Fostering Global Leaders with Peace Gaming

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1. Introduction:

Economic interdependence among nations and cultures is spawning a global economy. Globalization also highlights clashes of divergent cultures and belief systems, both political and religious. If global peace is ever to be achieved, global-scale education, with the use of the modern digital telecommunications, will be needed to create mutual understanding among nations, cultures, ethnic groups, and religions. The Internet is the future of telecommunications and can be a medium for building peace.

Alleviating global warming and attaining global peace are the most urgent, complex and confrontation prone problems of our time, since crashes and conflicts of interest (e.g., shortages of oil, food, water, natural resources, etc., to name but a few) are getting ever more fierce year after year with acceleration of globalization and manifold impacts of global environmental changes.

In order to avoid devastating and violent confrontations in the coming years, we have to create appropriate mechanism to understand their causes and prepare our youngsters to circumvent such catastrophe. This would be the capacity building of the so-called would-be decision-makers, who would cope with them with their thoughtful action and wisdom, i.e., "to have the conscious and collective human control of the guidance of law which we call democracy" with the maximum use of the advanced Information and Communication Technologies (ICTs) of Internet. This is to prepare our world moving from interdependence to an integrated global community with shared benefits, shared responsibilities and shared values.

2. Intercultural Understanding for Global Peace:

Those confrontations are often deeply rooted in cultures and traditions. The first task to attain global peace is to have mutual intercultural understanding among them.

2.1 What is peace through culture?

The word "culture" is derived from the two words "cult" and "ur." "Cult," of course, means cultivation. "Ur" is an ancient Chaldean term meaning "light" -- the creative aspect of the universe. Hence, culture is literally the cultivation of creativity.

Peace is more than just the absence of war. Just as it takes acts of war to make war, it takes acts of peace to make peace. Peace, then, is a structure of positive acts of creativeness that are carried out in a spirit of high idealism.

> "Genuine peace must be the product of many nations, the sum of many acts. It must be dynamic, not static, changing to meet the challenge of each new generation. For peace is a process -- a way of solving problems."
>
> John F. Kennedy

> "Peace is a never-ending process, the work of many decisions by many people in many countries. It is an attitude, a way of life, a way of solving problems and resolving conflicts... It requires us to work and live together."
>
> Oscar Arias Sanchez; Nobel acceptance speech, 1987

2.2 Comparison of Eastern and Western Cultures

Eastern Culture	Western Culture
Polytheism	Monotheism
Truth, Goodness, Beauty	Justice, Equality, Freedom
• Japan: Champion	• USA: Champion
• Random	• Logical
• Intuitive	• Sequential

• Subjective	• Objective
• Looks at wholes	• Looks at parts
• Holistic	• Rational
• Synthesis	• Analytical
• Art and Literature	• Scientific
• Emotional thinking	• Critical thinking

Table 1 <http://tinyurl.com/6erbyp>

Both cannot and should not dominate other, but should have close dialogues between them.

Global University System (GUS), which will be mentioned below, is adopting philosophies and principles that emphasize trans-cultural and moral values rather than ideologies. The priority is in academic freedom and quality in education.

2.3 Hierarchy of Civilization, Culture and Religion:

Hierarchy of civilization, culture and religion may be depicted as follows (Figure 1);

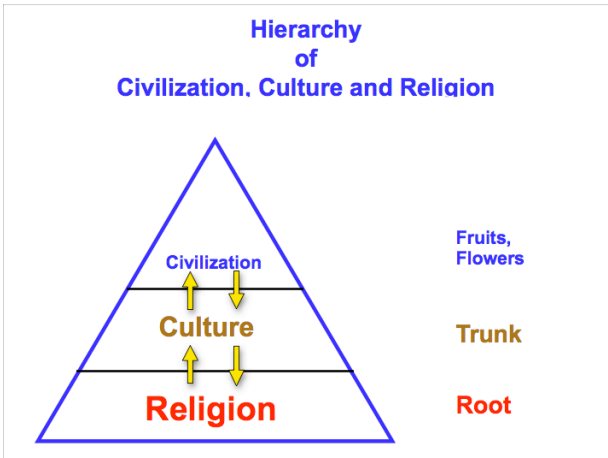


Figure 1 <http://tinyurl.com/6pogjq>

Religion may correspond to root of a tree, culture to trunk and civilization to flowers and fruits. Japan could be a cherry tree, China a peach, and America an apple. We need a cross pollination for jointly creating a new global culture and civilization of a global society in the knowledge age of the 21st century by youngsters around the world.

Their collaboration across boundaries of continent and ocean, and of nation and culture would bring new age, as similar to the Golden Age of Spain when Jews, Christian and Moslem co-mingled and co-existed to create Renaissance out of the Dark Age. Our new age would enable us to create a new civilization, say, neo-Renaissance with the appropriate use of advanced ICTs by all the people of the world, not only those three religions, but also those of orient in Asia and the Pacific, and Africa, etc.

