

Study Group 'AI governance and its Evaluation'
Report on the Session #6 (Phase II)

1. Introduction

The Japan Deep Learning Association establishes study groups as a forum for deepening knowledge and discussing domestic and international policy trends related to artificial intelligence (hereafter AI) and Deep Learning (hereafter DL). This study group, 'AI Governance and its Evaluation,' defines 'governance' as a system of management and evaluation by various actors and launched a study group in July 2020 to investigate what forms of governance are possible to help build trustworthy AI systems, and the phase II began in September 2021.

In the 6th session (Feb. 15, 2022), Professor Noriyuki Yanagawa from the Graduate School of Economics at the University of Tokyo spoke in the first half on "The Policies and Expectations to Companies for Agile Governance." In the second half, Ms. Teruka Sumiya from the World Economic Forum spoke on "Agile Governance: Practices and Challenges." This report is a reconstruction of these topics and a record of the discussion.

2. The Policies and Expectations to Companies for Agile Governance

In the first half, Prof. Yanagawa spoke on the topic of "The Policies and Expectations to Companies for Agile Governance."

Challenges and direction in the age of technological innovation

The speed of technological innovation and environmental change has been dramatically increasing. Naturally, rules and laws must be updated to suit the environment but they are being outstripped by the speed of environmental change. One reason for this is thought to be that legislators and government bodies reviewing these rules and laws have inferior information regarding these technologies and changes to the overall environment.

Because changes in laws and rules can affect society, the impact of these changes needs to be carefully considered. The current law-making system in Japan has many steps, which prologues the decision-making process and makes keeping up with environmental change, challenging.

One solution is to make use of the private sector which has access to more up-to-date information on changes to the environment. In other words, it uses the Self-Selection Model outlined in economic theory. While it is expected that the private sector will take the lead in forming such things as guidelines, that may become the standard, although these

guidelines are not legally enforceable. By utilizing the private sector's information gathering mechanism, legislators may be able to bolster their inferior information gathering abilities.

The impact of data utilization on legislation

There are rising expectations surrounding data utilization for timely updates of rules to match environmental circumstances. While AI is considered to be an extension of data utilization, the legislation based on the effective data analysis needs to be aimed for in the first place.

To do this, the reliability of data needs to be proven. No matter how well-analyzed data is, the original data needs to be reliable in order for it to become the basis of legal change. The same is true for the judicial system. By ensuring the reliability of the data used, it is possible to consider the optimal revision of a rule while accounting for more variables. Because of this, it is hoped that blockchain will be used in the judiciary.

While saying that the judiciary and legislation areas are in a position of having inferior information and that they should use private sector information so that they can quickly grasp information, the negative aspects of this should also be considered. Specifically, if a single company's rules or information is used to form law, then a monopoly situation may occur resulting in an impaired free market environment. This is an area of 'Code is Law' where a smart contract is the typical example. The same applies to the automation of the AI learning process, where program updates can conceivably rewrite the rules surrounding it.

In this case, there are two areas of governance that must be looked at, whether the court can use the automated process correctly, and how to bridge the logic gap between the automated process and the written law itself. The technology automation process can have a direct impact on the law. However, in any law-abiding country, the law must have the ability to prevent technology from running away. Currently existing rule making structures by technologies and law are very volatile and present major challenges.

A legal and economics-based perspective on the realization of agile governance

Agile governance is critical to keeping up with the speed of change in cyberspace. The very framework itself that governs practices, including conditions and criteria for rule updates and value prioritization, must constantly be reviewed and updated. By doing so, technologies become more substantive and laws can be updated accordingly.

In a law-abiding country, the legislative system collects citizen's values and ensure the stability of the society through this process. However, the continued advancement of technology makes this difficult. Therefore, the ideal institutional design needs to be reviewed and an agile creation of legislations should be sought.

Looking at the law from an economic perspective, the law's influence on the economic system as both a variable and major factor cannot be overstated. When assessing the impact of a legal revision on the economic system, the issues of legal fairness vs economic efficiency must be given due consideration. However, recently in the field of advanced economics, it has been pointed out that fairness and efficiency do not have to exist in conflict with one another, and should legal revision be thought about in a rational manner.

The legal system cannot be designed based solely on political considerations but rather takes a full view of society's values, customs, and general consciousness. It therefore forms a loop-like structure within the legal system and changes in values and customs in a society. This is also true of technology's relationship with the legal system. In short, the two loops of technology and the legal system as well as social values and the legal system do affect each other and it is important that this is recognized as part of creating agile governance in relation to the legal system.

3. Agile Governance; Challenges and Practices

In the second half, Ms. Sumiya spoke on the topic of "Agile Governance; Challenges and Practices."

