

Wrapup Panel (Wednesday, November 10)

Comment by Hiroshi Inose

1. The Russian Writer Tolstoi, as I remember, wrote in his famous novel "Anna Karenina" that happy families are all alike, but unhappy families are all different. Both the U.S. and Japan, as I see them through the presentations and discussions at this meeting, have a variety of opportunities and challenges in their science policy issues. However, these opportunities and challenges seem to be quite alike, although there may be some time lags with regard to certain challenges, notably the constraint in or lack of appropriate budgetary support by the government for university research. At the time when we Japanese feel that after crawling through a very long and dark tunnel for the last fifty years, we are noticing a dim light at the far end of the tunnel, you Americans seem to feel that you are getting into darkness. Nevertheless, generally speaking, I would say that both countries belong happy families so far as science policy matters are concerned.
2. Japan has been suffering from shortage of government support for university research for the last 50 years and by the time when signs of improvement in this respect have become visible, the U.S. is said to start facing similar problems. However, no matter how much Japanese government support for university research increases, and no matter how much U.S. government support for university research, decreases, there still will be a substantial gap between Japanese and U.S. government support in absolute values. Therefore, in both countries, continuing efforts in acquiring societal support or consensus in support of university research should be pursued.
3. We must stress the importance of balancing immediate or short term needs with medium and long term technological possibilities, or balancing market driven R&D with curiosity oriented R&D. Unless pursuing medium and long term technological possibilities, the sustained economic growth of both countries will be in jeopardy, and unless maintaining curiosity, the horizon of scientific knowledge in both countries will never be extended.
4. In the mean time, we observe much similarities in science policy in two countries in the way of placing priorities on several important issues. Questions raised by Prof. Corson well represent such similarities. The issues include:
 - 1) Integration of science and technologies with social sciences and humanities. Technologists in particular, should know more about the society to which their achievements provide impacts, and sociologists should know more about technologies as their own tools to accomplish their goal.
 - 2) Training of well educated resident workforce and providing continuing professional education especially in the area of basic sciences and high technologies. In an era in which life expectancy is close to 80 years, a grand design for human life time should be established to permit more senior citizens to contribute more actively, especially in science and technology.
 - 3) Enhancing university and industry collaboration through increased mobility of researchers and scientific information, as well as sharing large scale research facilities, etc.

- 4) Deploying powerful computer communication networks and databases to form solid infrastructures for promoting university research.
5. Another potential area for U.S. Japanese collaboration is conversion of military technology and industry to civilian technology and industry. although Japan has no substantial military technology and industry at this moment, Japan has invaluable experiences of such conversion as the result of loosing the Second World War. A few month ago, when I met Mr. Saintsbury, the British Minister of Industry, he inquired why Japan surpasses in international market in three areas namely, automobiles, cameras, and electronics and communications. In reply, I told him the following. Permitting an over simplification, such outcome is owing to the fact that we lost the Second World War. More specifically, during the War, Japanese military placed priorities in three major areas, namely, military aircraft, radars and military communications, and optical weapons, so that majority of competent engineers and managers were concentrated in these three areas. The end of the War, forced these people to shift from military to civilian industries. As a result, aircraft engineers mostly moved into automotive industry, radar engineers moved into consumer electronics and telecommunications industries, and optical weapon engineers moved into camera industries. Now that the cold war was over, not only CIS countries but also western military powers including the U.S. should seriously pursue conversion from military to civilian industries.
6. If U.S. can be successful in such conversion, the U.S. can afford to improve Medicare, transportation, education and other problems the U.S. is facing. Not only that, the U.S. can shift a large number of talented managers and engineers from military industry to civilian industry and thereby can strengthen her international competitiveness. U.S. needs more of their major leaguers to play in civilian industry arena to evenly compete with the Japanese counterpart, because almost all Japanese major leaguers are in civilian industry.
7. U.S. and Japan can also be able to collaborate together in tackling global environmental problems. In the past, when air pollution by automotive emission became serious societal problem, Senator Musky tried to enact his pollution control law which was unfortunately turned down. While Japan picked up this, and succeeded to enact similar regulations. As the result, Japanese automotive industries developed clean engines that strengthened their international competitiveness, and large cities in Japan regained clean air. The U.S. initiative and the Japanese endeavor of this sort can be regarded as an important lesson for tackling global environmental problems.
8. Scientific and societal background in the U.S. and Japan have been and will be changing rapidly in the years to come, and so as our relationship with the rest of the world. Perhaps the best way in following up and hopefully leading ahead of such changes will be to continue the congregations of wisemen of both countries, like this meeting, in regular internals so that everyone can keep abreast of the issues to be addressed at and possibly to be able to find out solutions.