

Study Group on  
Consumers' Response to Digitalization  
AI Working Group  
Report

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AI Working Group

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## **I. Introduction**

With the advent of AI-based services one after another, there is growing interest in consumer issues related to AI. Among the problems consumers face using AI, in the worst case, it is assumed that devices equipped with AI will cause damage to people and property due to AI malfunctions. Including such problems, while it is natural that businesses who provide devices and services using AI are required to take responsible measures in consideration of consumer interests, it is also considered beneficial for consumers to acquire the minimum necessary knowledge to use AI safely.

At that time, it is not enough to show consumers that there is a certain limit to AI as a risk or to call attention to such risk. The reason is that consumers may have concerns about using AI and may not choose to use AI. If the utilization of AI, which is supposed to enrich society, does not proceed due to consumer anxiety, it is against consumer interests. It is not desirable for consumers to end up with results that do not give them the benefits they should have. Therefore, it is necessary to consider how to deal with this problem from a consumer policy perspective.

The Study Group on Consumers' Response to Digitalization AI Working Group (hereinafter referred to as "the Working Group") compiled this report, by examination of new benefits in consumer life by smart and appropriate AI use for an affluent life, what type of information to be disclosed by businesses, what kind of knowledge is expected to be acquired by consumers, and from the perspective of encouraging information exchange, what are required to the government, businesses, and consumers.

The AI Utilization Handbook - Using AI Wisely (hereinafter referred to as "the Handbook") was created based on discussions in the Working Group to make it easy for consumers to understand the AI mechanism characteristics and limitations. In the future, it is expected that consumers use AI wisely by using the Handbook as a reference.

## **II. The AI Working Group Objectives**

While the rapid development of digital technology in recent years has improved the convenience and efficiency of daily activities in consumer life, new consumer problems have also become apparent. There is a need to respond to the new challenges posed to consumers by digital technology use.

In response to this, the Consumer Affairs Agency has been holding the Study Group on Consumers' Response to Digitalization since December 2019 (hereinafter referred to as "the Study Group"). However, in the field of AI, particularly the reality of the situation, such as the relationship between consumers and AI, has not yet been fully understood, and consumers have not fully understood AI. For that reason, a working group was established under the Study Group to examine the relationship between consumers and AI in daily life, the convenience and risks of AI close to consumers, and other necessary measures to use AI effectively and safely.

### III. Trends Involving AI

#### 1. Policy Trends Involving AI

Recent advances in research and development and utilization relating to AI have led to discussions in the government on how society and AI should face each other.

The “Social Principles of Human-Centric AI” (decided by the Integrated Innovation Strategy Promotion Council on March 29, 2019), published in March 2019, establish principles that society should adhere to and stated that developers and business operators are expected to set their principles of the AI development and utilization.

The "AI Utilization Guidelines," which was examined by the "Conference toward AI Network Society" of the Ministry of Internal Affairs and Communications and published in August 2019, were formulated based on the importance of fostering trust in AI to promote the utilization and implementation of AI. It summarizes ten principles that are expected to be noted when utilizing AI, and while AI utilization brings various benefits, it also outlines how to control the risks behind the benefits.

The Guidelines were formulated as explanatory notes for each business operator to set principles, as described in the Social Principles of Human-Centric AI. Although it was designed for business operators, it contains messages as reference for consumer users<sup>1</sup>.

**Example: Partial excerpt of descriptions on consumer users relating to the principles of proper utilization**

[A. Utilization in the proper scope and manner]

Consumer users are recommended to use AI in a proper range and method, with consideration for information and explanations provided from developers and AI service provides, along with the social context.

[B. Human intervention]

If it is considered appropriate for consumer users to give final approval to AI’s decision, they are recommended to acquire the necessary skills and knowledge to make appropriate decisions.

They are recommended to respond appropriately based on the measures organized to ensure the effectiveness of humans’ decision if developers and AI service provides have the measures.

(Hereinafter omitted)

Although some of these documents describe precautions when utilizing AI, not many are organized as information tied to specific actions consumers take.

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<sup>1</sup>The term *consumer user* refers to a person who uses AI systems or services for purposes other than for business (work), whether an individual or corporation. It is distinguished from consumers and is referred to as a *consumer user*.

