



In the future, in order to establish this new policy making process in the Japanese government, it is important to involve researchers from the fields of humanities and social sciences, and promote this project with cooperation from the universities, research institutions and government agencies. In addition, it is also important to develop a career path and nurture talents who can link objective evidence to policy making, i.e., researchers who have knowledge about the policy making process and policy makers who have knowledge about surveys, analyses and data.

Section 3 New Horizons Arising from Dialogues, Mutual Understanding and Participation

What kind of society lies ahead in the future of S&T?

In the survey “Contribution of Science and Technology to Future Society” (the National Institute of Science and Technology Policy) conducted between 2009 and 2010, there are some examples of what the future society will look like (Figure 1-3-8).

● Table 1-3-8 / Examples of Expected Future Society

Examples
1. Society where various diagnostic technologies and systems are appropriately embedded in daily lives so that health maintenance by individuals has started to prevail
2. Society where people can selectively or comprehensively choose the energy they wish to use, and are more actively involved in environmental protection and prevention of global warming
3. Society where people have begun to cope with various disasters brought about by environmental changes
4. Society where working styles incorporating IT are the norms

Source: “Contribution of Science and Technology to Future Society,” National Institute of Science and Technology Policy

Specifically, some examples raised include artificial organs using human cells or tissues created from iPS cells (may be widespread around 2033¹), diagnostic methods for risks of acquiring diseases through genome data (may be widespread around 2023), home energy management system using home communication network (may be widespread around 2019), operation of a disaster prevention and reduction structure constructed by local residents and administrative agencies to provide information and educate people on disaster risks (may be widespread around 2020), virtual office systems to reduce the number of current real office workers by half (may be widespread around 2025). If all these examples come true, we can expect a society that connects S&T with our daily lives even closer than today.

¹ “Widespread” in the survey means “widely used in Japan.”



In this kind of society, there is a possibility that without adequate knowledge of S&T, one cannot lead a fulfilling social life. For example, the ever-developing information and communication technology has changed the way we communicate on a global level with the Internet and mobile phones becoming indispensable in many aspects of our lives, and it will not be long before the majority of the public can make use of electronic trading and remote medical systems. When that happens, people who cannot use IT will not only be “inconvenienced” but also from the point of view of their standard of living, a big gap will be created. Furthermore, it is expected to create even greater impact in social systems such as the “office,” “school” and “community.”

Nevertheless, as we have seen in the Introduction and Chapter 1, S&T has both “lights” and “shadows.” The recent earthquake has shown us that regardless of the kind of S&T, risks always come with new kinds of S&T, and can generate a lot of public anxieties. In addition, the public also hopes to achieve spiritual fulfillment from S&T.

The ethical, legal and social issues shown in Section 3, Chapter 1 – debates on whether “brain death” is real death under the current new S&T, the pros and cons of pregnancy from the embryo of a third person or frozen sperm after death with developments in reproductive technologies, problems of DNA diagnostic technology and privacy protection, the stance on tissue engineering research using embryonic stem cells - indicate many issues still remain. These problems include issues more than those categorized as ELSI. The closest problem is life-prolonging treatment. The development of life-prolonging treatment technology presents an opportunity for each and every Japanese to ask themselves, “How do I want to live, and how do I want to die?” It also presents an opportunity to question its new stance in a world where living styles and medical needs are becoming more diversified. At the same time, as tissue engineering becomes more common, the public may also possibly change their way of thinking about their own bodies.

In this way, the developments of S&T seem to change society and human beings such as our lifestyles, our lives and bodies. From now, when we talk about the “relationship between society and science and technology,” it is not enough to stop at “social acceptance of technology,” because what kind of future society the public hope for will become more important. The hint to the kind of S&T that can fulfill the public spiritually may be hidden here.

In Chapter 2, we saw how important it is for researchers, engineers, the government and research institutions promoting S&T to actively carry out dialogs with society and the public in order to understand and work on the current needs of society, and that the base for such activities is S&T communication activities. In such dialogs, it is not enough just to talk about the abundance and practicality of things, it is also important to convey the never-give-up attitude of researchers and technicians as they search their way in the dark for answers during the research process. Sharing basic research goals and values that enrich human’s intellectual assets can lead to a spiritually fulfilling experience, and give the public a big dream to live on, as shown by the “Hayabusa.”

As is clear by now, the circle of S&T communication is expanding both domestically and abroad. There are many examples where the public joins researchers and technicians to use S&T to accomplish regional targets, and where the public participates in formulating policies on S&T in various ways. The reach of S&T communication activities, including the grass-roots movement, to all corners of Japan can raise the interest and concern of young children in S&T, and also help adults to frame S&T as a problem that they should care about.



In Chapter 3, we saw how efforts to draft policies based on the voices of society are being carried out – dialogs between policy makers and the public through methods such as “jukugi,” and efforts to formulate consensus that take into consideration the social impact brought about by S&T policies based on technology assessment. Also, “Science of Science, Technology and Innovation Policy” can be considered as a communication tool because it provides “objective evidence” about policies to society and the public, and as a result, further encourages public participation in the formulation process of S&T policies. Along the way, the efforts of various organizations such as NPOs which will support public participation and shape the will of the public to take part in policy making also become very important. At the same time, to provide appropriate information to society and the public and to implement appropriate policies based on objective evidence, it is important to create a better relationship whereby researchers and engineers can interact beyond their specializations and understand each other, and where researchers and engineers can interact with political and administrative personnel and understand each other.

It has been pointed out that the government has up till now, been prone to conduct one-way communication whereby they seek understanding from the public on government efforts. In the future, the main point of a policy should be for the government, researchers and engineers to agree to release appropriate information, so that these people involved in S&T can have sincere “dialogs” with the public, and based on “mutual understanding,” “participate” in the policy making process for science, technology and innovation in order to realize better S&T governance.