What is the World Economic Forum (the Davos Forum)?

The World Economic Forum is an international organization that aims to solve various global problems and to act as a bridge between the public and private sectors. The forum provides 17 different platforms to help solve global problems in conjunction with various stakeholders.

In San Francisco, the World Economic Forum has established its Centre for the Fourth Industrial Revolution or C4IR for short, which aims to create global rules for the anticipated fourth industrial revolution. The number of partner organizations and governments is expanding and centers have been set up in fifteen countries including one in Japan.

Domestically the center has helped to establish guidelines for the use of facial recognition technology in places such as airports. Additionally, it has been making recommendations to the government for public purchases of AI services such as AI Procurement 2.0 based on case studies from the United Kingdom.

Overview of the agile governance project

The agile governance project aims to respond to the changes in social structure caused by the fourth industrial revolution. While in the past human intervention has been required to manage the interaction between cyberspace and the real world, but as society becomes increasingly integrated into the digital world as part of Society 5.0, direct human intervention

will continue to decrease and the state of governance changes to adapt.

The conventional model of governance relies on the assumption that environmental changes will occur slowly and that services will be provided on a one-to-one basis. This is the basis of how the government has formulated rules and legislation and provided monitoring for services. However, the system will continue to change and with many service providers and organizations working with these changes, it becomes necessary to review the existing assumptions around governance. It is apparent that the government's existing powers for enforcement, which respond to change by making legal amendments every few years, are insufficient for the reality of a multi-actor cyberspace environment.

In response to this, the center aims to build agile and flexible governance with multiple feedback loops that create greater cooperation among stakeholders. Specifically, the following issues need to be addressed.

- What governance structures are needed for a multistakeholder environment?
- What mechanisms are needed to involve do the various actors?
- What is needed to create trust in governance?

Practical examples of agile governance in the procurement process

Below are some of the examples from the UK study about public procurement mentioned earlier. The UK operates a digital marketplace which publishes a list of suppliers online with the aim of improving the efficiency of IT procurement by the government. This service which includes groups such as recruitment, cloud services, development and operation consignment companies is based on procurement needs and allows for orders to be placed without the need for competitive bidding. As a result of this, below changes in the procurement process have been observed and they led to a reduction in the man-hours spent on procurement, and an improvement in the overall quality. Additionally, procurement lead time decreased and an evaluation system for procurement companies became possible.

Changes in the procurement process

- Creating lists of candidate companies is no longer necessary
- Formulating specification documents which requires advanced skills is no longer necessary
- Time-consuming public offerings are no longer necessary
- The cost requirements at the time of selection have decreased because the most suitable company is selected
- It is now possible for information from post-procurement evaluations to be collected using a common index

The digital marketplace was created by using a contract based on the framework agreement. Agreements and orders are separated in the marketplace but all services in the marketplace must have signed the participation agreement and its contents beforehand, this forms the basis for ordering to be performed. The agreement framework is designed based on service categories such as G-Cloud frameworks, and the digital outcome & specialist framework.

For example, the G-Cloud framework is a framework with categories such as cloud software, cloud hosting (including rental servers), and cloud support. It displays the prices of materials and service definitions as well as the terms of any agreements. The requirement includes supporting the Technology Code of Practice, a cross-government standard.

In this way, the digital marketplace can be significant contributor to risk reduction in procurement for innovation. It has also shown to be effective for procurement in areas where useful solution is still not available, needing more research and development.

The significance of the digital marketplace

- By clearly displaying price, contract conditions and service specifications, transparency is increased and procedure becomes expedited
- By establishing a procurement framework divided into the areas of cloud services, personnel & consignment development and data centers, separate contracts can be made for each required service which makes in-house and agile development easier
- Increasing transparency has resulted in more reasonably priced services for government agencies and an increase in innovation around new ventures, and small and medium-sized businesses entering the market
- It also leads to greater levels of IT literacy among staff as they need some IT skills to make use of the system

Adopting agile governance domestically

Updating governance is essential to maintain trust in an environment of innovation. One such case domestically is the ongoing discussion around the management of the 'My Number' system. One of the issues of agile governance is establishing user-centric systems that allows for customization of services while maintaining optimization and interoperability in legal and regulatory operations systems.

In the past, the goal was to keep law and regulation formation, lawmakers and field operators separate. But in the future, all of these law, regulations, system and operation will

need to be considered as a single unit to ensure interoperability. The Provisional Research Commission on Digital Administration was established in November 2021 with the Prime Minister at its head, aiming to strengthen the promotion and consideration of cross-cutting issues around structural reforms such as digital reforms, regulatory reforms, and administrative reforms. The commission adopted five main principles, including agile governance principle and aims to review over 60,000 laws and regulations. The agile governance principal aims to build a flexible governance structure while considering the issues below.

