

**Speech at Plenary Session “Dialogue between Political Leaders and Scientists”
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Mr. Chairman and distinguished guests,

Thank you for your kind introduction.

I am Akira Amari, Minister of Economy, Trade, and Industry, and a man who has established a record of being appointed as METI Minister three times during a period of one year. I'm sure this would even qualify for the Guinness Book if a Japanese version existed.

There are many cases in the course of progress in science and technology where unexpected stimulus can make a surprising contribution. An example may be a case where the least scientifically oriented person is invited to speak before an audience of scientists, like I am doing today.

I believe we need to overcome three challenges in order for science and technology to renovate our society. One, optimal total management of science and technology. Two, public acceptance through greater communication. And three, to build a global architecture that extends beyond national borders and scientific disciplines.

Let me elaborate on each one of these three challenges.

The first challenge is the optimal total management of science and technology for maximizing social benefit.

One example would be the steady progress of nuclear technology. The Advanced Boiling Water Reactor (ABWR) has been improved in Japan, from the conventional BWR through standardization. The safety of ABWR is about one digit higher than traditional reactors. However, even this advanced nuclear technology would not be put to practical use unless improvements can be made in conventional technology such as earthquake-resistant technology, human error-free technology, and assessment technology for corrosion and cracks.

No matter how innovative the results of individual research may be, progress in a single area alone cannot contribute to social renovation. We need to have balanced development in diversified fields.

I believe total management is essential to integrate the fruits of science and technology for maximum public benefit. Unfortunately, however, there is no single panacea for achieving effective total-management. Some elements required for total-management systems would include a sufficient ability to identify and analyze information and provide leadership and support. We need to make a continuous effort to integrate science and technology with society and appropriately combine the necessary elements to meet the challenge of creating effective total-management systems.

The second challenge is to successfully win public acceptance.

Greater advances in science and technology make it more and more difficult for the general public to understand their substance. People have mixed feelings about science and technology – on one hand, they are excited about the potential benefits, while on the other, they have great concerns about the possible negative consequences.

As a result, unexpected situations may sometimes happen. In July this year, an earthquake of magnitude 6.8 hit the world's largest nuclear power plant, releasing a trace amount of radioactivity into the atmosphere. Experts told me that the radioactive dose was 2.0×10^{-7} mSv (*two times ten to the minus seventh power milli-sievert*) per year, which was too difficult for ordinary citizens to understand. So, I instructed my staff to paraphrase this report in a more understandable way: in other words, the amount was one part in ten million of the radiation that ordinary people are exposed to in their normal daily lives within the course of one year. We made an effort to inform people that the surroundings were safe, despite the incident.

Nevertheless, as a result of many sensational press reports, apparently a football team in Europe cancelled its planned visit to Japan because of needless fears of radioactive contamination which they imagined was similar to the Chernobyl accident. The number of domestic tourists to the distressed area also decreased sharply after the quake.

A highly advanced area of science and technology like nuclear energy must provide not only actual safety but also a sense of safety and reassurance. In order to ensure this sense of safety, we need communication with citizens, sound systems, and operating track record that can win public trust and confidence.

Similar issues can be found in other areas. For example, with the progress of biotechnology such as gene recombination and experiments using embryonic stem cells, there has emerged an enormous gap between what can be done scientifically and what can be socially acceptable. Unless we can properly fill this gap, science and technology will not be able to play an effective and innovative role in society.

Needless to say, the responsibility and role to be played by political leaders are extremely important in this area. At the same time, I do hope that scientists like yourselves will also build and strengthen communication with ordinary citizens.

The third challenge is to create a global architecture that extends beyond national borders and scientific disciplines.

We face various common issues such as energy resource constraints, global warming, new infectious diseases, and food crises. To solve these issues, it is vital to secure an optimal total management of science and technology.

That alone, however, would not suffice to resolve the common issues facing humankind. On top of these efforts, we need to create a common global architecture that can be shared beyond national borders and scientific disciplines. We also need cross-border political leadership and international and interdisciplinary cooperation among scientists and engineers.

When SARS broke out, a network of 200 research institutes was established immediately under the WHO. This cross-border initiative prevented the spread of the disease. I believe this sort of framework can be an effective solution for various issues.

Also, there are cases where it would be effective to enhance cooperation while competing at the same time in some areas. A good example is the research and development of fuel cell vehicles. About 30 companies in Japan, the US and Europe are jointly tackling with common issues they face such as obtaining test run data and reduction of environmental impact. On the other hand, car manufacturers are involved in cut throat competition with each other. This approach would not only benefit businesses but also benefit the users and achieve greater social sustainability. A similar common global framework is absolutely necessary in order to build a low carbon emissions society on a global scale.

To solve these challenges, in addition to the dialogue between political leaders and scientists, each and every citizen in the world has to recognize these challenges and take action that will result in real change.

I believe wisdom is the best tool that we have to meet these challenges. To make the most of this wisdom, I am looking forward to the active involvement of representatives from science, industry and politics or government, not only from your respective professional positions but also from a broader perspective as leaders of our common society.

I am confident that the dialogue in this STS forum will make an important contribution to the future of humankind.

Thank you very much for your kind attention.