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Peace**

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Trends of 21st Century

1. Shift of Technology
Analog to Digital
2. Globalization of Society, Commerce,
and Culture
Local to Global
3. Emergence of New Knowledge/
Creative Economy
Obedience to Creativity

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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.

Slide rule to digital computer; Circuit switching telephony to packet switching digital telecom -- necessary to have "mind-change," particularly of bureaucrats as Machiavelli once said almost a half millennium ago.

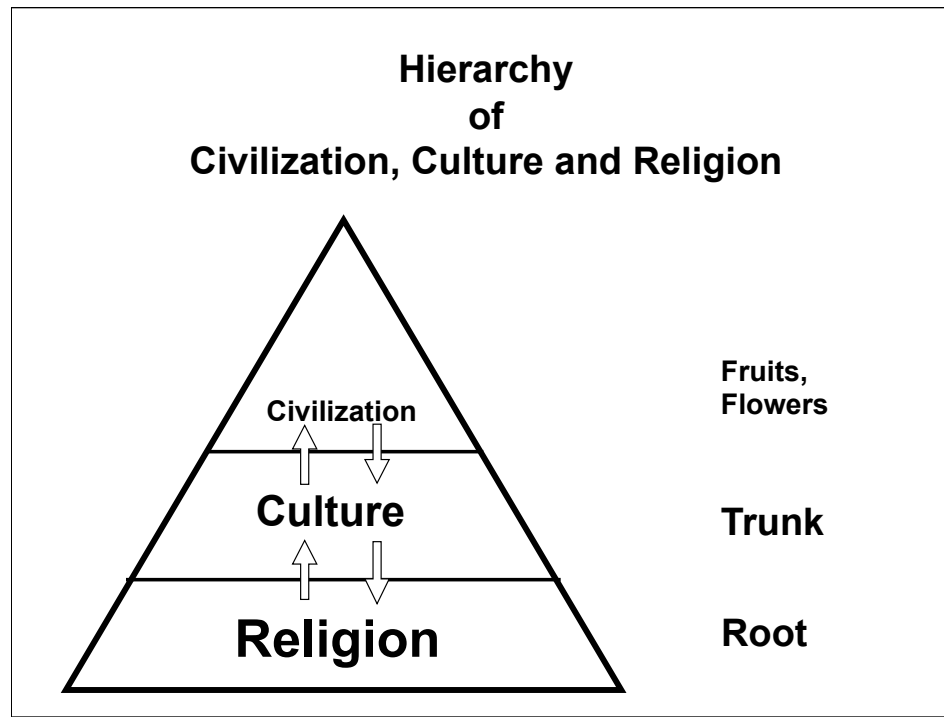
* Raw material of industrial age was tangible, the raw material of knowledge age in the 21st century is IN-tangible.

* **There is NO economic theories for the New Economy.**

* Dr. Kaisa Kautto-Koivula said in her paper in our recent book that "**The biggest barrier for new development of Human-Centric Knowledge Society is our Industrial Age mindset!**"

* Creativity is the province of Homo sapiens. We live for future, not in past. Science and technology open the future. However, the application of new technology often meets with "Creative Destruction" -- the famous words by Joseph Schumpeter.

* Here needs good understanding of traditions and culture, and strong belief in scientific and moral principles. This is because the interchange of creativity makes possible an international understanding and mutual appreciation that can lead to global peace.



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**Japan = cherry,
China = peach,
the U.S. = apple, etc.**

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.

Culture of America (Unique crucible for innovation)

- Freedom of thought
- Independent thinking
- Immigration of new minds
- Risk-taking
- Non-corrupt bureaucracy
- Financial market and venture capital

These institutions, which nurture innovation, are the real crown jewels of American culture.

Friedman, T. L., "The Secret of Our Sauce," The New York Times, March 7, 2004

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America is so much more innovative a place than any other country. America allows you to explore your mind. America is the greatest engine of innovation that has ever existed, and it can't be duplicated anytime soon, because it is the product of a multitude of factors:

- * Extreme **freedom of thought**,
- * An emphasis on **independent thinking**,
- * A steady **immigration of new minds**,
- * A **risk-taking** culture with no stigma attached to trying and failing,
- * A **non-corrupt bureaucracy**, and
- * **Financial markets and a venture capital** system that are unrivaled at taking new ideas and turning them into global products.

These institutions, which nurture innovation, are the real crown jewels of American culture. The whole process where people get an idea and put together a team, raise the capital, create a product and main-stream it -- that can only be done in the U.S.

