Roundtable with Dr. Yutaka Matsuo, Akiko Murakami, Chizuru Suga & Masakazu Toyoda
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Is AI a Friend or Foe of Humans?

By *Japan SPOTLIGHT*

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Dr. Yutaka Matsuo   *Akiko Murakami*   *Chizuru Suga*   *Masakazu Toyoda*

Introduction

Toyoda: As a specific example of generative AI, the chatbot ChatGPT has been publicly acknowledged and is said to be a great invention comparable to that of the internal combustion engine or the Internet due to its great convenience, and it is said that the fourth AI boom has been arriving. While it can not only answer various questions, but also write scenarios and easily create composite films, some say that this could bring about a crisis for human civilization and that it is a devilish invention comparable to a "nuclear bomb". Others say that it will take away people's jobs, provide false information, create confusion at elections, and possibly even cause wars. New technologies have advantages and disadvantages, and I think there is a loud call for certain regulations to strike a balance between the two.

So what kind of regulations are appropriate? Although the invention of the automobile has greatly increased convenience as a means of transportation, it can also cause traffic accidents and take human lives. No one doubts the need for traffic regulations. Over-regulation hinders the further development of technology, while under-regulation leads to chaos. We understand that the "Hiroshima AI Process", which Japan played a key role in formulating, aims to

achieve "safe, secure, and reliable AI". Will Japanese companies remain users or contribute as developers in the AI boom? So far, I feel that the contribution of Japanese companies in the post-Internet era is unfortunately limited. Why is that so? Large companies are bound by past successes and seem timid about the risk of change.

On the other hand, some say that the reason why Japan has lacked an environment conducive to nurturing startups is because of the limited mobility of labor. It is said that talented people tend to fail to utilize their competency fully in large companies where the lifetime employment system and seniority system remain dominant. The Japanese government is also beginning to focus on supporting startup companies. Will Japanese companies be able to contribute to the development of AI as developers in the AI boom?

International collaboration on AI development and utilization is also said to be making progress, and a US-Japan joint research framework on AI development was announced during Japanese Prime Minister Fumio Kishida's visit to the United States in April 2024.

The opportunities and challenges posed by the AI boom for Japan are many, and today we have gathered three experts to discuss these issues. Joining us will be Dr. Yutaka Matsuo, professor at the School

of Engineering, the University of Tokyo, a developer of AI and chairman of the government of Japan's AI Strategy Council, which compiled the Hiroshima AI Process; Ms. Akiko Murakami who, while being a proponent of the use of AI as chief digital officer of Sompo Japan Insurance, Inc., a large non-life Japanese insurance company, has also been looking at the safety side of AI as the executive director of the Japan AI Safety Institute (AISI) since February 2024; and Ms. Chizuru Suga, director of the Digital Economy Division of the Commerce and Information Policy Bureau at the Ministry of Economy, Trade and Industry (METI), who is in charge of policy. So let's begin our discussion.

Benefits of AI

Toyoda: First, the merits of AI. I would like to hear from each of the three experts about the "technological singularity" at which AI surpasses human intelligence, including what this means for humanity and for Japan in particular. I would like to start with Dr. Matsuo, who is an educator and developer.

Matsuo: I do not think it is necessarily a good idea to start from technological singularity, as it would be somewhat divergent. First of all, there are many areas where the current generative AI technology can be used industrially and where industrial productivity can be improved, so I think it is important to make sure that in such areas the use of AI is advanced and AI fully utilized. There is no doubt that the technology will spread throughout society in the span of five, 10 or 20 years, and I believe there will be several more major breakthroughs in the level of the technology.

Murakami: From the corporate side, the technology is advancing very quickly, and there is a risk of a technological singularity in the future, but at this point I believe that AI has more advantages for companies than disadvantages. In particular, it is certain that the labor force will decrease in the future, and in order to compensate for this shortage I think it will be necessary to supplement the workforce in a technological way. At that time, it will no longer be possible to cover only simple tasks by mechanically delegating them, as has been the case up to now. I think it is very important to cover labor other than simple tasks with advanced AI technology.

On the other hand, AI technology nowadays seems on the surface to be usable by everyone, but there is still a bit of a gap in order to put it into practice, and I think there is a big division between companies that can do it and those that cannot. This is where the difference in competitiveness comes into play, and I think it poses a threat to the industry.