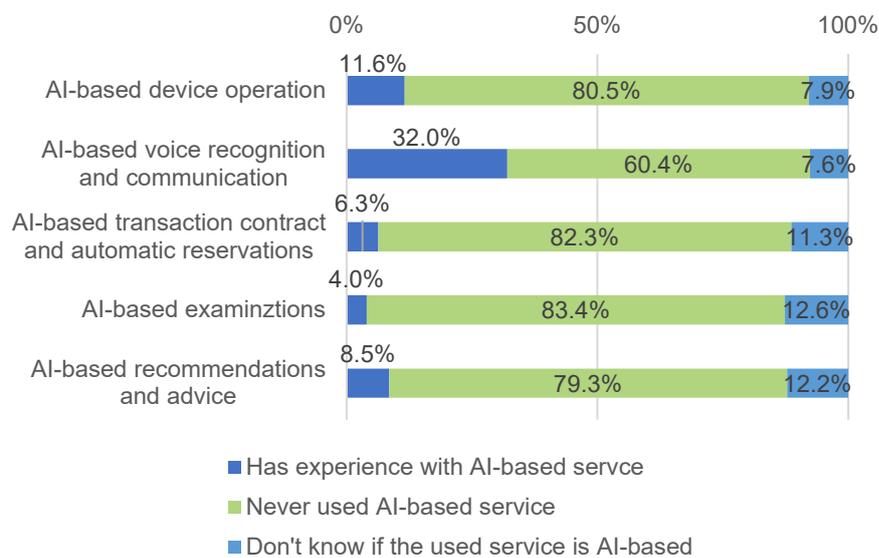
## 2. AI and Consumer Relationships (Analysis by Consumer Survey)

Considering offering consumers specific and practical information, the Working Group surveyed on current consumer awareness of AI.

### (1) Status of current consumer awareness of AI

#### ● Status of AI use

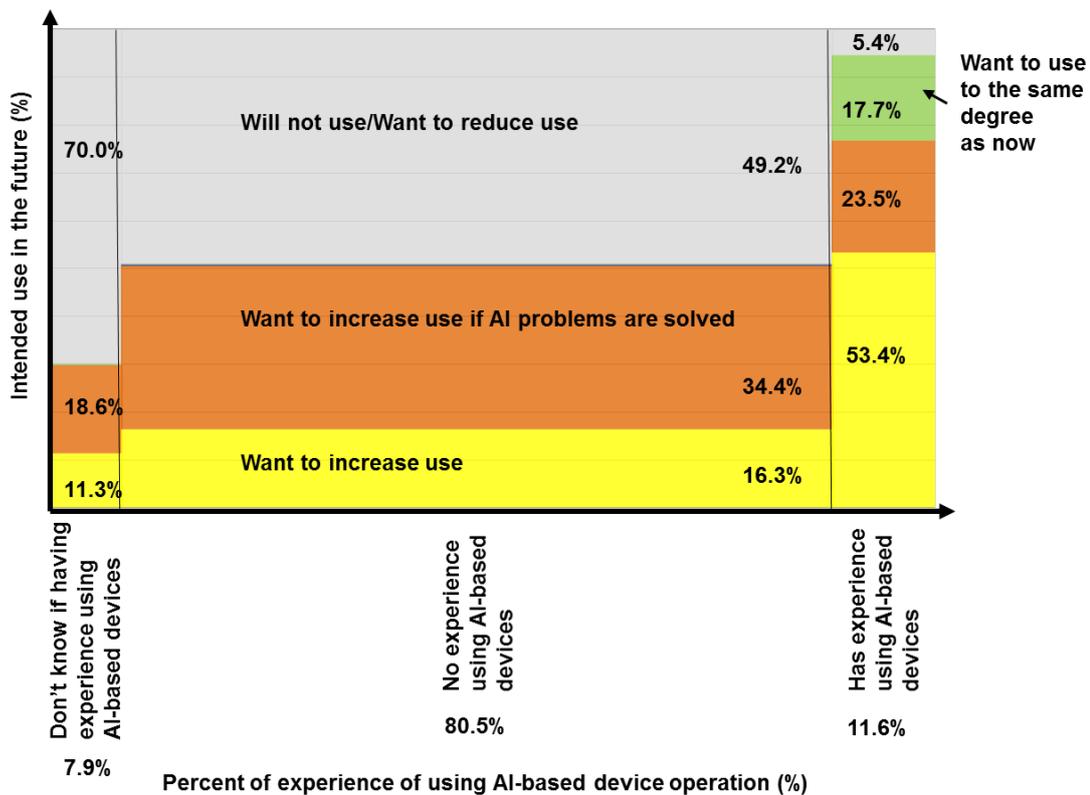
Currently, users of AI-based products and services account for more than 30% in voice recognition and communication, more than 10% in device operation by AI, and less than 10% in AI-based transaction contracts, examinations, and recommendations, respectively.