3. Global University System (GUS) Project:

The Global University System (GUS) [Utsumi, et al, 2003] aims to build a higher level of humanity with mutual understanding across national and cultural boundaries for global peace [Varis, et al, 2003]. The GUS is a worldwide initiative to create advanced telecom infrastructure around the world for global e-learning and e-healthcare/telemedicine (Figure 2). GUS aims to create a worldwide consortium of

educational and healthcare institutions to provide all world citizens with special emphasis on the underdeveloped countries with access to 21st Century education and healthcare via broadband Internet. The philosophy of GUS is based on the belief that global peace and prosperity would only be sustainable through education. Education and job skills are the keys in determining a nation's wealth and influence. The aim is to achieve "education and healthcare for all," anywhere, anytime and at any pace. A GUS education thus will promote world prosperity, justice, and peace, based on moral principles rather than political or ideological doctrines.

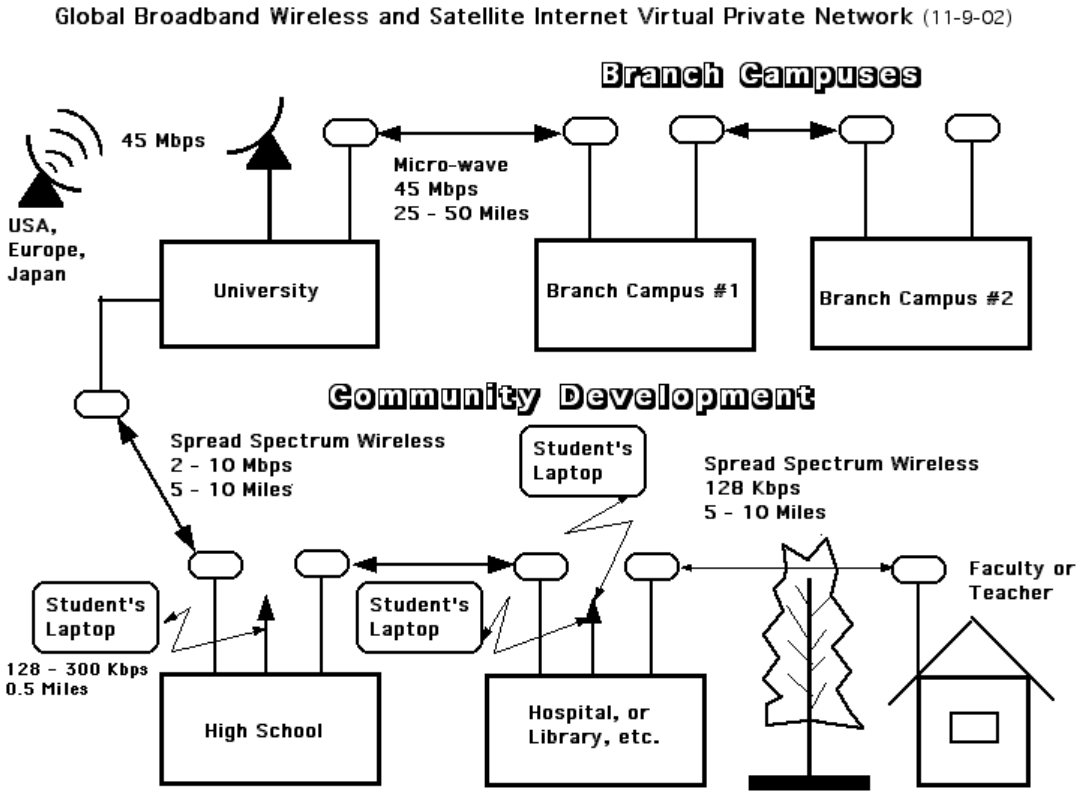


Figure 2 <http://tinyurl.com/62sh2t>

The GUS [Al-Azab_Utsumi, 2007-a] helps higher educational and healthcare institutions in remote/rural areas of developing countries to deploy broadband Internet in order to close the digital divide. Learners may take courses from different member universities around the world, obtaining their degree from the GUS, thus freeing them from being confined to one academic culture of a single university or country. The GUS program is a comprehensive and holistic approach to building smart communities in developing countries for e-learning and e-healthcare/telemedicine.

These institutions also act as the knowledge center of their community for the eradication of poverty and isolation through the use of advanced ICTs. Those institutions affiliated with GUS become members of the GUS/UNESCO/UNITWIN Networking Chair Program at the University of Tampere, Finland. We envision interlinking those members through broadband Private Virtual Network to conduct mega-videoconferences as well as related research project.