Challenges with implementing agile governance

- How to keep track of changes in the environment and risks?
- What channels and timing should be set for environmental changes?
- What are the limits of stakeholder involvement in goal setting?
- What sort of places needs to be created?
- How are AI changes evaluated and audited?
- How and by whom is the evaluation criteria decided?
- How will mutual cooperation be created?
- How to define responsibility and demarcation points?
- How to incentivize private sectors to actively participate governance process?

4. Organizer's Summary of the Main Comments from the Participants

The implications of agile governance on political and social systems were discussed in the sixth meeting. Below is a summary of the question-and-answer session for this topic.

- Considering the starting point for agile governance
 - ✓ The Japanese government's governance watches over areas such as social infrastructure and there are industrial quality standards for products such as cars. These rules and regulations, however, give the impression that they were formed as a countermeasure during a state of confusion or anticipation. With the spread of AI and other advanced technologies still being deemed insufficient, is this the right timing to consider regulation?
 - ✓ Previously, there was a degree of confusion before rules were created. Advanced consideration should be placed, predicting risks before confusion occurs. In particular, technologies such as autonomous driving vehicles that can affect human life, rules need to be thoroughly examined prior to implementation. For situations where the impacts of new technology remain unknown simulations need to be conducted in the virtual space.

- ✓ While the government needs to have influence over the conservation of social infrastructure, checks may be performed by the private sector if there are stringent standards within the industry. Government, however, should play a role in examining these standards. The problem is that with the increasing sophistication of technology what checks are being carried out is becoming harder to ascertain and the scope in which legal experts alone can make a decision is narrowing.
- ✓ Until now it was thought that there was enough time to observe overseas case studies before starting domestic investigations but that is not the case.
- ✓ Considering governance after the data has been collected is too slow and therefore rulemaking needs to be thought of beforehand. It is beneficial to think of the risk and implement governance before a problem actually occurs although explaining this to the citizens may require some ingenuity.
- Incentives for agile governance
 - ✓ For example, by proceeding with IoT, on-time maintenance has become possible and the number of regular outages can be reduced in these smart plants. On the other hand, only one or two companies have been through the various processes such as governance implementation to obtain smart plant certification. This is largely due to companies' dislike of new things and desire to only adopt the minimum requirements necessary. Enhancing the insurance system to encourage these sorts of activities might be one form of incentive. Rather than forcing responsibility onto domestic companies that innovate, innovations that benefit the whole of society should be imagined and insured. As in the case of blockchain, several services have been reduced due to regulation, which is why innovation and the impacts of governance should be considered carefully.
 - ✓ As there are few companies which have the capacity to innovate, and any incentives will only be applicable to these few. This is why a high level of governance is expected of these firms. On the other hand, there are various uncertainties and risks that can affect even advanced companies, the impact of which can be widespread. This is why discussing risks in a public-private format is essential and the active participation of the private sector is necessary.
- Issues associated with rule formation by platformers
 - ✓ Platformers like GAFA have created rules themselves but recently government regulation has been considered. However, historically legal systems formed by the government have become a barrier to new entries into the market.
 - ✓ As the private sector has its own incentive systems, implementing feasible rules for them is challenging. For industry groups to formulate agile governance rules, special interest groups need to be blocked from the conversation. Additionally,

rule development may be delayed by the diversification of international cases. While difficult, small-scale experiments, as well as trial and error cases, are necessary to change the general consciousness. Agile governance is a good way of taking small steps to overcome these problems. Similar methodology has already been carried out in Japan at special testing zones which would verify spreads nationwide. By rapidly repeating an experiment, it is possible to determine if a given rule is useful for only one company or for stakeholders generally. Thus, the best path forward for the governance ecosystem can be ascertained.

- ✓ Simulations in virtual space are understood to be a process of gradual tuning, this is done by visualizing changes appropriately so that various stakeholders can share information.
- ✓ In the case of the Olympic games, for example, people's opinions could be sent via SNS. While there was some distortion of information, as overall the effect was positive. This shows the necessity of incorporating citizens' opinions when creating overall rule changes in the virtual space.
- Challenges in the practice of agile governance.
 - ✓ It can be difficult to facilitate studies with multiple stakeholders involved. To maintain deadline fidelity and efficiency it is often useful to keep the number of people involved in rule change to a minimum. While this is effective in the short term it can cause the study to be inconclusive and unclear in the long term. In essence, a greater variety of specialists needs to be involved in studies and conscious thought of whom is involved in the study needs to be maintained.
 - ✓ People involved need to keep questioning their convictions personally and professionally about whether they should continue in the field. It's hard to have an outside view of a project and see how closed off it has become, so improving transparency and project progress disclosure at checkpoints needs to be emphasized. Additionally, citizen-based monitoring groups may also be useful.
- The motivation behind agile governance
 - ✓ When would this motivation for agile governance occur?
 - ✓ The concept of a 'feeling' is important. Particularly in Scandinavian countries, the incorporation of governance into every aspect of life is something that has become established in their culture. There also seems to be a cultural acknowledgement that even if you alone cannot solve a problem somebody exists who can.
- The goal of governance
 - ✓ As the government is elected, there is an argument that any rule change put

