



# Summary of The 5<sup>th</sup> STS *forum* INDIA – JAPAN Workshop in Delhi, India



**February 26, 2020 [ 10:00 – 17:00 ]**  
**Venue: Ballroom, Sheraton New Delhi**

## **Organized by**

Science and Technology in Society *forum* (STS *forum*)  
Ministry of Science and Technology of India  
Confederation of Indian Industry (CII)  
Japan External Trade Organization (JETRO)

## **Supported by** Embassy of Japan in India



Welcome Reception hosted by H.E.Mr. Satoshi Suzuki, Ambassador Extraordinary and Plenipotentiary, Embassy of Japan in India



## **Opening Address**

**Mr. Kanji Fujiki,**  
**Executive Director, STS *forum***



Mr. Kanji Fujiki delivered the opening address. He welcomed the participants to the 5th Science and Technology in Society *forum* (STS *forum*) India-Japan Workshop and thanked the organizers for all their support. Mr. Fujiki explained “the lights and shadows of science and technology,” highlighting the need to strengthen the lights and control the shadows and calling for not only professional scientists, but also policymakers, business leaders, and government officials from all over the world to work together to do so. Next, Mr. Fujiki explained that the aim of the workshop is to strengthen cooperation between Japan and India in science, technology, and innovation, specifically in relation to “Strengthening the Startup Initiative by Japan-India Collaboration in Science, Technology and Innovation” and “Improvement of Quality of Life by Utilizing Big Data and AI.” Furthermore, he emphasized the ongoing strong partnership between Japan and India, including at the summit level. Lastly, he encouraged more Indian leaders to attend the annual meeting of STS *forum*.

## **Welcome Address**

**Mr. Satoshi Suzuki,**  
**Ambassador Extraordinary and Plenipotentiary,**  
**Embassy of Japan in India**



Mr. Satoshi Suzuki congratulated STS *forum* for holding the 5th STS *forum* India-Japan Workshop and commended the advancement of bilateral relations, particularly in science and technology. He believed that the workshop would not only tackle rich content, but also promote the exchange of ideas and strengthen connections between the people of Japan and India.

In addition, Mr. Suzuki highlighted the role of startups and entrepreneurship in developing new technologies and applying them in society. He also touched on the growing role played by AI, Big Data and the Internet of Things.

**Mr. Chandrajit Banerjee,**  
**Director General,**  
**Confederation of Indian Industry (CII)**



Mr. Chandrajit Banerjee, welcomed the participants to the workshop and highlighted the great value of STS *forum* to Indian industry. He explained that Indian and Japanese industry are engaged in active partnership and that Indian companies have learned much from Japan. He expressed his hope that both countries' companies would work together for many years to come.

Next, Mr. Banerjee talked about the economic and social benefits of science technology. He singled out Japan's Society 5.0 initiative for praise and spoke about Indian companies' efforts to make a similar positive impact on society and contribution to the Sustainable Development Goals (SDGs). Finally, Mr. Banerjee shared examples of the Confederation of Indian Industry's initiatives to promote start-ups, innovation and sustainability.

**Mr. Ichiro Sone,**  
**Executive Vice President,**  
**Japan External Trade Organization (JETRO)**



Mr. Ichiro Sone expressed his honor to be speaking at the workshop and thanked the organizers for making it possible. He then talked about the role of the Japan External Trade Organization of promoting international trade and highlighted the importance of India to Japan in this regard.

In particular, Mr. Sone mentioned various initiatives to foster interaction between Japanese and Indian start-ups and pointed out that Indian companies are fostering innovation in Japan. In closing, Mr. Sone expressed his hope that the workshop would contribute to furthering such bilateral collaboration and wished for its success.



## **Session 1: Strengthening the startup initiative by Japan-India collaboration in science, technology and innovation**

Japan and India enjoy a good relationship and cooperation between the Japanese and Indian governments is also expanding in the field of science and technology.