The officers of the GUS are: P. Tapio Varis, Ph.D., Acting President, (University of Tampere, former rector of the United Nations University of Peace in Costa Rica); Marco Antonio Dias, T.C.D., Vice President for Administration, (former director of Higher Education of UNESCO); Takeshi Utsumi, Ph.D., Founder and Vice President for Technology and Coordination, (Chairman of GLOSAS/USA) [Utsumi, 2007-c]. The trustee members are: Dr. Pekka Tarjanne, (former Director-General of the ITU) and Dr. Federico Mayor,

(President of the Foundation for Culture of Peace and a former Director-General of the UNESCO).

3.1 The 21st Century Version of Fulbright Exchange System:

As said above, the ultimate goal of our GUS is to attain global peace. For this, intercultural mutual understanding is vital necessity. The Internet is the future of telecommunications and can be a medium for building peace. We then devote our activities on the proliferation and the use of advanced ICTs as much as possible. One of first steps could be enactment of the so-called "the 21st Century Version of Fulbright Exchange System," which was firstly proposed by Prof. Hironaka, the former President of Hiroshima University in Japan. Our GUS is to follow his suggestion with intensive use of advanced ICTs, so that our learners would have more mobility for their job placement around the world along with the rapid advancement of globalization – see the official information from the Japanese Ministry of Foreign Affairs <http://preview.tinyurl.com/2j5amh> and <http://preview.tinyurl.com/32zv4h>. We are currently forging ahead this program between TOBB Economic and Technology University in Ankara, Turkey and University of Tampere in Finland [MOU_TOBB_Tampere_GUS].

3.2 Finnish Noblesse Oblige Project:

Our Finnish colleagues attained the world #1 ranking in education, vocational training and ICTs fields by DAVOS, OECD, UNESCO, etc. We are very much honored and privileged to have been able to undergird their activities, especially in the age of globalization of this 21st century. On the other hand, Japan's ranking in the fields by those organizations are slipping down year after year recently, since they haven't overcome yet "The biggest barrier for new development of Human-Centric Knowledge Society is our Industrial Age mindset!" [Kaisa Kautto-Koivula, et al, 2003]

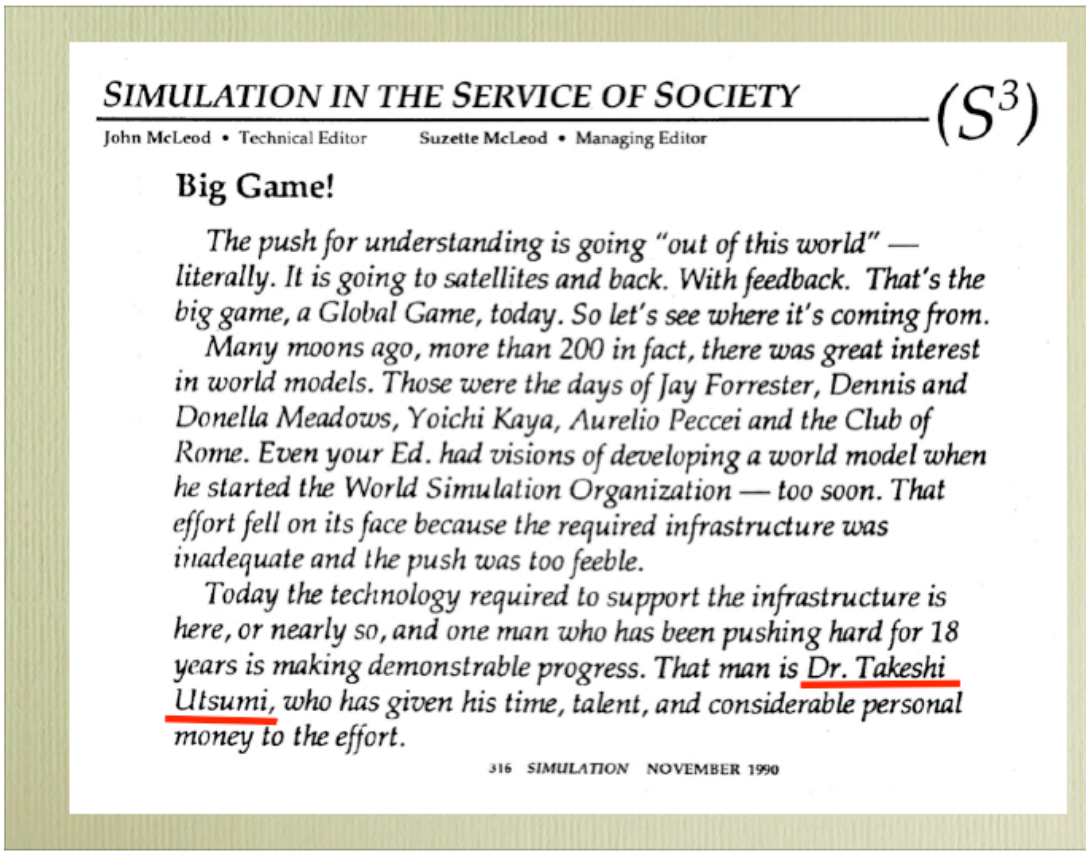
Upon Dr. Utsumi's suggestion, our Finnish colleagues are now initiating the "Finnish Noblesse Oblige" Project to have GUS spreading the know-how of how and why Finnish accomplished such high rankings – starting to Japan as the first target country for preventing further decline of their rankings and national power, and later to various developing countries.