forward by them is the will of the people. However, as the elected bodies have limited time in running policies, what should the goals of governance aim at?

- ✓ Technologies and governance not accepted by the people, do not spread. Information is key to whether or not a technology or governance rule is accepted, as such, there needs to be appropriate ways to handle misinformation. A single innovative company can create rules of convenience for itself, strong public opinion can prevent the introduction of the technology. These two aspects need to be balanced appropriately.
 - ✓ We can see the importance of having real-time public feedback and two-way information sharing between citizens and experts when revising the law. For this to happen education and activities that improve literacy around this area is critical so that the public can make informed judgements. It is also necessary to deal with ill-intentioned opinions that generally exist in a form of reaction.
 - ✓ Areas of user interaction can be seen in activities such as an ambassador program by corporations and through civic tech where citizens co-develop solutions with government utilizing open data. Thus, the citizens contact for governance varies apart from the election process. With multiple points of contact, a broader perspective can be gained by changing positions and engaging with governance in different ways. While activities that promote education and awareness are important, there also needs to be a fostering of a culture of participation rather than one of unidirectional communication.
 - ✓ As previously stated there needs to be a two-way flow of data between the government and the public. It is often the case that when there is little or no data that a unilateral decision by a supposed expert is made. The data used to make a decision needs to be shared. Recently groups such as NPOs have been requesting consultation for data they need and it would be beneficial if this trend continues.
- Issues related to literacy
- ✓ While the need for literacy is commonly understood, precisely what literacy is an unknown. There are few people who comment on science-related issues in Japan and it can be hard to spread information about new technology.
 - ✓ In the future, the digital native generation will be front and center and as such the concept of literacy can go undefined. On the other hand, concerns such as the misuse of GPS data need to be commonly understood. In the future, such risk recognition may be rolled into literacy but at the present, many people do not understand these dangers and governance may not be considered until after an incident has occurred.

- ✓ Before discussing the definition of digital literacy three social problems need to be addressed. The first is the global question of the difference of IT understanding between generations. The second is how to relate to an SNS-centered, information-overloaded society. The third is an inability to understand the risks coupled with an inability to source intelligible information from a third party. This is a particular concern because risk management requires correct information and acquisition of proper data.
- ✓ As management may not understand the finer points of a situation at sites, they may not seriously enact governance until a major problem occurs. It is particularly important for members of the Keidanren, or Japanese Business Federation, to keep their knowledge of governance current. On the other hand, the evolution of industry structure and management is expected to improve governance.
- Future issues
 - ✓ The idea of incentives is similar to those in the decarbonization argument. While only a soft law, building a mechanism that rates and evaluates governances by checking the contents of disclosure is necessary. While there are costs associated with governance, it can lead to long-term growth in a company. If governance remains inadequate consumers will look to other places.
 - ✓ There are particularly high expectations for insurance in life-affecting industries. There is always a high degree of uncertainty around a new service and the insurance industry is expected to act as a safety net.
 - ✓ Companies need to actively engage in information disclosure related to governance. In the previous system, companies merely complied with government rules and had third-parties checked. In the modern world where both technology and industrial structure are complicated, companies need to consider their own goals as the country cannot stay abreast of every rule. Therefore, companies need to proactively disclose their strategies and policies to gain public trust. Merely posting information on a website does not, however, mean that the public has been engaged. Consistent interactivity and transparency are required as well as the consistent acquisition of feedback.

The discussion of AI Governance domestically and internationally will continue through this study group.

(Written by Takahiro Amano)

(Translated by David Shield)

<The 6th Session of the Study Group>

Date/time: February 15th (Tuesday) 10:00-12:00 (On Zoom)

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- Topic 1 : "The Policies and Expectations to Companies for Agile Governance" provided by Prof. Noriyuki Yanagawa (Graduate School of Economics, the University of Tokyo)
- Topic 2 : "Agile Governance: Practices and Challenges" provided by Ms. Teruka Sumiya (World Economic Forum Center for the Fourth Industrial Revolution Japan Center)
- Questions and discussion