Suga: I think the best way to understand AI is that a new engine has been developed that will support what we want to do. I have heard that when printing technology first appeared in ancient society, some experts of the time expressed concern that the sudden introduction of such technology into the world of oral tradition would corrupt human beings and that printing technology would surpass human memory. In reality, humans have not become creatures that do not memorize, and the technology of printing has been of great use to human society, including expanding human capabilities and preserving unmemorable amounts of data in various forms for the future.

When new and disruptive innovations appear in society, people have all sorts of imaginative fears and grand dreams. However, the important thing is how to incorporate them into business as usual. What is important is what strategies will be adopted, both for the company and for the country, based on the assumption that the competing companies and countries will also be trying desperately to master the technology.

Disadvantages of AI

Toyoda: I would like to ask you to talk about the disadvantages of AI. It may be too early to discuss demerits at this stage, but I would like to hear about them from Ms. Murakami, who is in charge of both promotion and safety assurance.

Murakami: I think this is true for all technologies, not just AI. I could list as many bad points as I want to. With AI, for example, it is often said that there is a risk that news and news images produced by a generative AI may induce untruths, or that the company cannot fully control the predictions of the output produced by generative AI, so it may lie and be subject to corporate liability, I suspect. Also, the question arises who would be responsible for an accident that could result in loss of human life, such as with automated driving. I think the list of risks is really endless.

However, there are significant advantages in complementing labor shortages or expanding human activities, so not using AI may in itself be a risk for both companies and individuals' economic activities. I believe that not using AI because you are afraid of the disadvantages while others are using it is in itself a risk of falling behind the competition.

Humans have the greatest fear of what they do not understand, and they tend to estimate the risk as being greater than it really is. Therefore, I think it is important to organize where risks are manifested and what needs to be addressed, and to create an environment in which this information can be understood by people who are not cutting-edge engineers or researchers.

Toyoda: Some have voiced serious concerns from the perspective of employment, social stability, or security. As someone in charge of policy, I would like to ask Ms. Suga to tell us about this. And after that Dr. Matsuo, as a developer and an educator.

Suga: Since everyone is currently experimenting with generative AI globally at the same time, it is very important to learn from each other what kinds of risks others have identified and faced, in addition to the risks that can be recognized by using systems on one's own. We share risk information with various companies in Japan and also globally. In other words, I believe that risk recognition and handling should be addressed in a coordinated manner as much as possible, both among companies and among nations. That is why, as a country, we are taking the initiative and making efforts to create a platform for companies to share risk information, or to issue guidelines for sharing risk information and coping methods.

Matsuo: I think there are various forms of risk that need to be addressed. From a technical point of view, for example, we need to make it clearer what kind of data we are learning from, and there are many technical issues such as how to control and put in a guardrail system to prevent inappropriate output that could lead to danger or discrimination, and so on. I think we need to conduct research and development on such issues.

Appropriate Regulation & Governance

Toyoda: I think this is exactly the kind of research that needs to be done, but then I would like to ask what kind of regulation is good and how should it be governed? I think the government's position is to promote AI from the perspective of maximizing benefits and minimizing risks, but what is generally said is that Japan is relatively reluctant to regulate and is steering clear of excessive regulation. I would like to hear the government's position from Ms. Suga, who is in charge of policy.

Recently, newspapers have reported that the European Union has introduced a bill to comprehensively regulate AI. On the other hand, the Japanese government has compiled the Hiroshima AI Process. I would like to ask you to introduce the contents of each of them and talk about how the Japanese government thinks about governance.

Suga: Regarding governance, Japan was chairing the G7 Summit in 2023 when generative AI suddenly became a hot topic, and Prime Minister Kishida proposed the Hiroshima AI Process as his initiative. This has enabled Japan to acquire an overview of various information on each nation's trials and errors in regulations. This was thanks to the accumulation of contributions made by the Ministry of Internal Affairs and Communications (MIC) and others to global discussions on AI to date, which helped Japan gain the trust of other countries in presiding over sensitive discussions as the chairing country.