4. Peace Gaming Project:

4.1 Globally Collaborative Environmental Peace Gaming (GCEPG) Project:
<http://tinyurl.com/k2c7a>:

In ancient time, priest or shaman assisted the decision-makings of kings or rulers in Inca, Egypt, India, China, Mesopotamia, etc., as predicting the "celestial movements" — which led to the astonishing achievements of mathematical development even for today's astronomers. Future leaders of global village need to have the capability of understanding the "computer simulation" of socio-economic-environmental system, since it will assist them with rational analysis and critical thinking basing on "facts and figures" -- rather than the political "illusions."

This is the tenet of our GCEPG project (which was initiated by GLOSAS/USA in early 1970s [Utsumi, 2003] [Utsumi, 2007-b] (Figure 3)) with a globally distributed computer gaming/simulation system (Figure 4) is to help decision makers construct a globally distributed decision-support system for positive sum/win-win alternatives to conflict and war, particularly focusing on the issues of environment and sustainable development in developing countries.



SIMULATION IN THE SERVICE OF SOCIETY (S^3)

John McLeod • Technical Editor Suzette McLeod • Managing Editor

Big Game!

The push for understanding is going "out of this world" — literally. It is going to satellites and back. With feedback. That's the big game, a Global Game, today. So let's see where it's coming from.

Many moons ago, more than 200 in fact, there was great interest in world models. Those were the days of Jay Forrester, Dennis and Donella Meadows, Yoichi Kaya, Aurelio Peccei and the Club of Rome. Even your Ed. had visions of developing a world model when he started the World Simulation Organization — too soon. That effort fell on its face because the required infrastructure was inadequate and the push was too feeble.

Today the technology required to support the infrastructure is here, or nearly so, and one man who has been pushing hard for 18 years is making demonstrable progress. That man is Dr. Takeshi Utsumi, who has given his time, talent, and considerable personal money to the effort.

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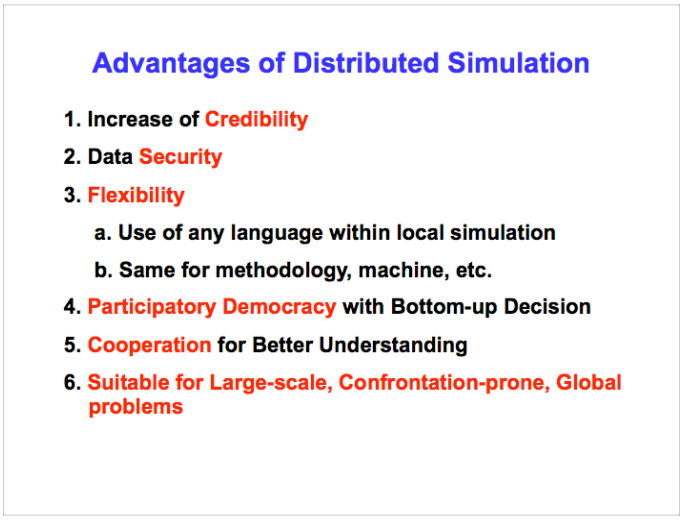
Figure 3 <http://tinyurl.com/628f3z>



Advantages of Distributed Simulation

1. Increase of Credibility
2. Data Security
3. Flexibility
   a. Use of any language within local simulation
   b. Same for methodology, machine, etc.
4. Participatory Democracy with Bottom-up Decision
5. Cooperation for Better Understanding
6. Suitable for Large-scale, Confrontation-prone, Global problems

Figure 4 <http://tinyurl.com/5s6nly>

The idea involves interconnecting experts in many countries via the global Internet to collaborate in the discovering of new solutions for world crises, such as the deteriorating ecology of our globe, and to explore new alternatives for a world order capable of addressing the problems and opportunities of an interdependent globe — particularly with the use of cause-and-effect diagram of system dynamics methodology for clear understanding of interrelatedness among various international phenomena (see an example in Figure 5). Gaming/simulation is the best tool we have for understanding the world's confrontation prone problems and the solutions we propose for them. The understanding gained with scientific and rational analysis and critical thinking would be the basis of world peace, and hence ought to provide the basic principle of global education for peace.

