Global Forum on AI Network Society 2022

With the participation of experts from Japan and abroad, this forum was held to contribute to the resolution of various social issues related to AI through discussion on the use and distribution of data, which is the key to the dissemination and use of AI, as well as regulatory issues and governance related to AI, taking into an account international trends.

○ Date and time: Tuesday, March 1, 2022, 13:00 to 18:00 (online)

Time	Session	Details
13:00-13:05	Opening Remarks (5)	KANEKO Yasushi, Minister for Internal Affairs and Communications
13:05-13:25	Keynote Lecture (20)	**"How to Value Data in a World with AI"** Laura VELDKAMP, Professor, Columbia University
13:25-14:05	Keynote Dialogue (40)	**The Industrial Revolution by AI and Data** Laura VELDKAMP, Professor, Columbia University IWATA Kazumasa, President, Japan Center for Economic Research
14:05-15:25	Panel Discussion (80)	**"Tomorrow's World Spurred by Data and AI"** **« Moderator »** OHASHI Hiroshi, Professor of Economics and Dean, Graduate School of Public Policy, The University of Tokyo **« Panelists »** TAKI Toshio, Executive Director, Head of Sustainability and CoPA, Head of the Money Forward Fintech Institute, Money Forward, Inc. TAMAKI Emi, Professor, Computer Science and Intelligent Systems Program, Faculty of Engineering, University of the Ryukyus; CEO, H2L, Inc. MUTO Shinsuke, President, Tetsuyu Institute Medical Corporation; Chairman, Integrity Healthcare
15:25-15:55	Special Lecture (30)	**"AI, Globalisation, and the Future of Work"** Richard BALDWIN, Professor, International Economics, The Graduate Institute, Geneva Moderator: SEKIGUCHI Waichi, President, MM Research Institute; Former Editorial Writer, Nikkei, Inc.
15:55-16:00		- Break-

※ Affiliations and titles of participants as of the time of the event.

Global Forum on AI Network Society 2022

16:00-16:15	Honor Lecture (15)	SUDO Osamu, Professor, Faculty of Global Informatics, Chuo University; Director, ELSI Center, Chuo University; Project Professor, Graduate School of Interdisciplinary Information Studies, The University of Tokyo
16:15-16:35	Special Lecture (20)	**"AI Ethics : Translating Principles into Governance and Regulation"**
		Francesca ROSSI, IBM Fellow and the IBM AI Ethics Global Leader, IBM Corporation
16:35-17:55	Panel Discussion (80)	**"Governance for the World Living in Harmony with AI"**
		« Moderator » SUDO Osamu, Professor, Faculty of Global Informatics, Chuo University, Director, ELSI Center, Chuo University; Project Professor, Graduate School of Interdisciplinary Information Studies, The University of Tokyo **« Panelists »** EMA Arisa, Associate Professor, Institute for Future Initiatives, The University of Tokyo HIRANO Susumu, Professor and Dean, Faculty of Global Informatics, Chuo University FUKUDA Takeshi, Director of IBM Research – Tokyo, IBM Japan MOCHIZUKI Yasunori, NEC Fellow, NEC Corporation
17:55-18:00	Closing Remarks (5)	NAKANISHI Yusuke, State Minister for Internal Affairs and Communications

※ Affiliations and titles of participants as of the time of the event

Sessions Overview ①

Laura VELDKAMP
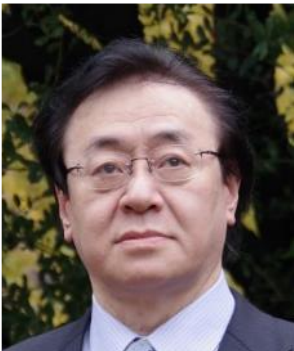(Professor, Columbia University)

SUDO Osamu
(Professor, Faculty of Global Informatics, Chuo University; Director, ELSI Center, Chuo University; Project Professor, Graduate School of Interdisciplinary Information Studies, The University of Tokyo)

"How to Value Data in a World with AI"

● More value is created by leveraging AI to produce knowledge from data. As the volume of data grows exponentially, the value of a company is determined by the amount of data it possesses. The reason behind for the growth of large U.S. corporations is not their tangible assets, but the vast amount of intangible assets they possess: data. Maximizing data value through AI is a key to maximize corporate value.