The U.S. tech workers must keep creating leading edge technologies that make their companies more productive -- especially innovations that spark entirely new markets.

This is America's real edge.

How to Fire Up The Innovation Machine

BusinessWeek, October 11, 2004, Page 240

At a time of intense division, with deep political and religious fault lines splitting the world, innovation stands out as a powerful integrative force.

It ties countries, companies, and consumers together in creating value, solving problems, and generating wealth.

An innovation economy demands that society be open, dynamic, educated, international, and risk-taking. Given a chance, innovation can improve all our lives.

Financial risk-taking is the fuel that powers the process of change.

Worldwide innovation networks are the new keys to R&D vitality -- and competitiveness.

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Global University System (GUS) - #1

The Global University System (GUS) is a worldwide initiative to establish broadband Internet infrastructure for enhancing e-learning and e-healthcare across national and cultural boundaries for global peace.

The philosophy of GUS is based on the belief that global peace and prosperity would only be sustainable through education. The prime objective is to achieve “education and healthcare FOR ALL,” anywhere, anytime and at any pace.

Global University System (GUS) - #2

GUS aims to create a worldwide consortium of educational and healthcare institutions and NGOs, particularly benefiting those in remote/rural areas of developing countries for the eradication of poverty and isolation.

Learners in those countries will be able to take courses, via advanced broadband Internet, from member institutions around the world, and receive a GUS degree.

Both the learning (students or lifelong learners) and teaching (professors) at partner institutions will also form a global forum to exchange ideas and information and to collaborate in research and development with the emerging global GRID computer network technology.

Thus, the higher education institutions will close the digital divide, act as the knowledge center of their community and lead their development.



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The word “University” has a connotation of “universe.” Hence, the university in remote/rural areas of developing countries ought to act as the knowledge center of their community for the eradication of poverty and isolation through the use of advanced Information and Communication Technologies (ICTs).

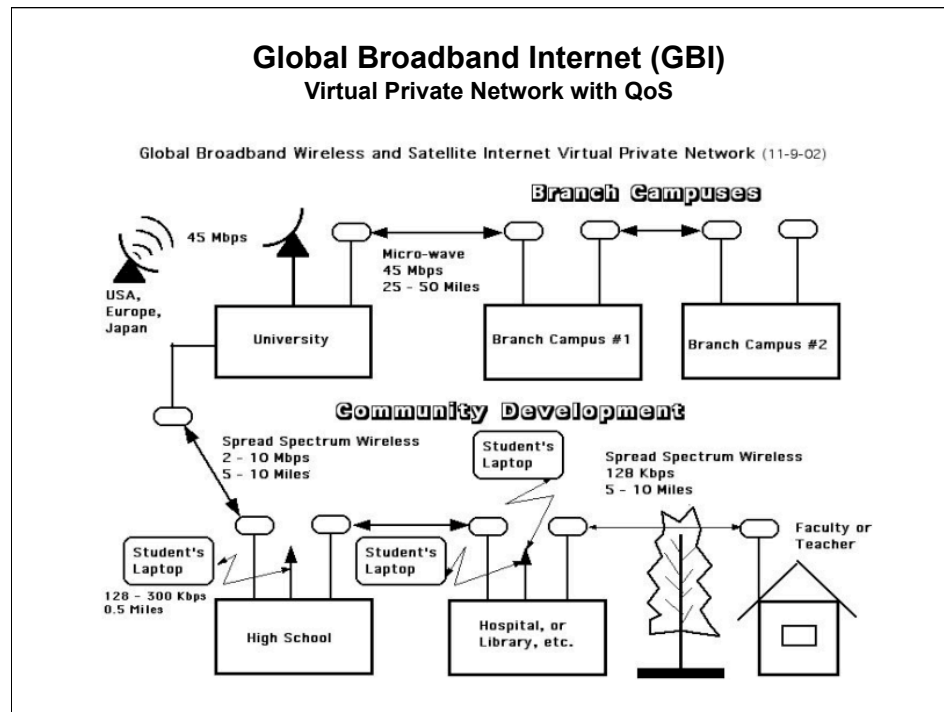
The university has to provide not only e-learning and e-healthcare services to their community, but also to lead their community development.

It also ought to be the gateway for globally collaborative research and development as fostering the Global Creative Economy in the borderless Knowledge Society of the 21st century.

GUS aims to promote world prosperity, justice and peace through higher education, based on moral principles rather than political or ideological doctrines.

Education and job skills are the keys in determining a nation's wealth and influence.

Those institutions affiliated with GUS become members of the GUS/UNESCO/UNITWIN Networking Chair Program located at the University of Tampere in Finland.