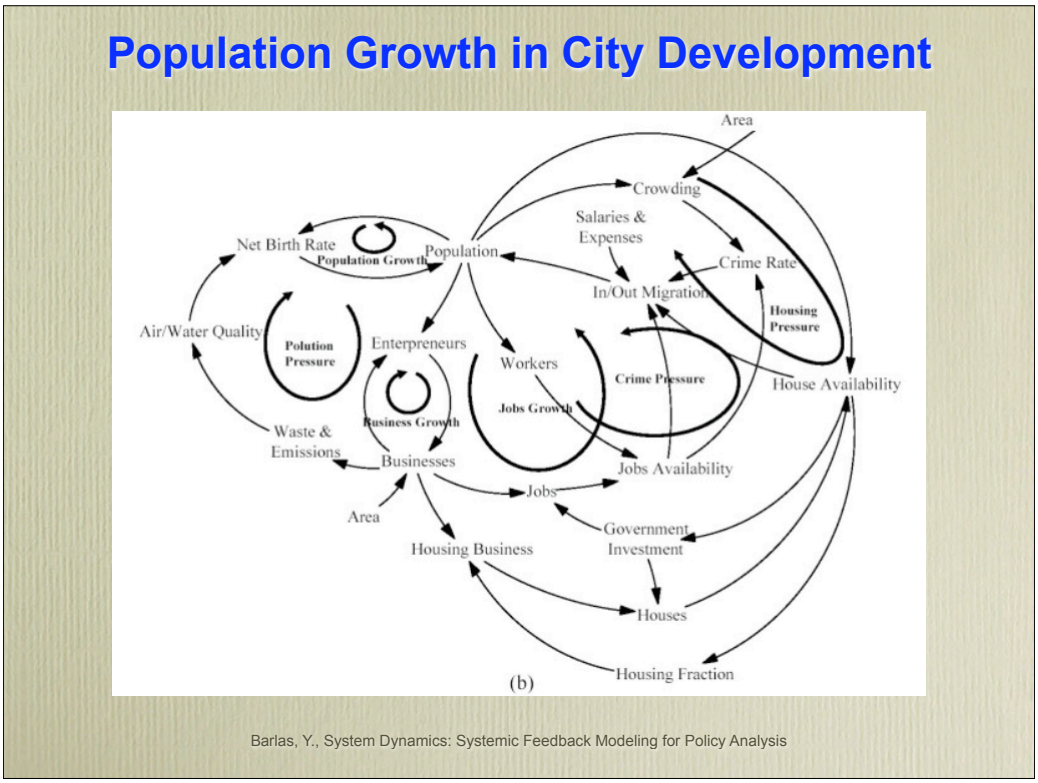


Figure 5 <http://tinyurl.com/5lmhd6>

With global GRID computer networking technology (which concept Dr. Utsumi initiated [McLeod, 2000]) and Beowulf mini-super computers of cluster computing technology, we plan to firstly develop a socio-economic-environmental simulation system and then a climate simulation system in parallel fashion, both of which are to be interconnected through broadband Internet in global scale (Figure 6). This two-tier system will ensure comprehensive system for each by their experts.

