See this page also at <http://tinyurl.com/d2b5cc>.

By the education nature, I have not met any negative opposition to our GUS and GCEPG projects yet, but it has been very difficult to locate appropriate champions for these projects, especially in developing countries, because of unawareness of benefits of advanced Information and Communication Technologies (ICTs), funding and bureaucratic procedures, etc. However, on the other hand, my sagas of extending predecessor of Internet to Japan and deregulating the Japanese telecom policies for the use of email and others are as follows.

6.1 Extension of Telenet to Japan:

As soon as the Telenet, a commercial version of ARPANET, was opened in the summer of 1976, I pioneered the "closing digital divide" with substantial time, effort and private fund as extending U.S. data telecom networks to Asian countries, particularly to Japan, and deregulating Japanese telecom policies for the use of email. This triggered the de-monopolization and privatization of Japanese telecom industries. This movement has later been emulated in many other countries, as having more than 1.3 billion email users around the world nowadays. American and other countries' university courses now reach many developing countries.

This extension effort met with much opposition from the U.S. firms who previously encountered difficulties in extending their time-sharing computer services to Japan. My petition to the US Federal Communications Commission (FCC) for extension of Telenet to Japan was to demonstrate to Japanese how networking could increase intellectual capital, decrease the cost of communications, and increase overall efficiency. It would also reveal to Japanese society and businesses how ridiculous and un-empowering Japanese telecommunications policies were. The FCC finally allowed the extension of Telenet to Japan, as a demonstration of the urgency with which the FCC's determination considered my petition and contention seriously. The extended network of Telenet provided Japanese institutions with services of many U.S. data bank companies. Consequently, the extension of Telenet to Japan was an instant success (See Chapter 1 of Utsumi, Draft of Proposed book).

6.2 First Global Peace Gaming in Normative (Qualitative) Mode:

After attending the 1972 SCSC in San Diego, California, I visited Professor Bob Noel of the Political Science Department of the University of California in Santa Barbara, who was conducting a political gaming on international affairs using ARPANET. He assigned several different schools to act as the governments of the United States, Soviet Union, Japan, China, etc. Students had to study about the assigned countries before the start of the game.

I inquired about the actor for Japan, and was told that it was the University of Southern California. I remarked that: "However hard Americans may study about Japan, they cannot think as Japanese, since they eat steak with knife and fork while Japanese eat noodles with chopsticks." So I proposed that Professor Noel invite the University of Tokyo to play the role of the Japanese government. Thus was born the original idea of Globally Collaborative Peace Gaming. This was to align with the Iron Rule #1 of simulation, i.e., "Make simulation close to SIMULAND as much as possible."

In the spring of 1973, I conducted the world-first global "Peace Gaming" with Professor Noel with the use of e-mail over computer networks. It was a "normative" gaming based on exchanging diplomatic e-mail messages without the use of quantitative computer simulation models. American universities sent their messages through ARPANET and overseas universities through GEISCO (a GE's time-sharing service firm).

Students acted as the heads of states and cabinet members of assigned countries. All messages were accumulated and re-distributed by a node at the University of California in Santa Barbara. The scenario designed by Professor Noel assumed an international crisis with a border incident between Iran and Iraq – which actually happened about half dozen years later. The Japanese team sent their messages to the United

Nations team, asking to make the Straits of Malacca an international zone to secure oil flow from the Middle East to Japan. They also asked the U.S. and Soviet Union teams to withdraw their naval fleets from the Pacific and Indian Oceans, respectively. Professor Jonathan Wilkenfeld of the University of Maryland was a graduate student under Professor Noel at that time. He then continued this normative exercise into his International Communication of Negotiation with Simulation (ICONS) at the University of Maryland <http://www.icons.umd.edu/>.

6.3 De-regulation of Japanese Telecommunications Policies for the Use of E-mail:

Unfortunately, this exciting global gaming had to be terminated upon instructions from KDD (Kokusai Denshin Denwa, the Japanese overseas telecommunications authority). I then found fine prints in the KDD's user manual on the Telenet's extension line, prohibiting the use of e-mail. This was due to the Japanese telecommunications regulations, which strictly prohibited message exchange through a computer without changing its contents. However, a node in Santa Barbara, California, performed the message exchange, which was clearly outside of the Japanese jurisdiction. I thought this was absurd.

Beforehand of this incidence, I asked Professor Jack Pugh of Massachusetts Institute of Technology (M.I.T.) to install his DYNAMO simulation language for System Dynamic simulation modeling into GE's GEISCO so that I could use it from Tokyo through a time-sharing terminal. After the KDD's instruction mentioned above, I received a message from GEISCO/Tokyo office requesting information how to use the DYNAMO in GEISCO. The message was sent from a fellow in Oslo, Norway, who worked on the "Limit to the Growth" project at the M.I.T. Recalling the KDD's instruction, I asked them why such message exchange was possible. Their reply was because the message was sent from GEISCO/Oslo office to GEISCO/Tokyo office, i.e., within the same company. I therefore thought that this was patently unfair.

This KDD's prohibition of email negated my previous effort of extending Telenet to Japan, since e-mail would be the most convenient means of communication among game players. So, I chose to work through the U.S. government on the de-regulation of the Japanese telecommunications policy for the use of e-mail. The late Commerce Secretary, Malcolm Baldridge, kindly took this issue as one of three items for discussion as Japan's "Non-tariff Barriers" when he visited Tokyo in October 1981 (Fig. 4.3). This was the beginning of fierce US/Japan trade (including automobile) battles in the following years.

