scheduled establishment of the GDPR was one of the determining factors for the examination.

3. Necessity to Establish the Criteria or Elements to be Considered to Distinguish Sound Competitive Activities and Activities Having Justifiable Reason from Anticompetitive Acts to Prevent a Chilling Effect on Enterprises

Essentially, it is difficult to classify a single enterprise's acts conducted in the context of the Data and AI Business into sound competitive activities and anticompetitive activities.

In fact, at a Study Group meeting, the following views were expressed, "The Data and AI Business is in the process of trial and error in a drastically changing market environment, and it is the current situation of deep learning that technologies are overcoming issues one after another; therefore, it is important not to first formulate regulations, but to ensure that enterprises can freely conduct business separately from any chilling effect caused by regulations." and "Technological innovation always has the aspect of eliminating existing business or enterprises, and the selection due to technological innovation should be clearly distinguished from situations where there are issues under competition law and policies." Thus, in the context of the Data and AI Business, we consider that it is necessary to establish the criteria or elements to be considered to distinguish sound competitive activities and activities having a justifiable reason from anticompetitive acts, to prevent any unnecessary chilling effect from occurring.

(1) Scrutinizing of Sound Business Activities Through the Requirement of "Artificiality"

When regulating a unilateral juridical act under competition law, it is necessary to distinguish sound business activities from competition-restraining acts in a manner that prevents any chilling effect on sound business activities. From this perspective, the Guidelines for Exclusionary Private Monopolization under the Antimonopoly Act limit the "acts constituting acts of exclusion" by considering the existence or nonexistence of an exclusion effect for each category of act and by setting certain conditions on acts. With a view to preventing sound competitive activities from being deemed acts of exclusion, the Supreme Court of Japan[29] also held that whether an act constitutes an act of exclusion should be decided based on whether the relevant act has "artificiality that deviates from the scope of the normal means of competition in light of the market power created, maintained, or strengthened by the act."

At a Study Group meeting, it was pointed out that regarding the "requirements" under competition law relating to this point, whether the relevant act has characteristics that deviate from the scope of sound means of competition in light of the market power created, maintained, or strengthened by the act, namely, whether the relevant act is artificial at a blameworthy level under competition law, would be important elements to consider.

We consider that artificiality, which is one of the requirements under competition law, has a more important meaning in a drastically changing market environment.

---

29 Decision dated December 27, 2010 by the Supreme Court, *Minshu* vol. 64, no. 8, p. 2067; Decision dated April 28, 2015 by the Supreme Court, *Minshu* vol. 6 9, no. 3, p. 518

In other words, it seems to be usual for new participants emerging one after another to be forced to exit from the relevant market due to its uncertain changing business environment. However, when scrutinizing the abnormality behind the relevant act at a blameworthy level under competition law by focusing on the objective nature of the act, artificiality is not immediately found or a specific enterprise is not liable for another enterprise's exit only due to a simple change in the relevant market environment. Instead, we consider that a careful decision is required based on individual considerations with respect to whether there is any extraordinary act that renders new potential options for users meaningless, whether there is any background fact that a new participant was forced to abandon its specific entry plan, and the like.

Based on that viewpoint, when actually deciding that the relevant act can be deemed a sound business activity in the context of the Data and AI Business, various specific factors should be considered, such as whether: (i) the relevant act contributes to enhancing convenience or user experience; (ii) the relevant act contributes to information security or personal information protection; (iii) the relevant act constitutes a mechanism contributing to ensuring interoperability; (iv) the relevant act is reasonable and essential for the platform to continue or improve, e.g., through obtaining revenue or preventing fragmentation; (v) the relevant act is necessary to protect incentives for active data accumulation or utilization (to guarantee a return to investments); (vi) the relevant act is to protect data from infringement pursuant to unfair competition prevention law; (vii) the relevant act constitutes a mechanism contributing to preventing a free ride; (viii) the relevant act enables access to more users through utilizing the platform and contributes to promoting the creation of new business or new entry by users including small- and medium-sized enterprises; (ix) the relevant act contributes to disaster assistance; (x) the relevant act contributes to social and public purposes such as ensuring users' options, and the like.