(Source) Consumer Survey (Experience Using AI-based Services)

#### ● Possibility of bi-polarization between AI users and non-users

While many consumers with experience using AI intend to increase their use of AI-based services, many consumers with no experience using AI do not intend to use AI in the future. Without special incentives for consumers who have no experience in using AI, there is a possibility of bi-polarization between AI users and non-users.



(Source) Consumer Survey

**(Experience Using AI-based Device Operations and Intended Use in the Future)**

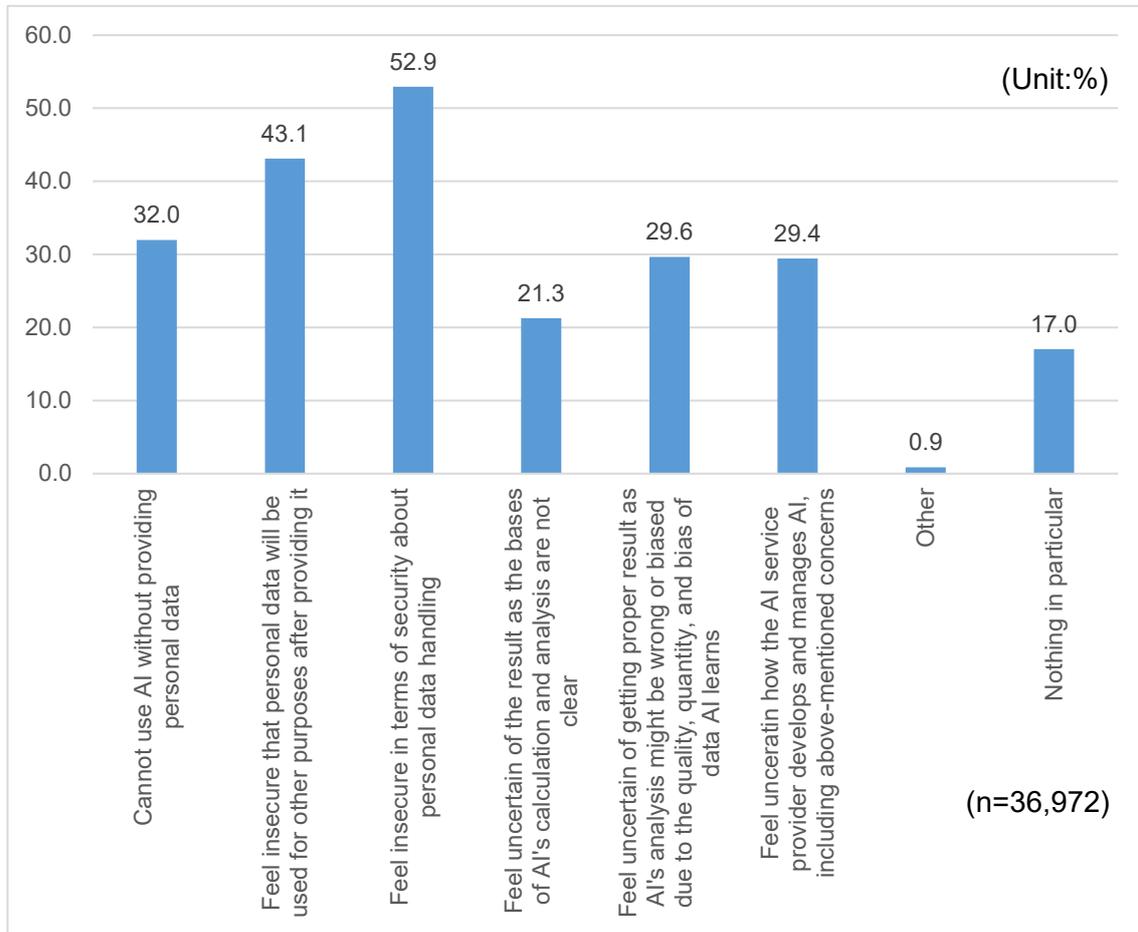
● **Requests for easy-to-understand information for consumers**