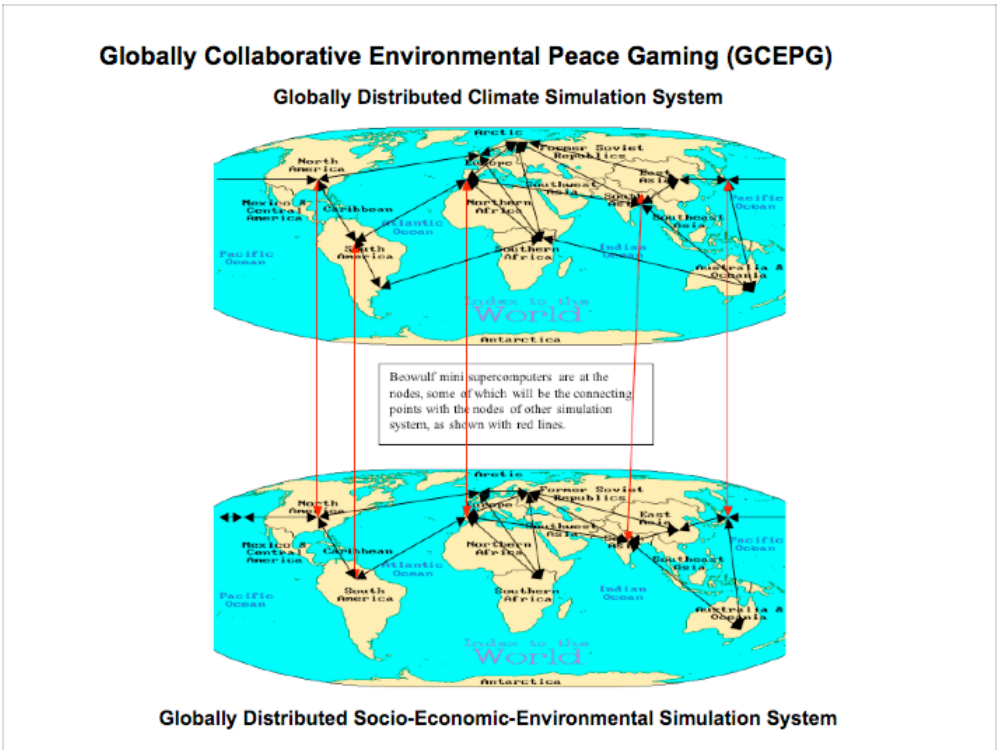


Figure 6 <http://tinyurl.com/6ao57x>

4.2 Global Ring Network for Advanced Applications Development (GLORIAD):

The excess capacity of the Global Ring Network for Advanced Applications Development (GLORIAD) fiber-optic communication network (Figure 7), which already has a node in Novosibirsk, Siberia, will be available for our use after appropriate agreements with the Siberian Branch of the Russian Academy of Science. This currently has 622 Mbps, and soon to be upgraded to 2.5 Gbps in the near future.

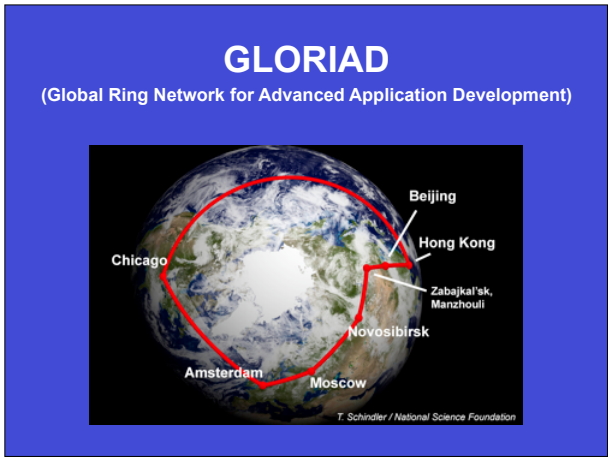


Figure 7 <http://tinyurl.com/6rorlb>

4.3 Global Socio-Economic-Energy-Environment Development (GSEEED) Project:
<http://tinyurl.com/337nrn>

The GSEEED Project [Utsumi, 2007-d] is a variation of and the initiation of the GCEPG. The quantitative policy analysis of globally collaborative GSEEED Project will focus on the sustainable development in Japan, the US, China, Russia, Kazakhstan, and many other relevant countries.

The initial focus on energy security will be on the global interrelations and interdependencies among those countries with the deployment of a gas pipeline from Tomsk, Siberia to China, and the construction of hydroelectric dam in the Republic of Altai, Siberia where there are five UNESCO World Heritage sites which draw increasing number of tourists (400,000) into a small town of Gorno-Altaisk with only 9,000 residents. This gas pipeline will certainly affect socio-economic developments of Siberia, China, and hence the ones of Japan, the US, Europe and others. Japan will also increasingly depend on the energy (oil and gas) supply from Russia and uranium from Kazakhstan.

This GSEEED Project will then demonstrate integrated and synergistic approach among grassroots, government, university, stakeholder, etc. Use of graphic info modeling/mapping and potential "peace gaming" (*) on key issues and solutions will assist each group's ability for standardized data gathering and situational analyses, projecting out possible outcomes for more informed decision making and activities. It brings together most sophisticated university-based mathematical modeling techniques and experts and regular people who can then more easily see—at a glance--how issues and outcomes can impact and interact each other.

> (*) which term Dr. Utsumi coined more than 35 years ago. War gaming is to win the war once when it happened, and peace gaming is to avoid the occurrence of war (Figure 8). Avoiding war is much cheaper than waging war. Our "peace gaming" of GCEPG/GSEEED Project might be equivalent to the scale of Pentagon's "war games," as to contribute to the alleviation of global warming and hence attaining global peace.

Figure 8 <http://tinyurl.com/6ejqqp>

This project will train local experts for leadership development, in relation to strategic use of technologies and cooperation among stakeholders for more effective advocacy, informed policy, public understanding and participation and concrete community development.

We will then create the Center for Conflict Resolution (CCR) in various countries for conducting the following two-tier system as utilizing our GCEPG/GSEEED project approach;

a. One for training young would-be decision makers for understanding interwoven world phenomena with rational analysis and critical thinking, and then in crisis management, conflict resolution, and negotiation techniques basing on "facts and figures" and
b. The other for helping decision makers constructing a globally distributed decision-support system for positive sum/win-win alternatives to conflict and war.