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1. Satellite linkage:

GUS will be based on regional satellite hubs, typically located at a major university, that connect via high-speed satellite (~ 45 Mbps) to educational resource cites in the E.U., U.S., and Japan. (If available, it will be connected with terrestrial optical fiber broadband Internet, as the case of Ethiopian's Multimedia Broadband Internet at 3 Gbps.) In a sense, the regional satellite hub is to be the major Internet Service Provider (ISP) for not-for-profit organizations in the region, and the gateway to the outside world.

2. Microwave linkage:

Regional hubs link to branch campuses or other regional educational institutions via micro-wave (~ 45 Mbps) over relatively short distances (25-50 miles), if optical fiber network is not readily available.

3. Community Development Network:

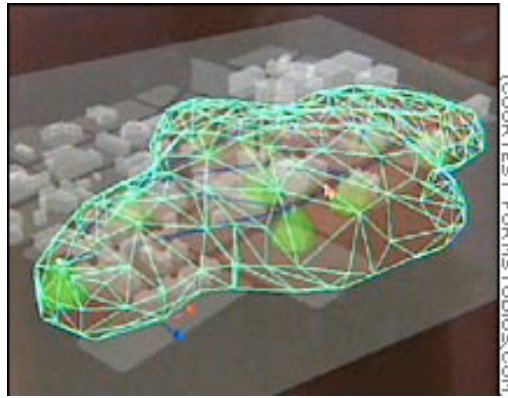
Communication from the hub and branch campuses to local sites, over distances up to 10 miles, is to be achieved by spread-spectrum wireless (~ 2-10 Mbps) Internet networks, which do not require licenses in most countries.

4. Wi-Fi connection:

The buildings with a broadband Internet connection will then also become relay points for the low-cost "Wi-Fi (wireless fidelity)" networks at 10 Mbps that are now rapidly appearing in Japan, USA and Europe, e.g., Philadelphia, San Francisco, Taipei, etc.

This advanced wireless communication with laptop computer will make e-learning possible for anyone, anywhere, and anytime with capabilities of Internet telephony, fax, voice mail, e-mail, Web access, videoconferencing, etc. This is not only to help local community development, but also to assure close cooperation among higher, middle and lower levels of education.

WiFi Cloud



This 3-D animation shows the wireless "cloud" over downtown Athens, Georgia. The project is aimed at attracting new users and creating new content for wireless laptops and PDAs.

"Wireless 'cloud' may offer silver lining; Or is it just 'pie-in-the-sky' technology?"

CNN.com/SCI-TECH; July 31, 2002

<http://www.cnn.com/2002/TECH/science/07/31/coolsc.wireless.cloud/index.html>

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Inventor of Wireless

Ms. Hedy Lamarr

The Improbable Inventors of Frequency-Hopping Radio

She was gorgeous, glamorous and talented. And she had a mind for technology. In 1941 actress Hedy Lamarr, along with the avant-garde composer and musician George Antheil, filed for a patent to cover their "Secret Communication System," a device designed to help the U.S. military guide torpedoes by radio signals that would continually jump from one frequency to another, thus making enemy interception and jamming difficult.

Born Hedwig Maria Eva Kiesler in Vienna, Austria, Lamarr may have gotten the idea of "frequency hopping" while she was married to Fritz Mandl, an armament manufacturer who sold munitions to Adolf Hitler. Through a marriage arranged by her parents, Lamarr was Mandl's trophy wife, and she accompanied him to the many business dinners and meetings, where, unbeknownst to the participants, she silently learned about Axis war technology. After four years with Mandl, Lamarr, a staunch anti-Nazi, fled to London, where MGM's Louis B. Mayer "discovered" her and convinced her to move to the U.S.

In Hollywood she met Antheil, who helped her figure out a way to synchronize the frequency hopping between the radio transmitter and receiver. Their invention, which they gave to the U.S. government for free, called for two paper rolls, similar to those used in player pianos, punched with an identical pattern of random holes. One of the rolls would control the transmitter on the submarine while the other would be launched with the receiver on the torpedo. Though ingenious, the device was deemed too cumbersome for use in World War II.

Still, the seminal idea of frequency hopping lingered. By the late 1950s U.S. Navy contractors were able to take advantage of early computer processors for controlling and synchronizing the hopping sequence. Since then, the U.S. military has deployed more sophisticated techniques with ever faster processors in costly, classified devices, including satellite communications systems. And today the technology has become widespread in cell phones and in personal communications services (PCS), among other civilian applications. —D.R.H.