As a result of the consumer survey, many comments were received such as “I want someone to explain it in an easy-to-understand manner to people who are not familiar with the technology,” “I want someone to guide the elderly in easy-to-understand Japanese,” “I don't understand the explanations of difficult Katakana characters,” “I want someone to show me the benefits and disadvantages of AI,” “I want someone to explain the service contents and cautions in easy-to-understand words,” and “the elderly will be left behind.” It is assumed many consumers who are interested in AI but have not gone so far as to use it because they cannot understand it. It is thought that explanations and alerts that are easy to understand even for those unfamiliar with technology are required.

**(2) AI issues envisioned by consumers**

● **Problems in using AI and future intended use**

When using AI-use products and services, many people feel that there are challenges and obstacles to “security aspects (about 50%)” and “personal data will be used beyond the stated purpose (about 40%)” rather than “providing personal data” itself.



**(Source) Consumer Survey (Issues in Using AI)**

With regard to the intention to use AI services in the future, for example, in the case of device operation using AI, consumers who responded that they “want to increase their use if the AI problems listed in the above survey are resolved” accounted for more than 20% for consumers who have experience using AI-based device and for more than 30% for consumers who have no experience.

While suggesting the need for businesses to take measures for security and unintended use of data, there is a need to explain these as points that consumers want to know.

#### **IV. Discussion in the Working Group**

Based on the above, the Working Group decided to discuss the following issues and consider the way of awareness-raising materials that could be linked to specific actions for consumers to use AI effectively and safely.

## 1. The Benefits and Challenges of AI in Consumer Life

### (1) Benefits and Risks of AI in Consumer Life

While AI brings many benefits, it can also introduce new risks.

Therefore, the convenience and risks of AI in consumer life were examined from the perspective of how "assumed risks" can be suppressed for consumers to enjoy the diverse comforts of AI. The outline is as shown in Table 1.

**Table 1 Assumed Benefits and Risks of AI in Consumer Life**

Assumed Utilization	Assumed Benefits	Assumed Risks
Operation of air conditioning and automatic adjustment of temperature and humidity according to the presence/absence of resident and location in the room	<ul style="list-style-type: none"> <li>• Offer comfortable living space</li> <li>• Reduce power consumption and implements peak cuts and peak shifts</li> </ul>	<ul style="list-style-type: none"> <li>• Information about the resident's presence/absence, lifestyle practices might be revealed, and privacy could be violated. [Privacy]</li> </ul>
Watch over support for children and the elderly	<ul style="list-style-type: none"> <li>• Allow guardians to go out with a sense of security</li> <li>• Make it easier to work and participate community activities</li> </ul>	<ul style="list-style-type: none"> <li>• Children might be injured, or furniture might be broken due to unexpected operation of the robot. [Safety]</li> </ul>
News and TV program recommendation by butler robots	<ul style="list-style-type: none"> <li>• Make news searching easier in busy time</li> <li>• Enable TV program watching resident would want to see</li> </ul>	<ul style="list-style-type: none"> <li>• Resident interests might be misjudged and necessary information or information of high interest might not be provided. [Correctness, Fairness, Security]</li> </ul>
Operation of household appliances and shopping using smart speakers	<ul style="list-style-type: none"> <li>• Possibly operate household appliances and conduct shopping simply by talking, without operating the household appliance or conducting an Internet search by resident</li> </ul>	<ul style="list-style-type: none"> <li>• There is a risk of mis-operation of appliances due to speech misrecognition. [Safety]</li> <li>• Daily conversations could be collected due to misrecognition of wake words. [Privacy]</li> <li>• There is a risk of unintended product purchase due to speech misrecognition. [Misrecognition, Coordination]</li> </ul>
Automatic adjustment of air conditioning and automatic housework according to predicted return time of resident	<ul style="list-style-type: none"> <li>• Offer resident more comfortable living space</li> <li>• Make housework less burdensome</li> </ul>	<ul style="list-style-type: none"> <li>• There is a risk of collision and damage of robots due to lack of coordination among them, such as cooking robots, cleaning robots, and pet robots. [Coordination, Safety]</li> <li>• Relying too much on AI would make living difficult in case of disaster when residents cannot use AI for housework. [Division of labor, Cooperation]</li> </ul>
Dietary management and suggestions with health support apps	<ul style="list-style-type: none"> <li>• Get advice and suggestions for meals to maintain good health without doing detailed calorie calculations by oneself</li> </ul>	<ul style="list-style-type: none"> <li>• Advice and dietary suggestions might not necessarily take into account all personal physical constitutions, allergies, and unique health conditions, and might result in inappropriate suggestions. [Customization Limitations]</li> </ul>