While each country has its own political agenda, it is significant that while reaching a consensus on the fundamental scheme of AI governance to be shared by the G7 in dealing with various arguments, the G7, which is closest to the developers of AI and the largest user of AI, agreed on a direction for using AI with the same sense of values.

In parallel with the Hiroshima AI Process, we also issued AI business operator guidelines in Japan. These are a single set of guidelines that integrate and substantially update those which had been issued by the MIC and the Ministry of Economy, Trade and Industry (METI) from different perspectives on AI, in response to the emergence of a new and powerful AI called generative AI. Considering the discussions in the Hiroshima AI Process, we have created a large network of experts from industry and academia in Japan, and have had numerous dialogues with them, taking care to show the most advanced risk recognition and the most sophisticated ways to deal with the risks.

In preparing these guidelines, more than 100 experts with knowledge of generative AI were invited to join the same mailing list, and a number of discussions among those experts have been held on the basis of the shared information with the joint secretariat of the MIC and METI. The AI Business Operator Guidelines were first tabled for discussion at the AI Strategy Council, chaired by Dr. Matsuo, at the end of 2023, and a finalized version was released in April 2024, taking into account further public comments.

For a country where there are not so many companies on the cutting edge of development, I think we have done well by supplementing the amount of information we have input.

Toyoda: As the chairman of the Strategy Council, Dr. Matsuo, looking at the two positions of Japan and the EU, how do you see the two compared from a developer's point of view?

Matsuo: In general, I think Japan's response to AI is very impressive. The EU has taken a strong regulatory position, and with both the US and the United Kingdom having different agendas, I think Japan is in a very good position to make its presence felt. With the EU taking a strong regulatory position and the US focusing on innovation, I think Japan and the UK are striking a balance. Also, while each country has a strong political appeal aspect to its AI policy, we have to think about how to really make it work for the economy. In this sense, I think Japan is doing very well now.

Toyoda: I would like to ask Ms. Murakami to tell us what the appropriate regulations should be from the standpoint of a company and from the standpoint of a person whose job is to ensure safety. You mentioned that Japan is taking a position between the US and the EU.

Murakami: First, speaking from a corporate perspective, while not using AI is becoming a risk, I believe that Japanese companies are struggling with how to use AI for economic development, as not all companies can afford to have AI engineers.

A situation in which people are allowed to do things completely freely may, on the contrary, encourage fear. Therefore, if there are some guidelines, companies can use AI with peace of mind, because it will indicate that it is not safe to go beyond a certain point. This can be compared to the installation of guardrails.

I think it is advantageous for companies promoting AI to be able to look at their risks not only from their own perspective, but also from a larger global perspective. AI has no borders. Therefore, both user companies and companies that provide technology may have to spend time researching regulations overseas while Japanese companies should also expand globally. It would be easier for companies to do business by centralizing that research rather than having individual companies do it.

Speaking as the executive director of AISI, I too believe that Japan is in a very good position, as you both have mentioned. We will not move to major regulations that would stop innovation while fulfilling guardrails for companies to utilize. In my personal opinion, there is a time gap between when a law is issued and when it is enforced, so if regulations are too inflexible, it will be very difficult to catch up with modern technology. I think the ideal situation is not a law, but rather guidelines showing that the government thinks this way at this point in time, and which are then updated it in a timely manner as technology changes. Then both business and academia can provide input for the government on the current situation, so that we can all evolve together.

AISI is working with national ministries and agencies to unify the guidelines, and we are also planning to have many companies that promote innovation participate in the project, so we would like to include input from these companies. In addition to the AISI in the UK and the US, we will also collaborate with organizations in other countries to provide information equivalent to a guardrail, so that overseas developments can be fed back to those businesses that will develop the Japanese economy.

Competitiveness of Japanese Companies

Toyoda: I think the Japanese ideas that you have mentioned will probably be very helpful to many countries. Next, I would like to ask you about the competitiveness of Japanese companies. It is often said that Japan is behind in the development of information services. I would like to ask Dr. Matsuo, who has been leading the way in terms of AI development and use in Japan, what we should think about the limitations of Japanese companies' activities from the first to the third AI boom to date. Why are they and how we can expect them to be active in the fourth boom this time around?