As global society enters the age of IoT in which hardware and software integration presents a key area for growth, Japan and India have complementary strengths in the digital field and development of new partnerships from this viewpoint will be highly advantageous for both sides.

In 2018, the governments of our countries agreed on the Japan-India Startup Initiative and have since been advancing collaboration among startups in the digital field. In line with this effort and to expand the scope of collaboration to inter-company collaboration, IT human resources, R&D in AI, next-generation networks, and electronics, Japan and India agreed on the Japan-India Partnership in the Digital Industry and exchanged an MOC (Memorandum of Cooperation) thereon.

Taking this background into account, discussions are expected to cover a broad range of topics from personnel exchanges and human resource development to research cooperation, development investment, and business collaboration, so that Japan and India may strengthen startup initiatives by collaborating in science, technology, and innovation.

### Topics to be discussed:

- ✓ Human resource development through mutual exchanges
- ✓ Research cooperation in various fields, including the digital field
- ✓ Building a win-win relationship in startup investment
- ✓ Our two countries' strength and mutual complementarities
- ✓ Examples of success and keys to success
- ✓ Current initiatives and measures for success
- ✓ Ideals for successful cooperation between Japan and India



< Session Chair >



**Prof. Ashutosh Sharma,**  
**Secretary to the Government of India,**  
**Department of Science and Technology (DST),**  
**Ministry of Science and Technology**

The session was chaired by Prof. Ashutosh Sharma. He explained that mankind faces two major challenges: sustainable development and the rise of intelligent machines. They offer great opportunities for new technologies and startups but it is important to balance the needs of industry and those of society, such as by combining Industry 4.0 and Society 5.0. Prof. Sharma also touched on the rapid growth of the Indian startup scene. There are prospects for synergy between Japanese and Indian startups, and between startups and large corporations.



**Dr. Susumu Kajiwara,**  
**Deputy Director-General,**  
**Science and Technology Policy Bureau,**  
**Ministry of Education, Culture, Sports, Science and Technology (MEXT)**

Dr. Susumu Kajiwara spoke about the rise of startups launched at Japanese universities and the improvement of the ecosystem surrounding startups. However, entrepreneurial activity still lags behind other developed countries. The government has therefore implemented programs to foster young entrepreneurial-minded people among undergraduates and young researchers and to create excellent university startups, in cooperation with the private sector, and is fostering closer relations among government, academia and industry. Dr. Kajiwara also talked about the value of Japan and India collaborating and sharing ideas and experiences in relation to startups.



**Prof. V. Ramgopal Rao,**  
**Director,**  
**Indian Institute of Technology Delhi (IIT-D)**

Prof. V. Ramgopal Rao highlighted and welcomed the increased presence of Japanese companies in India, including on university campuses. He also spoke about the increasing number of startups in India, many of which were launched at universities such as the Indian Institute of Technology Delhi (IIT-D). There are strong incubators on Indian university campuses and Japanese students and startups are encouraged to visit them. It may also be worthwhile for Japanese and Indian universities to develop joint PhD programs and explore other opportunities for collaboration.



**Mr. Hiroshi Oikawa,**  
**President,**  
**New Energy and Industrial Technology Development Organization(NEDO)**

Mr. Hiroshi Oikawa explained that Japan is facing a variety of social issues, chief among them a declining birthrate and an aging population, as well as competition from emerging economies. Innovation is key to tackling such social issues and making Japanese industry more competitive.

Mr. Oikawa also noted that the Japanese government is implementing various initiatives to generate innovation, including supporting research and development-oriented startups. One promising area is technology related to welfare equipment for people with disabilities and the elderly.

In addition, Japanese and Indian companies have various complementary aspects that will facilitate collaborative innovation.



**Prof. B. Gurumoorthy,**  
**Chief Executive,**  
**Society for Innovation & Development,**  
**Indian Institute of Science (IISc)**

Prof. B. Gurumoorthy spoke about the Indian Institute of Science's (IISc's) initiatives to foster startups and its track record. In recent years, these startups have also enjoyed growing interest and engagement from Japanese companies. In Prof. Gurumoorthy's view, areas that are ripe for Japan-India collaboration include systems engineering and integration, product engineering, joint startup cohorts for developing healthcare devices, and entrepreneurial exchanges.