● Data utilization will have different outcomes depending on data-intensity and labor-intensity. It is essential to employ an optimal ratio of workers who manage data and workers with older technological skills, and then to increase employment of workers who use AI to generate knowledge for the future. In practice, the growth rate of AI-skilled workers has outpaced that of old-tech workers and data managers over the past few years. Wages are also higher for AI-skilled workers, old-tech workers, and data managers, in that order.

● AI-skilled workers currently make up a small percentage of the workforce, and the contribution to revenue from data utilization is higher for old-tech workers. Even during the Industrial Revolution, only 5-13% of the workforce used new technologies; there is no doubt that data utilization through AI is a source of value creation, and the labor share in firms is to change.

● In the midst of disruptive technological trends since the start of private-sector use of the Internet, AI is a critical element and its principles and governance initiatives have received significant attention.

● For the appropriate development and implementation of AI, in March 2019, the Japanese government compiled "Human-Centric AI Social Principles" ① Human-Centric Principles, ② Principles for Education and Literacy, ③ Privacy Principles, ④ Principles for Ensuring Security, ⑤ Principles for Securing Fair Competition, ⑥ Principles for Fairness, Accountability and Transparency, and ⑦ Principles for Innovation). These principles are the core of building a new society through the use of AI.

● The Conference toward AI Network Society of the Ministry of Internal Affairs and Cmmunications, which I chair, has been discussing what the ideal AI society is, how AI should be utilized and how data should be distributed.

● The G7 meeting is scheduled to be held in Japan in 2023, and preparations are underway to actively make proposals on how AI should be used. In the midst of various developments, we are expected to cooperate with international communities to create a new society.

Richard BALDWIN

(Professor, International Economics, The Graduate Institute, Geneva)

Special Lecture

Francesca ROSSI

(IBM Fellow and the IBM AI Ethics Global Leader, IBM Corporation)

"AI, Globalization, and the Future of Work"

<Moderator> SEKIGUCHI Waichi, President, MM Research Institute; Former Editorial Writer, Nikkei, Inc.

- In my 2019 book, "GLOBOTICS," I stated that digital technology will simultaneously automate and globalize white-collar and professional jobs. As computers acquire new cognitive skills, many jobs that once required human intervention, such as translation, editing, and graphics, can now be accomplished through machine learning.

- Digital technology grows slowly at first, and then extremely fast at some point, where disruption (disruptive innovation) occurs.

- In the future, jobs that can be automated by software robots will leave human hands. Jobs that can be done by cheap labor in emerging markets will be offshored. But collecting big data about ethics, creativity, curiosity, motivation, and other human and complex things will be difficult for remote intelligence and AI.

- Jobs that can be automated, including bookkeeping, accounting, and certain legal work, will be replaced relatively quickly by robots, while competitive workers will have more opportunities.

- Governments are required to have proactive labor market policies, such as retraining and relocation supports to help workers readjust.

"AI Ethics : Translating Principles into Governance and Regulation"

- AI ethics has passed through the phase of awareness and the phase of principles, and is now in the operational phase called "AI Ethics 3.0".

- The draft regulation called "EU AI ACT" published in 2021 is one form of AI ethics, and is characterized by the fact that it regulates applications of AI rather than AI itself. The draft regulation defines four risk levels, with obligations (for providers and users of AI systems) and restrictions on applications according to the levels. It also defines seven requirements for "trusted AI. Companies must build AI solutions in accordance with these regulations.

- IBM has established principles that AI is an extension of human intelligence which requires transparency and accountability, and under these principles it sets out what trustworthy AI should look like. IBM's principles are similar to the seven requirements for "trustworthy AI" in the proposed EU regulation, and the company has put the principles into operation with effective internal governance.