Each GUS of various countries will maintain the sub-models of their countries autonomously – along with construction and maintenance of its databases, modification of their sub-models, and supply of game players in cooperation with their overseas counterparts through the global Internet.

See ANNEX I of <http://tinyurl.com/337nrn> for the list of partners of this GCEPG/GSEEED project – [See also MOU_Polytechnic_GLOSAS].

4.4 Globally Collaborative Innovation Network (GCIN):

The essence of education is the inheritance of wisdom (i.e., know-how on how to live a life), more than mere transfer of knowledge (Figure 9). We hope that, as an extension of our GCEPG/GSEEED projects, learners will also form a global knowledge forum for the exchange of ideas, information, knowledge and joint research and development, which will foster collective creativity of youngsters around the world [Utsumi, 2006-a]. Researchers in developing countries can co-work with colleagues in advanced countries to perform joint collaborative research with use of virtual laboratories for hands-on experiential/constructive learning and creation of knowledge through the global GRID technology, thus forming GCIN [Utsumi, 2006-b]. Such interactions among youngsters around the world through global broadband Internet would certainly promote mutual understanding and hence global peace.

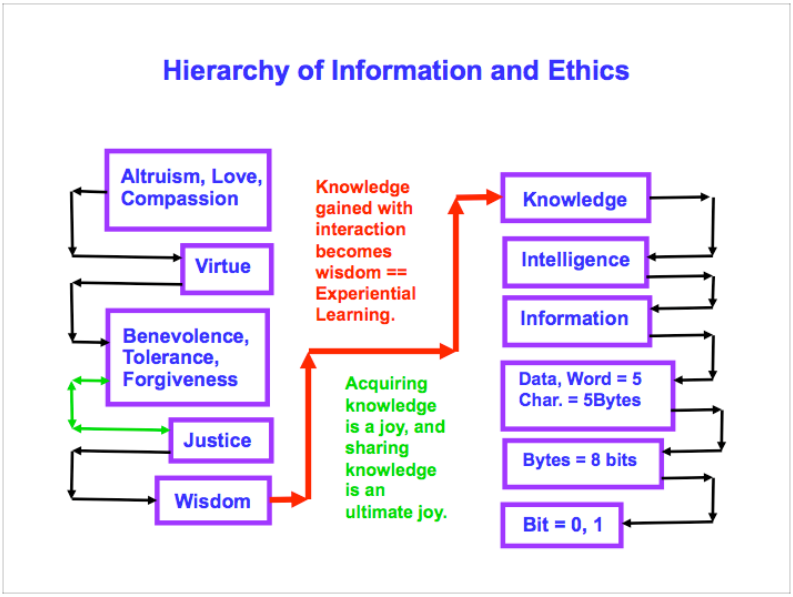


Figure 9 <http://tinyurl.com/5be8xe>

Dr. Hallan Cleveland, former president of the University of Hawaii and former US Ambassador to NATO, once wrote that 8 bits become one byte, 5 bytes become one word or data, which becomes information. Information selected with intelligence becomes knowledge. We then expanded its hierarchy as depicted above. As shown, each item is controlled by the one above. However, Justice and Forgiveness/tolerance have to be two-way interaction.

5. Development History:

5.1 Summer Computer Simulation Conference (SCSC):

After pioneered in computer simulation starting with the analysis of chemical reaction on absorption of air pollution gases in early 1960s, Dr. Utsumi created the SCSC in early 1970s, (which hence proliferated in the US and developed countries), at which time he conceived the peace gaming idea mentioned above.

5.2 Global Telecom:

Since early 1970s, Dr. Utsumi 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 (thanks to help from the Late Commerce Secretary Malcolm Baldridge) [Chapter 1 of Utsumi's Proposed Book]. 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 one billion email users around the world nowadays. American and other countries' university courses now reach many developing countries.

5.3 Peace Gaming Demonstration:

A demonstration of global-scale peace-gaming was held at the conference on "Crisis Management and Conflict Resolution" by the World Future Society (WFS) in New York City, in July of 1986. It was one of the largest and perhaps most successful demonstrations of global gaming/simulation organized so far. The event was on a crisis scenario involving the U.S.-Japan trade and economy issues. Professor Onishi in Tokyo supplied his FUGI model, which is the world largest econometric model [Onishi, 2007].