**Prof. Hiroyuki Takahashi,**  
**Special Adviser to the President,**  
**Institute of Engineering Innovation,**  
**The University of Tokyo**

Prof. Hiroyuki Takahashi began by outlining the University of Tokyo's history and organization as well as its research and education programs. These programs include support for the creation of startups based on research outputs, such as incubators, networking events, and laboratory spaces, as well as an "Entrepreneur Dojo" program designed to foster entrepreneurship among students. There are also various international exchange programs including the Engineering Summer Education Program India 2020 for Indian students.



**Ms. Lauren Bic Ha,**  
**Associate Vice President,**  
**Technology Development & Innovation Center,**  
**Okinawa Institute of Science and Technology Graduate University (OIST)**

Ms. Lauren Bic Ha pointed out that, despite demographic differences, Japan and India are both faced with a dynamic and changing world driven by advances in science and technology. However, these advances parallel social and environmental challenges centered on people and the planet. New science, ideas, industries and startups are needed to find the solutions to these challenges. Broader partnership between Japan and India, among government, academia and industry, can help make these a reality.



**Mr. Kris Gopalakrishnan,**  
**Chairman,**  
**Axilor Ventures**

Mr. Kris Gopalakrishnan believed that India is an excellent place to try out new technologies and policies, precisely because it is still developing. There is leeway to implement radical solutions and approaches. Japan and India should work together to create such new solutions and be ambitious about it. There are opportunities to scale-up Japan-India collaboration and Japanese investment in Indian start-ups. One prime area for collaboration is the aging population, an issue Japan is tackling now and one that India will face in the future.



**Dr. Koichi Awazu,**  
**Councilor,**  
**Planning Headquarters,**  
**National Institute of Advanced Industrial Science and Technology (AIST)**

Dr. Koichi Awazu shared examples of the National Institute of Advanced Industrial Science and Technology's (AIST's) collaboration with Indian partners. AIST signed a memorandum of understanding with the Indian Institute of Technology Hyderabad (IITH), based on which they have exchanged human resources and conducted joint research on experimental AI technologies. AIST has also established a joint lab with the Department of Biotechnology (DBT) of India for biomedicine and biotechnology research. In addition, this joint DAILAB lab offers technical training to Indian students. Dr. Awazu also pointed out the complementary relationship was the most beneficial factor to the collaboration between India and Japan.



### Panelist Discussion

Following this, the panelists discussed actions to advance Japan-India collaboration in relation to startups. They touched on legal reforms to loosen restrictions on Japanese universities, joint university programs with financial support from industry, the setting of common targets for tackling social issues, joint PhD programs with industry support, the creation of the equivalent of the Israel-United States Binational Industrial Research and Development Foundation, hackathons, and basic research networks, among others.

### Q&A with Audience

The panelists then invited questions from the audience covering topics such as collaboration in pharmaceutical research, empowering women in science and technology, ethical questions around the use of AI in public health, moonshot research, grand challenges, funding for startups, and mutually-beneficial collaboration between startups and large corporations.





## **Session 2: Improvement of the quality of life by utilizing big data and AI**

Advances in technologies like IoT and big data have been accelerating as the digital communication environment continues to evolve. The “Digital India” campaign was launched by the Indian government in 2014 to provide a digital infrastructure to all citizens and bring digital public services to all villages. Although the social requirements differ, India having a young population while Japan’s society is aging rapidly, big data and AI can contribute to improving quality of life in both our countries.

This session will discuss the strengths of each country and how they can cooperate to create a healthy, low-carbon society in areas like health and medical care, transportation, and energy.