Matsuo: The premise is that Japan is completely behind the rest of the world in the digital field. Most of the products and services we use are made overseas: Zoom is a US startup, Word and PowerPoint are from Microsoft, and Mac is from Apple, etc. AI is a new digital technology, so we are starting from a place where overseas companies are strong and Japan is not in a position to compete. We need to recognize this starting point.

In this context, I believe we are fighting the good fight when it comes to generative AI. Appropriate measures are being taken, and while the gap has not narrowed, we are not far behind, and the use of generative AI is progressing in Japan. In terms of development, even though the computational resources are not as strong as those of other companies, a large number of developers are working on the development of AI, and at the same time they are taking steps to strengthen their computational resources, and in this sense they are continuing to make the best moves.

The winners in this game will build on their current competitiveness so as to create the next competitive edge. But the strategy of the loser, I think, will be to continue to make the best moves and wait for some opportunity to present itself. I believe that Japan is continuing to make its best moves now, and depending on the situation, when the US administration may change, there may come another time when Japanese companies will be able to grow globally.

Toyoda: I would like to know what Ms. Murakami thinks from the standpoint of user companies and their competitiveness in terms of development and utilization.

Murakami: I also think it is true that Japan is a little behind in the digital area as Dr. Matsuo just mentioned. On the other hand, it is in the area of AI that Japanese researchers and developers have made their presence felt. I have wondered why this is.

I was in R&D at a global company in my previous position, and compared to other research fields, Japanese people were very active and had a strong presence in the language field. American companies are mainly English-speaking. In the case of image and voice, for example, speech recognition is a little different, but when it

comes to semantic understanding, you cannot develop globally without thinking about multilingualism. However, inevitably, native English-speaking engineers tend to do jobs only in English. Meanwhile, Japanese people need to think about doing jobs in both English and Japanese first, not only Japanese. Then, when going multilingual, it will be easier to go to other languages if you understand the difference between English and Japanese. In this sense, I personally believe that Japanese companies have the ability to consider the risk of only doing English from the beginning, which I believe is where Japan can win.

On the other hand, this can also be a risk. When using AI, Japanese companies must always use Japanese, and the fact is that most Japanese users, even for work within their companies, have a hard time accepting tools in English, and therefore cannot use the most advanced in the world. This is how I think there is also a drawback. The fact that Japan is not an English-speaking country could be a strength in terms of competitiveness. But at the same time, there are many Japanese who are not very good at English, which is another area of concern regarding competitiveness.

However, when I look at young Japanese people now, they are not at all afraid of reading English. This is because the technology can translate automatically. Considering the fact that they are able to read a volume of literature in English that was completely unthinkable when I was young, the English barrier has been greatly reduced. When developing AI, Japan, which is what we call a linguistic minority in the world, will have opportunities to find the best moves.

Toyoda: I would like to ask Ms. Suga what are your thoughts on the competitiveness of Japanese companies?

Suga: I think all countries other than the US and China are lagging behind. In digital and platform services, the hegemonic countries are still strong, but Japan is quite competitive in many other industries. So I think there is a strong tendency to view Japan as a failure because it is struggling in digital, but in the digital field Japan is rather fighting the good fight in a difficult situation. I think this is a correct assessment.

Although they are fighting the good fight, many Japanese companies seem to be trying to do everything on their own out of a big-company mindset in order to be strong in the domestic market. If we understand that Japan is in a position where it could become a small country or a country that does not have much, the optimal strategy will change. I think it would be good to see more moves toward defining the field in which we should compete by broadening the scope of our cooperation with domestic as well as international companies.

I think the relationship between startups and large companies is

also a matter of crisis. Large companies often lament the lack of digital talent or AI talent in the country, but such people do not go to large companies because they do not get due recognition. On the other hand, the reality is that those people, because they are in startups, are having a very hard time acquiring resources that would normally be easily available to larger companies. I often wish we could see who has the most essential understanding of the new technology of generative AI and who can serve as a pilot, regardless of age or other attributes. Some of the younger people who are doing well in startups are the ones I wish could be entrusted to head large divisions of a company.

It is a shame that there are both companies that have the resources but cannot entrust them to young people, and people who have the motivation and ability but must struggle to obtain sufficient resources.

International Cooperation in Policy

Toyoda: METI is now beginning to support startup companies, and I hope that we can reconcile these two dilemmas that Ms. Suga mentioned.