My efforts, however, encountered severe opposition from the Japanese Ministry of Post and Telecommunications (MPT), and of course KDD, which was the semi-governmental monopoly at that time. This was due to the difficulty of "mind-change" from circuit-switching technology for analog telephony to packet-switching technology for digital data communications. Another reason was that almost 60% of KDD's revenue was from Telex, which worldwide networks were just about completed with huge investments around that time. Lo and behold, their financial status dropped into "red" a decade after I succeeded with the de-regulation effort! In a sense, I acted as the so-called "Creative Destruction," a famous word by Joseph Schumpeter.

My effort also triggered the privatization of Japanese telecommunications industries and de-monopolization of the Nippon Telegraph and Telephone (NTT), the world's largest corporation, and KDD. Thanks to these privatization and de-monopolization, Japan now has the world most advanced broadband Internet. Incidentally, Japanese Ministry for Posts and Telecommunications (MPT) was the most formidable bureaucratic bastion at that time.

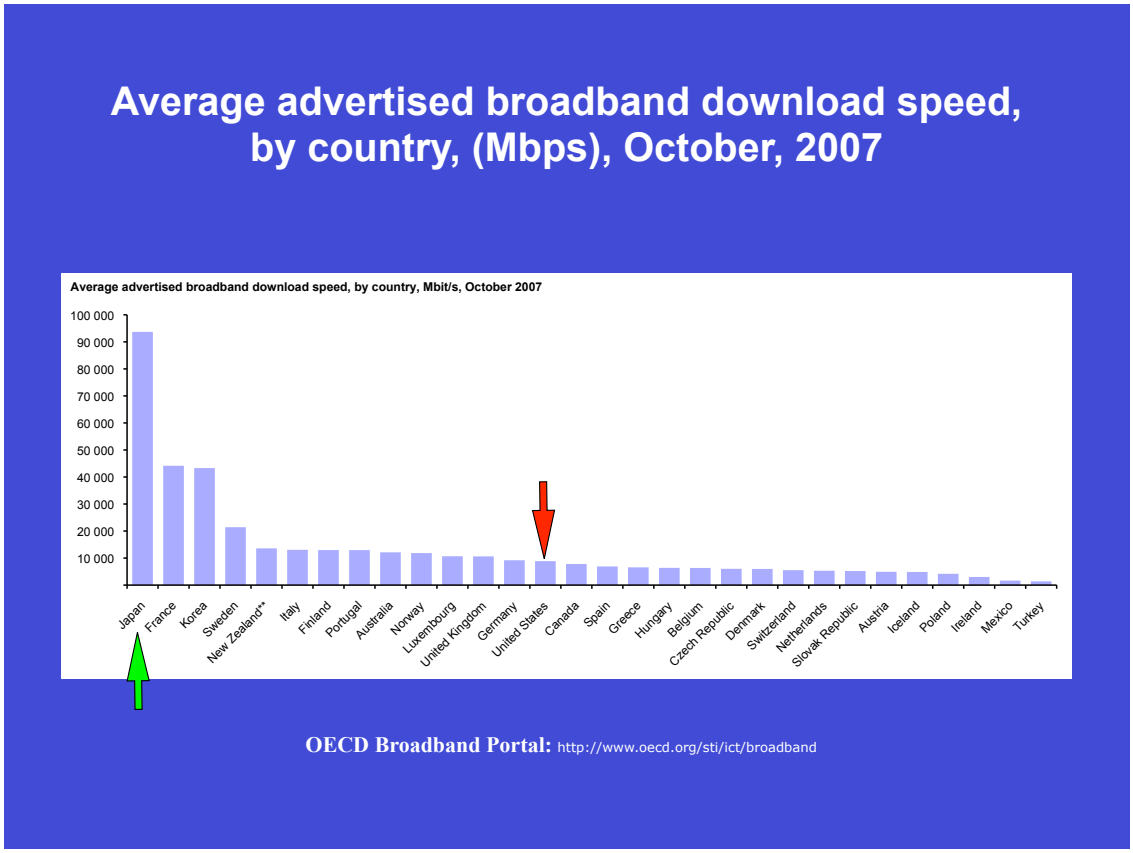

Fig. 6.1: Average advertised broadband download speed, by country
<Average advertised broadband download speed, by country, (Mbps), October, 2007.pdf>
<http://tinyurl.com/dmxavb>

6.4 Idea of Distributed Computer Simulation System:

The well-publicized book, *The Limit to the Growth* (which was the outgrowth of the book *World Dynamics* by Prof. Jay W. Forrester of Massachusetts Institute of Technology (M.I.T.) and my professor) indicated interactions of population, industrialization, agriculture, resources, and pollution on a global scale. Some said that the publication of this book triggered the first oil shock in the early 1970s and changed the world economy.

On the other hand, the book received severe criticisms that appeared in many journals and newspapers. The main contention was on the credibility of the data they used, i.e., how a group of only a few scientists could claim that they knew everything of the world. I thought at the time, why not take the motto of the Greyhound Bus Company, "*Leave the Driving to Us*." Namely, each participant at appropriate locations should construct the sub-models of their individual sectors and countries and then connect all of their sub-models via telecommunications as if their total acts as a single model. The experts of those sectors and countries could bring credible data and model structure. Thus was born the idea of a distributed computer simulation system through a data telecommunication network similar to an analog computer configuration, as corresponding to each of sub-models to components of the analog computer, which would be processed in parallel fashion.

References:

Takeshi Utsumi, Draft of Proposed Book, **"Electronic Global University System and Services"** <http://tinyurl.com/27ykrf>