AI loan examination	When borrowing, possibly undergoing a more multi-faceted examination using AI	<ul style="list-style-type: none"> <li>• While consumers who traditionally had difficulty borrowing could borrow, there would be a risk of falling into excessive debt. [Judgment by Consumer]</li> <li>• If the basis of the examination is unknown, consumers would not know how to improve their scores and pass the examination. [Transparency]</li> </ul>
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**(2) Factors that create assumed risks**

Next, when examining why the factors that cause such assumed risks occur, the following points were made, including the characteristics and limitations of AI itself and the issues on the consumers' side.

**● Issues related to data acquisition**

It is necessary to understand that AI needs data and that data collection is important for AI development. At the same time, it is also vital to convey risks such as information leakage.

Particularly in recent years, the number of linked services using SNS accounts has increased. While using the same ID increases the convenience of making payments, it is necessary to recognize data flows to service partners. Concerning collected data, the usage method may vary when cooperating with other services within the same business operators or services of other business operators. Because the scope of data utilization is described in the privacy policy, it is important to read and confirm the guidelines properly.

Furthermore, it is necessary to recognize personal information may be leaked unexpectedly from data collection points such as sensors and interfaces, to make a decision and act on whether to turn the data collection function on or off and to firmly convey that device settings can be changed so that data is not collected.

Simultaneously, it is also necessary to explain that data is the basis of AI-based services, and data collection is indispensable for the development of AI. The words to convey this point are essential, and care must be taken not to create an image that the data collection itself is harmful to consumer interests.

**● Issues relating to AI accuracy and issues caused by a divergence between AI results and consumer intentions**

As a trend relating to AI issues, there is a problem in (1) AI accuracy issues and (2) AI analysis results differ from consumer expectations even though results are produced based on AI's objective.

The AI accuracy issues (1) are cases where AI makes mistakes and produces unintended results causing some disadvantages to consumers. Issues where AI analysis results differ from consumer expectations (2) include, for example, in diet support apps, where AI programs provided advice to help the consumer develop a healthy shape, whereas the consumer expected a slimmer figure.

For the former issue, consumers need to be aware that online information tends to be biased toward contents close to their tastes, such as targeted advertising. Furthermore, AI improves accuracy by learning data such as consumer usage, so it is also necessary to have a perspective that the consumer's data helps nurture AI.

Concerning the latter issue, the problem can be avoided by letting the consumer know AI's objective and operation, and it is necessary to distinguish it from accuracy issues.

It is desirable for consumers to collect information about AI algorithms, how to use them, and what outputs will emerge as a result<sup>2</sup>.

## **2. Challenges regarding AI and Consumer Legal Issues**

Regarding the risks assumed when utilizing AI, the legal aspects were also examined with hypothetical cases. The following points were made from the perspective of safety, self-determination, and privacy.

### **(1) AI and Consumer Safety Issues**

In a case where household goods were damaged by a product equipped with AI, it may be possible to claim damages from the seller or manufacturer of the product under the Product Liability Act (Act No. 85 of 1994) or the Civil Code (Act No. 89 of 1896). However, in the former case, the argument is the "safety which a product should normally have," and in the latter case, what is a case of default or tort of the seller or manufacturer of the product.