Noted U.S. economists were panelists of this event and electronically interconnected with Japanese counterparts for three days of computer-assisted negotiations. Several hypothetical policies were examined. One question was the effect of raising military expenditures in Japan to the American level while lowering those of the U.S. to the Japanese level. Simulation predicted that the balance of trade would thus be even by the year 2000, with necessity of cooperation, rather than competition, by both countries in the future. This clearly indicated the cost and dilemma of American's nuclear umbrella protecting Japan's economic prosperity, thus threatening American's economic prosperity – see more in "Interview with Takeshi Utsumi" by Parker Rossman <http://tinyurl.com/fnxxt>.

5.4 "Global Lecture Hall (GLH)" Videoconferencing:

Since mid 1980s, Dr. Utsumi promoted global e-learning and e-healthcare/telemedicine as conducting a series of innovative distance teaching trials, once or twice every year for over a dozen years, with "Global Lecture Hall (GLH) ^{TM}" videoconferencing with hybrid delivery technologies, which often spanned the globe [Chapter 2 of Utsumi's Proposed Book] and [Utsumi, 2003], including demonstrations of telemedicine from Finland and Amazon to the US. Some of them utilized 11 channels on 9 transponders, all at free of charge, as connecting many universities between New Zealand to Moscow.

Thanks to such efforts and for initiating global e-learning movement since early 1980s, Dr. Utsumi received the prestigious Lord Perry Award for Excellence in Distance Education, the highest honor in e-learning field, in the fall of 1994 from Lord Perry, the founder of the U.K. Open University. The two-year senior recipient of the award was Sir Arthur C. Clarke, the inventor of satellites.

6. Funding:

Our projects will combine (1) the Japanese government's Official Development Assistance (ODA) funds and (2) Japanese electronic equipment with (a) the Internet technology and (b) content development of North America and Europe, to help underserved people in rural and remote areas of developing countries by closing the digital divide.

This is to follow the precedence of the University of South Pacific Network, which connects a dozen nearby islands via INTELSAT, with US$ 16 million of the Japanese ODA for hardware (e.g., VSAT, transceiver, etc.) and $ 1 million each from the governments of New Zealand and Australia for software and educational services of their university faculties.

Incidentally, Dr. Utsumi helped the Japanese government to pledge US$15 billion during the 2000 Okinawa Summit, which initiated the "Closing Digital Divide" movement of the United Nations and others. It is said that this fund was distributed to UNDP/ICTD Thematic Trust Fund, World Bank/InfoDev, GDLN, Development Gateway Foundation, EBRD, UNESCO and ITU, Japan Social Development Fund of the World Bank, Japan Special Fund of the Inter-American Development Bank, Japan Fund of the Asian Development Bank, etc.

7. Conclusions:

The GUS program is a comprehensive and holistic approach to building smart and creative communities [Eger, 2003-a and Eger, 2003-b] in developing countries for e-learning and e-healthcare/telemedicine. Initiatives are underway to create the necessary infrastructure and educational liaisons, and some near-term educational access is expected.

GUS and GCEPG are clearly ambitious programs, one that cannot be achieved by any one group, university, or national government. The programs require substantial collaborative contribution of ideas, expertise, technology resources, and funds from multiple sources. Those who value the visions of GUS and GCEPG are invited to join this great and noble enterprise.

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In the bottom line of this page, you can find the following; "Interview with Takeshi Utsumi" by Parker Rossman <http://tinyurl.com/fnxxt>

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<http://preview.tinyurl.com/337nrn>

Over 200 papers and books

MEMORANDUM OF UNDERSTANDING:

(a) Polytechnic University, New York, NY, USA with GLOSAS/USA (May 17, 2007) <http://tinyurl.com/6oljpy>, This is for GCEPG/GSEEED project. NOTE: Polytechnic University is to become Polytechnic Institute of the New York University from this fall.

(b) "Agreement of Cooperation" among University of Tampere, Finland, TOBB Economic and Technology University in Ankara, Turkey and Global University System (November 9, 2007) <http://tinyurl.com/46h3oa>, This is for Global University System (GUS) project, which headquarters is at the UNESCO/UNITWIN Networking Program at the University of Tampere, Finland.

Dr. Takeshi Utsumi is the Founder and Vice President for Technology & Coordination of Global University System (GUS) and the Chairman of the Global Systems Analysis and Simulation Association in the U.S.A. (GLOSAS/USA). He is the 1994 Laureate of the Lord Perry Award for Excellence in Distance Education. His public services have included political work for deregulation of global telecommunications and the use of e-mail and voice over Internet Protocol (VoIP) through ARPANET, Telenet and Internet; helping extend American university courses to developing countries; the conduct of innovative distance teaching trials with "Global Lecture Hall (GLH)™" multipoint-to-multipoint multimedia interactive videoconferences using hybrid technologies; as well as lectures, consultation, and research in process control, management science, systems science and engineering at the University of Michigan, the University of Pennsylvania, M.I.T. and many other universities, governmental agencies, and large firms in Japan and other countries.