Among these factors, which factors have an important meaning in connection with the relevant act that is actually considered in an individual and specific case would differ depending on the details of the act. Therefore, we consider that it will be necessary not only to scrutinize various factors to decide whether the relevant act constitutes a sound business activity, but also to organize the relationships between these factors and the details of the specific act.[30]

With a view to strictly scrutinizing the anticompetitive effect on the Data and AI Business, we consider that it could be one option to include a condition that there is no other alternative means that is not competition-restrictive. However, even in that case, we consider that it is necessary to especially carefully examine whether the relevant enterprise could have reasonably employed such an alternative means that was not competition-restrictive retrospectively at the time when enforcement of competition law is deemed an issue. At a Study Group meeting as well, the following view was expressed, "Even if an enterprise has a market dominant position in a service, that is a product developed by itself making investments; and the enterprise's decision on how it will use the product should be respected primarily."

---

30 As specific acts, for example, changing the display method of search results, esta blishing a privacy policy for e-mail service, advertising service, etc., interoperatin g OS, browser, applications, etc., restraining application functions, using data in a closed manner, and the like can be assumed.

(2) Perspective Necessary to Distinguish the Case Where Anti-competitiveness (Exclusion Effect) is Found

Even if there is an act that cannot be deemed a sound business activity, when evaluating whether other enterprises are excluded from competition for a new market, it is necessary to carefully verify whether it can be said that the other enterprises were deprived of an opportunity to enter the market despite their serious efforts to employ alternative means of competition.

Since a market environment facilitating new entry is important for promotion of innovation, competition law is required to be enforced strictly against an act that impedes such new entry. On the other hand, aside from the situation where an enterprise is unduly deprived of an opportunity to enter competition for a new market or new business model despite using its ingenuity and implementing a process of trial and error, if the competition authority easily evaluates that the relevant market is adversely affected and enforces competition law at a stage where no sufficient verification has been made regarding whether other enterprises have alternative means of competition, then such enforcement may cause an adverse effect in that it diminishes incentives for enterprises to build business models on their own or to inspire technological innovation. Thus, it is not equal-footing to simply indulge enterprises seeking new entry for the purpose of promoting new entry and it is necessary to note that in that case, such enforcement may lead to inefficient protection of enterprises or vested interests or may result in impeding truly active competition in markets. Therefore, even if existing enterprises are required to cooperate through sharing data and the like, the criteria should be clarified further.

This view would be increasingly argued from the viewpoints of maintaining or promoting truly dynamic and active competition.

4. Enforcement of Competition Law Has Issues Such As Limitations in Connection with Other Laws and the Occurrence of Adverse Effects

(1) Necessity to Note that Enforcement of Competition Law Always Goes Hand in Hand with the Risk that it May Be Crude and Hasty Enforcement

In order to appropriately enforce competition law in response to drastic changes in a market environment for the Data and AI Business, it is necessary to avoid a snapshot-like solution that only focuses on a temporary increase in an enterprise's market share. For example, at a Study Group meeting, the following view was repeatedly expressed, "If competition law is enforced based on the evaluation of a competitive situation made only by focusing on a market environment at a certain point in time, the service at issue or the enterprise arguing an issue may spontaneously leave the market for a long period until a final conclusion is reached. In particular, the more drastically the relevant industry changes, the higher the risk of issues being neglected that should be addressed if we are preoccupied with enforcement of competition law only." In particular, since the profitability of a business for data and AI is unstable until it grows to a certain size, it may take time to monetize the business; therefore, it is also necessary to note that strong competitors may emerge in the future even in a market where no strong competitors currently exist. Furthermore, it is necessary to note that even if there is an

enterprise temporarily holding a large market share, this is a reasonable result of competition and may become an incentive for a new challenge and innovation.[31]