This is a legal system on ex-post facto relief if consumer safety is compromised and damage has occurred. However, to prevent damage and to use the product safely, it is necessary for consumers, when using each product, to understand by the instruction manual, how much monitoring of the product is required, risks of product behavior beyond the consumers' recognition, product function, how to use, and operating conditions.

### **(2) AI and Consumer Self-determination Issues**

In cases when a consumer concludes an agreement of a product based on the proposal from AI, while the product does not meet the consumer's needs, or concludes an agreement based on a robotic advisor's proposal without understanding the risks of individual product,

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<sup>2</sup>In order to do so, it is desirable that business operators disclose their method of information collection to a certain degree.

there is an aspect that AI recommendations intervene in consumer decision-making. Suppose a consumer concludes a contract to purchase an unintended product. In that case, the consumer may rescind the contract, based on Article 4 of the Consumer Contract Act (Law No. 61 of 2000), or the mistake cancellation can be asserted in the Civil Code (Article 95). Needless to say, in order for these claims to be admissible, the respective requirements must be met.

Furthermore, to prevent risks to consumers from becoming a reality, it is necessary to recognize that there is a cognitive tendency for humans to overtrust automated judgments made by computers (so-called *automation bias*), and that product proposals by AI cannot be expected to provide as much information and explanations as face-to-face sales with humans, so it is necessary for consumers to collect information under their initiative.

### **(3) AI and Consumer Privacy Issues**

In a case where a smart speaker acquired a conversation and transmitted it to a third party, it is difficult to suspend the use of personal information based on the Act on the Protection of Personal Information (Act No. 57 of 2003) or claim damages based on tort under the Civil Code, unless the personal information is being used beyond the scope necessary to achieve the purpose of the use or it has been obtained illegally.

From this perspective, consumers need to deepen their understanding of security measures for data collection and use by AI-based products.

## **3. What Consumers Need to Learn**

After sorting out the assumed risks as described above and the points to be noted by consumers, the Working Group discussed how effectively convey these messages and to what extent.

Consumers do not necessarily need to acquire technical knowledge about AI, and it is also possible that what AI means now may differ from what it may mean in the future. Therefore, rather than explaining the definition of AI in detail, consumers must acquire knowledge of what AI can and cannot do.

However, since some consumers vaguely feel that they are afraid of AI, a balanced explanation of convenience and risk is required so as not to cause excessive concern to the risk explanation.

Furthermore, along with the emergence of products and services that utilize AI, it is essential to continuously raise consumer awareness while revising the knowledge that they should acquire.

#### 4. Drafting the Handbook

Based on the above examination, the drafting of the Handbook has started.

The Handbook consists of two parts: the Basic, which explains the structure, characteristics, limitations of AI itself, service categories that utilize AI, and the Checkpoint by products and services used, with actual use in mind, such as AI-based product and service structure, precautions, contacts in case of trouble, points for data management. Also, based on the fact that consumers who know little about AI and consumers who want to know AI well have different information needs, “AI Utilization Handbook – Using AI Wisely (pamphlet version) has also been created.

#### 5. Raising awareness using the Handbook

In parallel with examining the contents to be described in the Handbook, the Working Group also discussed how to raise awareness using the Handbook effectively.

##### (1) Organizing approaches that envision the Handbook reader

When utilizing the Handbook, it is necessary to sort out readers to be enlightened by the Handbook.

At the Study Group, it was pointed out that in addition to middle-aged and elderly consumers (especially the elderly called active seniors, who are enthusiastic about hobbies, various activities, and consumption), the Handbook should be promoted to young consumers who will be the future consumers of AI-based products and services. It was also noted, in addition to direct dissemination to consumers, dissemination to consumer affairs consultants and other staff who supports consumers is necessary to promote proper understanding about AI through consumer affairs consultation and how to use AI wisely.

The following is a summary of the Study Group’s approaches as appropriate for each of these readers.

##### ● Dissemination methods to consumers

Dissemination methods to consumers are shown in Table 2.