### **✚ Topics to be discussed:**

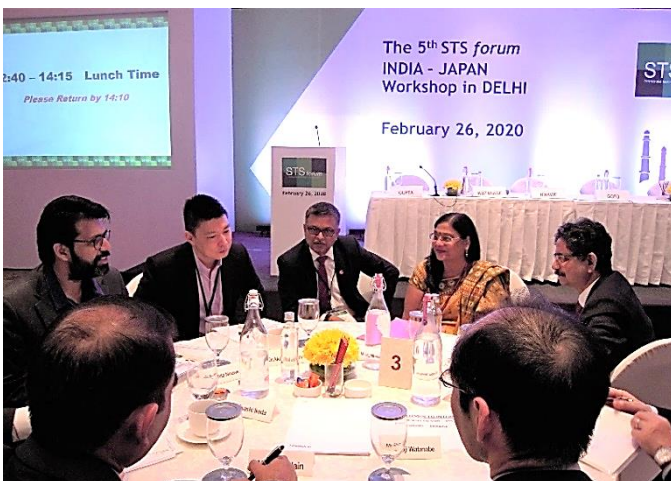
- ✓ Using AI and big data in the healthcare and medical fields
- ✓ Using AI and big data to achieve a low-carbon society
- ✓ Using AI and big data in transportation infrastructure or communications to improve people's lives
- ✓ Our two countries’ strengths and mutual complementarities
- ✓ Examples of success and transformation in our two countries
- ✓ Issues and countermeasures in our two countries



< Session Moderator >

**Mr. Dhaval Gupta,**  
**Executive Director,**  
**Cyber Media (India) Limited**

Mr. Dhaval Gupta moderated the session. He began by pointing out that the utilization of big data and AI to improve quality of life is being widely discussed, not only in India and Japan, but all over the world. Data is the fuel of the future, and data is being powered by AI and machine learning to drive efficiencies and intelligence.





**Mr. Shoji Watanabe,**  
**Deputy Director-General,**  
**Industrial Science and Technology and Environment Bureau,**  
**Ministry of Economy, Trade and Industry (METI)**

Mr. Shoji Watanabe spoke about data-sharing and ethical issues. Data-sharing, both domestically and internationally, is essential to economic and social activity. However, privacy, security and the protection of intellectual property must be ensured. To promote this, the government has introduced the concept of data free flow with trust. In addition, as AI research and AI-based products increase, greater understanding about the ethical considerations is essential. This can only be achieved through international cooperation.



**Dr. Suchita Ninawe,**  
**Scientist 'G' / Adviser,**  
**Department of Biotechnology (DBT),**  
**Ministry of Science and Technology, Government of India**

Dr. Suchita Ninawe talked about the impact of data and AI on healthcare. The Indian government has an initiative to apply AI for promoting affordable and accessible healthcare. It is tackling a variety of diseases such as cancer, tuberculosis, and acute decompensated heart failure, including through early diagnosis. AI can impact people's lives immensely but there is still a long way to go.



**Dr. Yoshimasa Goto,**  
**Vice President,**  
**Japan Science and Technology Agency (JST)**

Dr. Yoshimasa Goto explained that AI is a key pillar of Japan's Society 5.0 initiative to revitalize society and the economy with data and AI. The Japan Science & Technology Agency manages a range of AI-related research projects to advance AI methods, and to help improve quality of life across the world through AI applications including analysis of genomic image information, promotion of autonomous driving, and traffic flow analysis.



**Mr. Partha Pratim Sengupta,**  
**Deputy Managing Director & Chief Credit Officer,**  
**State Bank of India**

Mr. Partha Pratim Sengupta said that AI is essential to the running of the State Bank of India. Furthermore, the Bank holds a rich reserve of customer data, which may yield huge business potential for the Bank. AI will continue to be applied in a wide range of fields to make life better. However, there are concerns as well, such as job redundancy and unemployment, or regulations to prevent misuse or unethical use of data.