As the last part of our discussion, I would like to ask how international cooperation on policies should be positioned, and whether there is any meaning to international cooperation in order to catch up. First of all, Ms. Murakami, please tell us how international cooperation can be positioned for the success of Japanese companies in terms of utilization, and what you would like to see the government do, or what you think companies should know on their own.

Murakami: Borders are disappearing both for companies that use AI to provide services and AI itself as an innovation. Both are expanding globally. Many people in Japan think that they are not good at global expansion, but in fact there are many Japanese companies that are quite active on a global scale, even outside of the well-known companies we are familiar with.

While such companies provide services around the world, the regulations in each country are changing by the minute. We believe that it would be a waste of resources for individual companies to keep track of all of these regulations, even the differences between soft law and hard law, which are changing every minute. In order to update the latest information quickly, I think it would be helpful if Japan as a whole cooperates so that companies provide the Japanese government with the knowledge they have gained and the Japanese government redistributes this knowledge to all the companies. Such mutual support would lead to success for Japanese companies.

I believe that there are competitive and non-competitive areas with regard to corporate activities. Since technology itself is a competitive area for companies, I do not think it is necessary to give out the substance of technology, but information on the situation in each country to deploy it should be shared among companies through cooperation, and in order to protect what Japan should protect, information in non-competitive areas should be shared among companies and cooperation between companies and the government should be promoted. I believe this would lead to the development of Japan's economy and the success of Japanese companies.

Now, comparing Japanese and foreign companies, Japanese companies are very bad at cooperating in non-competitive areas. I used to work for IBM, and I was surprised to find that American companies are not afraid to exchange information with their rivals in non-competitive areas, cooperate with each other, and collaborate with each other in appealing to the government. However, Japanese companies are often reluctant to disclose information to other companies to the extent that they are not in the competitive area. If Japanese companies can improve on this, I believe they will be able to make their presence felt in the world.

Toyoda: I would like to ask Dr. Matsuo to share his thoughts on whether there are any policies that are necessary for startup companies from the perspective of development.

Matsuo: In Japanese companies, the people in charge of various areas do not take responsibility for themselves. This occasionally ends up in failure to achieve innovation. For example, there is a discussion around me right now about whether Singapore's copyright law would apply to the use of cloud computing for AI learning, when the cloud server itself is physically located in Singapore. There is an argument that this would be subject to Singapore copyright law. If that is the case, then we are talking about whether all companies using the cloud are subject to the laws of each country, and which may apply. It is just a possibility, and there is almost no actual risk of that happening, but when you are told that, it makes things harder for the person in charge.

Then, to give another example, there is the question of whether large-scale language models (LLMs) trained with personal information are actually personal information. If it is personal information, the law requires that it must be treated as such, but no matter how removed, the data set may still contain personal information. When asked if all LLMs created must be treated as personal information, the legal experts can only say that this is a possibility. Then in the end, nothing can be done.

It is very important to set a precedent for such a situation and have a legal expert comment in such a way that each person in charge does not have to take responsibility; for example, that such a decision can be made in such a case, or that a precedent has been set for a project being conducted in the country. I think it is important to arrange it so that each person in charge does not have to take responsibility for any project. I would like the government to tackle this.

Keywords for the Future of AI

Toyoda: In terms of promoting international cooperation, I thought that it may indeed be important to share the arrangement of risks in areas beyond national borders.

Finally, I would like to ask all of you to say a few key words about what is important to link the development and use of AI to the development of the Japanese economy.

Matsuo: I think the current AI policy situation is very good, and I think that means we will continue to move forward.

Murakami: I think it is important for companies to cooperate in non-competitive areas. I believe that cooperation is needed for each company or individual to get through this AI era, as we all have to get through it together.

Suga: I am very much looking forward to the AI Safety Institute, of which Ms. Murakami has agreed to be the first executive director, as I think it has the potential to become a very important and interesting framework among the moves Japan has made. Dr. Matsuo is also going to support the institute, which has the potential to become a center for the smartest possible designs by working together in a coordinated manner in the name of "AI safety".

Toyoda: Thank you very much for your time. I wish you all the best and look forward to working with you in the future. **JS**