In connection with this point, important issues have been raised in the actual practice of enforcing a Japan-specific regulation, "unfair trade practices," under competition law. The regulation of unfair trade practices under the competition law of Japan (i) has been classified into the category of comprehensive regulation that covers various competitive concerns and (ii) has the characteristic that it is enforced only based on the likelihood that an event impeding fair competition may occur. As a result, this regulation can be applied to a broad range of acts in a preventive manner and seems to have the aspect of enabling competition law to be enforced in a prompt and preventive manner encompassing a market environment around the Data and AI Business that is drastically changing. However, it is necessary to note that such a category of regulation enabling a broad range of enforcement in a preventive manner is unusual compared to other countries' competition laws.[32] Although we can find some significance in such a unique category, we should not render all acts that can be deemed a violation illegal under such preventive regulation; instead, we consider that on the premise that there are appropriate policy discussions based on the viewpoints of promoting the Data and AI Business and protecting consumers and users, enforcement of the competition law of Japan must be supported by such discussions.

(2) Necessity to Pay Attention to the Risk that Enforcement of Competition Law Serves as Unnecessary Help

As stated in **3.(2)** above, given that the purpose of competition law is to protect the competition process, attention should be paid to avoid a situation where enforcing competition law against an enterprise's business model serves as unnecessary help for other competing enterprises. While enforcing competition law in individual cases has limitations as stated in **(5)** below, we cannot deny that one case example of enforcement is referred to in other cases and that the "effect" has some repercussions. Therefore, it is necessary to sufficiently pay attention to the risk that enforcement of competition law serves as unnecessary help for other competing enterprises.

(3) Enforcement of Competition Law May Adversely Affect Business Models

As stated in **2.(2)** above, what business model an enterprise will develop relates to the enterprise's sense of values, and the enterprise's freedom to decide should be respected. Nevertheless, if enforcing competition law results in a situation where the relevant enterprise is forced to employ a specific business model, this may lead to a risk of excessive intervention in the enterprise's free business activities. For example, when data is concealed as part of an enterprise's open & close strategy in which the enterprise can decide what data it will use by maintaining them closed and what data it will open to collaborate with other enterprises, if competition law is enforced to compel the concealed data to be shared, this almost equates to a

---

31 Bernard A. Nigro, "'Big Data' and Competition for the Market", December 13, 20 17.

32 Kozo Kawai, "70th anniversary of the enactment of the Antimonopoly Act − evalu ation of 70 years and long-term issues in the future − ," Fair Trading No. 801 (2 017)

situation where the competition authority compels the enterprise to make its business open.

In connection with this point, at a Study Group meeting, the following view was expressed, "For example, the Industry 4.0 project in Germany runs counter to German companies' fundamental spirit and the source of competitiveness because the existence of a large number of independent suppliers is the source of industrial competitiveness in Germany. This project compels German companies to make efforts that erode the basis of their existence to a considerable degree. Thus, such a policy that is largely detached from the actual situation of industries or enterprises may fail in practice."

Furthermore, it is necessary to note that if the Data and AI Business which often employs a business model participating multiple markets is sought to cut the link between these markets, this may result in the quality deterioration of services or impossibility of supply instead of leading to a recovery in competition. For example, if various services constitute one unified business of an enterprise and a division of these services is sought, which will eliminate any network effect, then the enterprise will undergo quality deterioration of each service, and in the worst-case scenario, it may have to give up any of the services. Given such a serious result, we consider that this method should be especially carefully considered.

With a view to avoiding this situation, as stated in **2.(3)** above, it is also necessary to take into account the protection of aggregate incentives for business and investment activities handling various services as one unified business, at the merits examination stage under competition law.

(4) It is Necessary to Balance Protection and Sharing of Data Collected in the Course of the Data and AI Business

When enforcing competition law against a private company's refusal of access to data that is essential to provide specific services, we consider that how the company will manage and release data that it collected or created is an issue that should be primarily governed by rules based on market principles; and we consider that enforcing competition law against an act of concealment of data (countermeasure to an infringement) that is permissible under unfair competition prevention law should be restrained.