**Dr. Hisashi Ikeda,**  
**General Manager,**  
**Global Center for Social Innovation-APAC, R&D Group,**  
**Hitachi, Ltd.**

Dr. Hisashi Ikeda talked about Hitachi's smart life solutions and its efforts to create livable cities. Hitachi is using data and AI to make city services and infrastructure more efficient and better aligned with people's needs. For example, it is implementing an initiative to promote a sustainable society in Matsuyama through industry-academia-government-citizen collaboration and consensus-building.



**Mr. Dipankar Ghosh,**  
**CEO,**  
**Railway Equipment Division,**  
**Escorts Limited**

Mr. Dipankar Ghosh spoke about the democratization of AI. It is not only the top technology companies that can use AI but also small companies, startups, or even regular citizens. AI processing capacity continues to grow, huge amounts of data are being generated, and many tools are freely available. One area that is particularly apt for AI solutions is traffic systems, due to their complexity and difficulty to predict, and the huge amounts of data they generate.





**Dr. Akihiko Iketani,**  
**Head,**  
**NEC Laboratories India**

Dr. Akihiko Iketani believed that a key use of AI is to optimize supply and demand. For example, in transportation, it can be used to forecast passenger demand and optimize the dispatch of vehicles. While people often focus on supply, there is also opportunity on the demand side, such as demand-responsive pricing. Dr. Iketani also believed that, by providing a fresh perspective, Indian people are suited to tackling Japanese social issues, and vice versa.



**Mr. Vikas Jain,**  
**Vice President and Business Head,**  
**Life Sciences,**  
**Tata Consultancy Services Limited**

Mr. Vikas Jain explained how big data and AI are facilitating a paradigm shift in healthcare, from transactional care to continuum care. For example, they can be used to predict health issues and enable early intervention, or to support assisted living by understanding a person's life patterns and identifying abnormalities. In addition, Mr. Jain believed that, rather than reducing jobs, AI will simply change the nature of jobs, as was the case with previous revolutionary technologies, such as automobiles.

### **Panelist Discussion**

Next, a panel discussion was held. First, the panelists considered Society 5.0 and the importance of harmonization of AI and big data standards and regulations, as well as government-financed fundamental research. They also discussed the impact of AI on consumers, such as using data to provide better customer-focused services. Consensus-building activities to complement AI-informed policy decisions was also discussed. The panelists then talked about how the democratization of AI could improve quality of life. They also discussed the importance of gathering the appropriate data when tackling a problem. Lastly, informed consent and transparency around the nature of certain data and the purpose for its use were highlighted.

### **Q&A with Audience**

Afterwards, the panelists fielded questions from the floor and discussed a variety of topics. These include the sharing of confidential data for education purposes, first-party versus third-party data, appropriate funding sources for startups, and how to make better real-time decisions with AI and big data.



## Closing Remarks



**Dr. Ashwani Kumar,**  
**Senior Advocate Supreme Court;**  
**former Cabinet Minister of Law and Justice**  
**former Minister of State in the Ministry of Planning, Ministry of Science**  
**and Technology, Ministry of Earth Sciences**

Dr. Ashwani Kumar delivered closing remarks. He welcomed the growing participation in the workshop each year, with attendees coming from a wide range of a sectors across government, academia, and industry to discuss the use of science and technology in service of mankind. Science and technology are essential to tackling the problems faced by human society.



Much of the current debate around science and technology relates to ethics. Science and technology are ethically neutral. They are dependent on the ethics of the humans using them. That said, some form of benign governance framework is required to ensure that advances in science and technology serve their creators, not the other way around. Much of this subject is still unknown, and further and wider debate is needed.

**Mr. Kanji Fujiki, Executive Director of STS *forum*** also gave closing remarks.

He thanked the panelists for their contribution to the success of the meeting and looked forward to further constructive and thoughtful discussions at future workshops and the annual meeting of STS *forum*.

### **Number of participants;**

	Industry	Academia	Government	Research Institute	Others	STS Staff	Total
Japanese	13	4	8	3	8	5	41
Indian	48	13	9	4	6	-	80
Others	2	-	-	-	-	-	2
Total	63	17	17	7	14	5	123