- Regulation is only one of many reasons to adhere to AI ethics. While compliance with regulations is important, AI ethics is about more than mere regulatory compliance.

Keynote Dialogue

Laura VELDKAMP

(Professor, Columbia University)

IWATA Kazumasa

(President, Japan Center for Economic Research)

"The Industry Revolution by AI and Data"

- AI technologies include "prediction algorithms" and "invention algorithms". Which do you think has a more direct impact on productivity and leads to a higher growth rate? Also, do you see any difference compared to the industrial revolution? (Iwata).

- In the same way that technology changed the way goods were produced in the Industrial Revolution, AI technology will change the way knowledge is generated. Capital can be divided into those used for capital investment and those used for research and development, but we believe that it is the "invention algorithms," which are research and development, that generate higher growth. (Veldkamp)

- How do you see the AI revolution impacting the U.S. economy? (Iwata)

- While there will certainly be a significant impact, it will take decades for AI technology to become a general-purpose technology and to be adopted in a variety of industries. Also the technology alone is not enough to keep growing. (Veldkamp)

- In a study conducted by the Japan Center for Economic Research, it was found that if AI and IoT were fully utilized, the projected growth rate of the Japanese economy would change from less than 1% to 5%. In the long run, technological advances will converge, but this impact will be significant. (Iwata)

- Companies know that AI technology is far more productive and profitable than older technologies. That is why they are promoting the use of AI and are working to develop human resources. (Veldkamp)

- How do you think the free distribution of data across different industries, sectors, or countries will affect the productivity of companies? (Iwata)

- Data utilization has made our lives more convenient, efficient, and productive. On the other hand, increased data sharing may transform corporate behavior. Care must be taken in the free distribution of data, including privacy issues. (Veldkamp)

- Japan lags behind in the utilization of AI due to the lack of a data sharing mechanism. In China, more than 80% of companies are already utilizing AI, but in Japan, only less than 40% are utilizing AI. (Iwata)

- The utilization of AI has just begun, and it will be necessary to closely monitor changes in the labor participation rate and intangible assets resulting from the utilization of AI. (Veldkamp)

- It has been pointed out that the flow of data is the flow of money. If a world in which data and currency are combined is created, what do you think the outcome will be? (Iwata.)

- While money is a form of payment for services and products, data is knowledge. Knowledge must be shared and we can grow by sharing knowledge. It is important to share knowledge and data while striking a balance between privacy protection and respect for the owner of the information. (Veldkamp)

Panel Discussion

"Tomorrow's World Spurred by Data and AI"

【Moderator】
OHASHI Hiroshi
(Professor of Economics and Dean, Graduate School of Public Policy, The University of Tokyo)

【Panelists】
TAKI Toshio
（Executive Director, Head of Sustainability and CoPA, Head of the Money Forward Fintech Institute, Money Forward, Inc）

TAMAKI Emi
(Professor, Computer Science and Intelligent Systems Program, Faculty of Engineering, University of the Ryukyus; CEO, H2L, Inc.)

MUTO Shinsuke
(President, Tetsuyu Institute Medical Corporation; Chairman, Integrity Healthcare)