Based on the above, when enforcing competition law against a private company's refusal of access to data that is essential to provide specific services (forcing data to be released), it seems to be necessary to carefully consider whether there is such a high necessity of enforcement that the relevant issue cannot be resolved by the above-mentioned rules (whether such anti-competitiveness occurs that can be resolved only by enforcing competition law).

A. Perspectives of Comparison with Intellectual Property Law and Industrial Policies

From the perspectives of a comparison with intellectual property law and industrial policies, given that no legally exclusive right is assumed to be established for data and that data is not legally protected once it is disclosed, we consider that especially careful consideration is necessary when enforcing competition law to impose an obligation on a private company to disclose data that the company

collected by itself making investments and using its ingenuity, or to force the company to disclose the data under the FRAND terms.

For example, at a Study Group meeting, it was pointed out that if the Japanese government is concerned that U.S. platform providers will attain supremacy in data business and Japanese companies may not be able to counter them, and it attempts to introduce a new domestic system to oblige these U.S. platform providers to share data, then it is necessary to consider what development of domestic industries is intended by the imposition of such an obligation and whether any right is granted that balances with such an obligation.

B. Discussions in the U.S.

In the U.S., currently, there is no legislative movement toward ordering protection of data or establishing a right of access to data by law, aside from so-called personal data protection, at the federal or state level. These points are governed by contractual rules.

For example, when considering whether any transactional obligation is found for big data, as a decision made by one of the highest courts in the U.S., there is a decision on refusal of trade for big data rendered by the United States Court of Appeals for the Seventh Circuit in November 2017.[33] According to the decisions, in the U.S., the theory of essential facilities is applicable only in a limited number of exceptional cases and is almost on the has-been list; and whether an access obligation is found based on anti-trust law should be decided based on the rules established in the Trinko case[34] and the Aspen Skiing case,[35] in principle. Based on this view, the Court held that there is no environment where a transactional obligation should be found on an exceptional basis as indicated in the Aspen Skiing case. In this respect, at a Study Group meeting, the following view was expressed, "Although there is still a movement toward establishing an argument that big data constitutes essential facilities, the idea that big data is a scarce resource for business is not applicable to typical platform providers because, except for data held by governmental institutions, data can be easily copied or obtained with the current technological level, and the barrier to enter the data business is becoming low."

Thus, even if there is an important type of data to conduct a certain Data and AI Business, essentially, it is not assumed in the U.S. that an obligation to access such data is found based on the theory of essential facilities.[36]

---

33 Authenticom, Inc. v. CDK Global, LLC et al., No. 3: 2017cv00318 - Document 17 2 (W.D. Wis. 2017).

34 Verizon Communications v. Trinko, 540 U.S. 398 (2004).

35 Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985).

36 For example, the German Federal Cartel Office seemed to point out that since th ere was no general right to access competitors' data bases, there had been no ac tual case where a denial of use was found to be anticompetitive for the reason t hat data constituted "essential facilities." (Bundeskartellamt, "Big Data und Wettb ewerb", Oct. 2017<http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Schriftenreihe_Digitales/Schriftenreihe_Digitales_1.pdf;jsessionid=627ACFC41FAF7231917E156D2022EC64.1_cid371?__blob=publicationFile&v=3>

(5) Limitations of Enforcement in Individual Cases

A. Right to Data Portability in Europe

In general, the right to data portability as introduced in Europe refers to a right to receive the personal data concerning the individual, which he or she has provided to a controller, in a structured, commonly used and machine-readable format and to have the personal data transmitted directly from one controller to another, where technically feasible.

Data portability has significance in that it ensures that individuals will play an active role in the data ecosystem by strengthening individuals' control over their personal data. Furthermore, we cannot deny that it also functions under competition policies to promote conversion among services and enhance the privacy protection level that is necessary in connection with service conversion. However, the scope of data portability does not include information created with an enterprise's efforts. The receiving enterprise cannot designate the format used for data portability, and the receiving enterprise's efforts are required to adapt its system to the data format to be provided.