**Table 2 Dissemination Methods to Consumers**

Target	Dissemination Method
Young Consumers	<ul style="list-style-type: none"><li>• Post the Handbook on a website</li><li>• Disseminate information using SNS</li><li>• Distribute QR code at universities such as admission ceremonies, orientations, and at Co-ops</li><li>• Consider content such as quizzes and videos, with layout changes that fit to smartphones, so that young people can learn with fun</li></ul>

Middle-aged and Elderly Consumers	<ul style="list-style-type: none"> <li>• Distribute the Handbook (pamphlet version) via local governments (local government counters, libraries)</li> <li>• Conduct public courses</li> <li>• Offer public courses at universities (education for the general public)</li> <li>• Post to each household (some efforts need to be taken so that it will not end in a one-off action and it will be read properly)</li> </ul>
Consumers interested in AI-used products and services	<ul style="list-style-type: none"> <li>• Disseminate via businesses and industry organizations (For businesses and industry organizations, it is beneficial for consumers to understand AI properly.)</li> <li>• Advertise online (advertisement to consumers who conduct keyword searches and see AI-related products)</li> </ul>

● **Dissemination method to staff who support consumers**

By holding information sessions for consumer affairs consultants and other staff who support consumers, it is expected that consultants will have lectures for consumers in each region. In addition to consultants, information sessions can also be held for relevant parties in contact with consumers, such as school teachers and watchdog supporters.

**(2) Update of the Handbook**

In the future, as more consumers face diversifying AI, and as AI technology advances and services become ever more complex and complicated, the risks in using AI services will also change.

Therefore, it is desirable to continuously update the Handbook by the Working Group while creating tools for each generation as necessary.

**(3) Others**

The Consumer Affairs Agency publishes the Handbook, and it is expected that the Consumer Affairs Agency will proactively publicize it while taking into account the Working Group discussions. If it is desired to use the Handbook as a voluntary initiative at the local governments, or specialized organizations related to consumer issues, educational institutions, businesses or industry organizations, active collaboration and cooperation are encouraged.

**V. Summary**

To enjoy the diverse benefits that AI offers and realize affluent consumer life, it is vital for consumers who use AI-based products and services to use AI wisely after they have adequately understood the characteristics of AI and the benefits and risks of using AI in daily life. From this perspective, the Handbook was created to support consumers in taking their first steps towards AI as society embraces digitalization, focusing on what information would make that possible and in what form it would be most effective in conveying that information.

In the future, a wide range of people, including consumers, consumer affairs consultants, consumer education leaders, and businesses that provide AI-based products and services, will be able to use the Handbook widely. It is hoped that the Handbook will help deepen the discussion of the relationship between consumers and AI in the future.

To further advance AI utilization, the following points are raised for relevant parties to work on so that consumers can use AI effectively, safely and securely. These are essential viewpoints when considering how consumers will face AI in the future society, and it is desirable to pay attention to them upon implementing initiatives.

- Improving consumer literacy and the social responsibility of businesses<sup>3</sup> are considered two sides of the same coin, and efforts from both sides are necessary. In parallel with raising consumer awareness about AI, businesses should clarify data acquisition from consumers and what information is being utilized.
- Since consumers are highly interested in controlling their data, it is desirable to take initiatives that provide consumers with satisfaction and peace of mind, such as a mechanism for erasing data that they have entered in the past and an explanation of the basis for AI decisions<sup>4</sup>.
- AI products and services involve various people such as developers, manufacturers, and service providers, and it is difficult for consumers to understand to whom and what to report when a problem arises. Furthermore, the terms and conditions and operating instructions are often complex and diverse, making it difficult for consumers to understand. It is desirable to take measures to eliminate difficulty from the consumer side.

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<sup>3</sup>As described in III Section 1, the Conference toward AI Network Society published the "AI Utilization Guidelines", as practical reference for businesses.

<sup>4</sup>Related to this point, it was pointed out that it is also conceivable to utilize a trust mechanism, such as entrusting management to a trusted party after consumers communicate certain conditions. Trust is said to have the effect of reducing complexity, including for the capabilities of businesses and people, and for the mechanism (certification). However, when utilizing this mechanism, it is necessary that consumers can study it by themselves whenever they desire, and care must be taken not to design the mechanism that forces consumers to waive their right to make their own judgments.