- As data adds economic value at an accelerating pace, it is necessary to conduct deeper, sector-specific analysis in areas such as healthcare and finance. (Ohashi)
- The Japanese financial industry is increasingly using application programming interfaces (APIs) to link programs together, and clear consent for information transfer is required at the time of linkage. However, the concept of rights pertaining to access and ownership of data and related legislation are insufficient. (Taki)
- In order to realize personalized medicine with quality data, it is necessary to build a platform that people can perceive as valuable, but it is important to reduce the burden on the healthcare providers. Good AI will be meaningless if it does not help the healthcare providers. (Muto).
- I have been challenging to digitize the "sensation of a person acting on an object to obtain a sense of presence" and its data output. If this is realized, it will create a lot of added value, such as working in a virtual space (metaverse) while in a room, or gaining shared experiences in sports and sightseeing. On the other hand, there are many issues to be considered, and the researchers are already discussing the rule-making for practical use. (Tamaki)
- The key to financial digitalization is not to cause incidents such as information leaks. Security standards are necessary for fintech businesses, even if they are ventures. (Taki)
- Online medical care is growing, but a new digital divide is emerging. It is important to reduce the load that has been endured unknowingly. (Muto.)
- It is necessary to investigate how to integrate data and return results to users, as well as the movements and transformations of users. It is important to control self-information. (Tamaki)
- What kind of environment needs to be developed in Japan to realize the DFTT (trusted and free data distribution)? (Ohashi)
- The transfer of personal information is protected by law and easy to discuss, but comparatively statistical and processed information is difficult to discuss. Companies individually need to take actions such as issuing data statements. (Taki)
- The goal of democratization of healthcare is to have the right to self-determination and to create a well-governed framework. In preventive medicine, it is necessary to share and utilize data from multiple fields. (Muto)
- The three challenges to improve the environment are data ownership, user experience of consent, and data security and sharing across disciplines. (Tamaki)

Panel Discussion

"Governance for the World Living in Harmony with AI"

【 Moderator】
SUDO Osamu

(Professor, Faculty of Global Informatics,

Chuo University, Director, ELSI Center,

Chuo University

Project Professor, Graduate School of

Interdisciplinary Information Studies,

The University of Tokyo)

【 Panelists 】
EMA Arisa

(Associate Professor, Institute for Future Initiatives, The University of Tokyo)

HIRANO Susumu

(Professor and Dean, Faculty of Global Informatics, Chuo University)

FUKUDA Takeshi

(Director of IBM Research – Tokyo, IBM Japan)

MOCHIZUKI Yasunori
(NEC Fellow, NEC Corporation)

- AI governance is moving toward the stage of defining and implementing principles of fairness, transparency, and trustworthiness. Efforts to solve issues related to AI governance are not in the "competitive domain" but in the "collaborative domain," and it is important to involve various stakeholders in discussions and to build an ecosystem. (Ema)
- The purpose of AI utilization is to augment human intelligence, and not to replace it. New technologies must also be transparent and explainable; IBM has clarified the principles for trust and transparency and has stated that precision regulation of AI will be determined on a use-case basis, rather than regulating the technology itself. (Fukuda)
- In order to create social value through AI, it is important to gain society's trust and acceptance as well as functionality and performance; it is essential to ensure that AI governance does not become an impediment to innovation creation or a barrier to entry. (Mochizuki)
- Although there are discussions on "hard law" and "soft law" for the regulation of AI, it is important to share wisdom on what are reasonable regulations for the diverse and specific risks that will emerge in the future, rather than a dichotomous discussion. (Hirano)
- Regarding the EU regulatory bill, while I understand the idea that it is better to be on the safe side, but there is the risk of delayed innovation. The contents of the regulations need to be scrutinized. (Hirano).
- AI is a developing technology, and it is important to assume that technology, risk, and social acceptance will change over time. (Fukuda)
- While the high-level thinking of the EU is important, from the view of the private sector, I would like to stress on the significance of a use case-based thinking and to make it realistic and compliant while cooperating. (Mochizuki)
- There are differences among countries and regions in terms of attitudes towards privacy, human dignity, and work style. We believe that the functions of academia, such as information sharing and dissemination, will be useful. (Ema)
- The regulations for AI should be changed according to the situation as it is moved around, and there may be a need to adapt to the most stringent regulations. It is important to ensure interoperability. (Fukuda)
- It is important to proceed with AI while gaining an understanding of the benefits and other aspects of its use. (Mochizuki)
- It is important to seek a cooperative path with the EU. Human resource development and discussion are essential. (Ema)
- In a human-centered society, it is important to discuss "ELSI" (ethical, legal, and social issues) so that AI is under control. (Hirano)
- It should be noted that there are differences in legislation, industrial structures, administrative systems, etc. in each country, International cooperation should be promoted after clearly indicating this diversity to the EU and other countries. (Sudo)