B. Evaluation of the Pros and Cons of Releasing Data and Introducing Data Portability Requires Public Discussions as Part of a Broader Rule-making Process for Information Law

Based on these discussions in the U.S. and Europe, we consider that the issues of releasing data and ensuring data portability should not be considered in the context of individual enforcement of competition law against a specific enterprise, but that it is appropriate to understand them as issues that should be discussed as part of the rule-making process for information law involving the entire nation.

For example, at a Study Group meeting, the following view was expressed, "The basic value of ensuring that individuals play an active role in the data ecosystem by strengthening individuals' control over their personal data is broadly shared between Japan, the U.S., and Europe; given the above, when introducing data portability in Japan, the system design should be based on this basic value as with Europe." As indicated by this view, since this right relates to a person's basic value, we consider that this issue is not such a kind of issue that would be fully resolved if the authority considers it only in connection with an individual and specific case from the perspective of competition law or competition policies.

(6) Hazardous Nature of Enforcement Lacking Legal Stability

Regarding the personal information protection level in the Data and AI Business, unlike the case where quantitative analysis, e.g., using price is possible, there is relatively large room for the authority's qualitative evaluation.[37]

In this respect, at a Study Group meeting, the following view was expressed, when considering the Data and AI Business from the perspective of competition law,

---

37 However, recently, there have been attempts to quantitatively define markets based on to what extent an increase in advertising will affect users' decisions to switch to other services (Tim Wu, "Blind Spot: The Attention Economy and the Law", Antitrust Law Journal Vol. 82), and it is expected that it will be possible to exclude arbitrariness by using quantitative analysis in the future.

"There is large room for qualitative policies including industrial policies to be taken into account; however, if these policies cannot be deemed reasonable, defining a theoretically-possible market or finding an impediment to the market has little significance." In addition, regarding the elements to be considered from the perspective of industrial policies when enforcing competition law, the following view was also expressed, "It is difficult to say that sufficient transparency has been secured in respect of discussions on ideal approaches to the competition law and competition policies adequate to ensure that enterprises can conduct business in Japan with a sense of protection such that the authority will not discriminate against a Japanese company's problematic act subject to the competition law when compared to a U.S. company's or Chinese company's similar act." The necessity to secure transparency in elements to be considered and decisions for competition law and policies in Japan was emphasized.

(7) Necessity to Evaluate Enterprises' Voluntary Efforts

When enforcing competition law against the Data and AI Business, given that it is especially necessary to respect an enterprise's ingenuity, we consider that it is also necessary to fully consider the measures that the enterprise voluntarily takes as part of its compliance efforts and which are inextricably associated with its ingenuity in the normal course of business.[38] As an extension of this perspective, if enforcing competition law, we also consider that use of a settlement system should be considered as a prompt and flexible solution to be voluntarily offered by an enterprise.

Part 6 Conclusion

As stated above, the Study Group discussed various issues that are necessary to envisage laws and policies leading to the invigoration of the Data and AI Business in Japan.

Based on these discussions, the Study Group has finalized three proposals: (i) first, it is important to organize an environment which enables parties to voluntarily transfer or share data for utilization of the data based on market principles and thereby develop an environment that facilitate construction of business models and promotion of innovation; (ii) while maintaining laws and policies that balance the protection of privacy and the promotion of free transfer or utilization of data, it is necessary to make efforts to promote trade law and policies to restrain or counter data protectionism; and (iii) when considering application of competition law and policies to the Data and AI Business, it is important to prevent sound business activities or activities having a justifiable reason from shrinking and not to create any factors that allow other enterprises to neglect to verify alternative means of competition by understanding that their enforcement has limitations or adverse effects thereon.

Lastly, as a Study Group of NIALS, we hope that the proposals presented in this report will contribute to discussions on laws and policies leading to the invigoration of business utilizing data and AI in Japan.

End

---

38 We consider that Google Takeout and the like are good examples of companies t hat voluntarily employ data portability, and Google AI principles<https://ai.google/principles/> is also a good example of companies that voluntarily organize and dispatch fundamental principles for the "AI" applications.