HEDY LAMARR, the Hollywood actress, was the co-recipient of a patent (*insert*) for basic technology that is now widely used in cell phones and personal communications services (PCS).

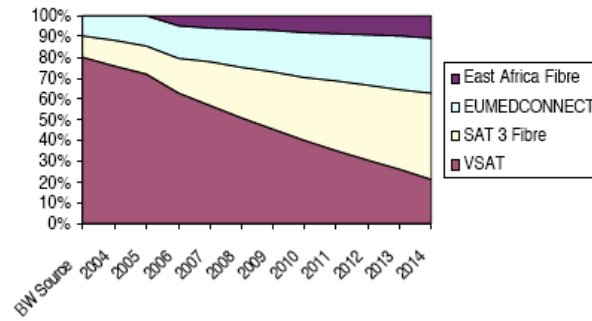
"Spread-Spectrum Radio" by David, R. Hughes and Dewayne Hendricks, *Scientific American*, April 1998, p 94-96

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Possible Shifts in Bandwidth Sources for Africa

http://www.connectivityafrica.ca/page.php?file=PAREN_Report_final.pdf

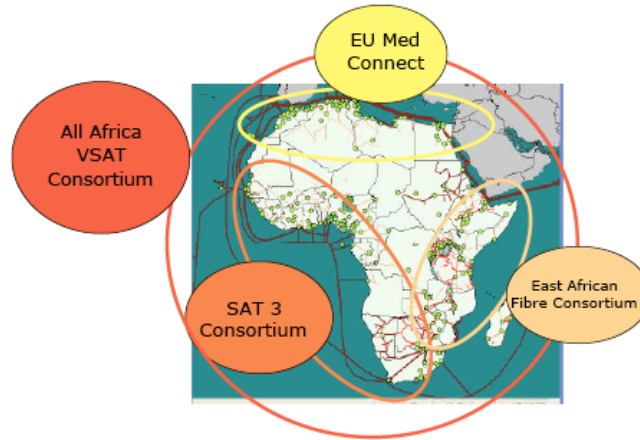


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Potential Consortia in Africa

http://www.connectivityafrica.ca/page.php?file=PAREN_Report_final.pdf





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Expected Benefits

- Consortium member universities will be able to build the network of facilitators for support of e-learners,
- Learners may take one course from a university of different country to get his/her degree from the GUS, thus freeing them from being confined with one philosophy of a university and a country,
- The broadband Internet will enable web-based teaching with more interaction among/between learners and instructors compared with less interaction in replicating class-room teaching via analog broadcasting satellite, -- thus stimulating global dialogues among them to attain global peace, (continue)

Expected Benefits (continued)

-  **Learners and faculties at the member universities can promote exchange of ideas, information, knowledge and joint research and development of web-based teaching materials, community development, and many others locally, regionally and even in global scale,**
-  **Researchers in even developing countries can perform joint collaborative Hi-Tech research and development with virtual reality and virtual laboratory of various academic and engineering subjects with colleagues in developed countries.**

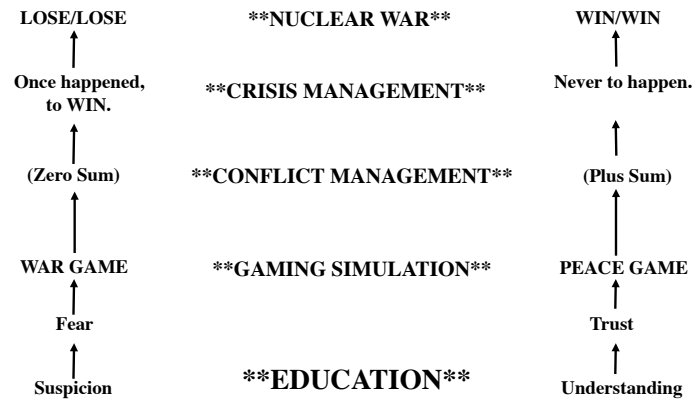
Globally Collaborative Environmental Peace Gaming

Globally Collaborative Environmental Peace Gaming (GCEPG) with a globally distributed computer simulation system, focusing on the issue of environment and sustainable development in developing countries, is to train would-be decision makers in crisis management, conflict resolution, and negotiation techniques basing on "facts and figures."

With global GRID computer networking technology and Beowulf mini-super computers of cluster computing technology, we plan to develop a socio-economic-environmental simulation system and a climate simulation system in parallel fashion, both of which are to be interconnected in global scale.

War and Peace Games

Peace Game is for Global Understanding



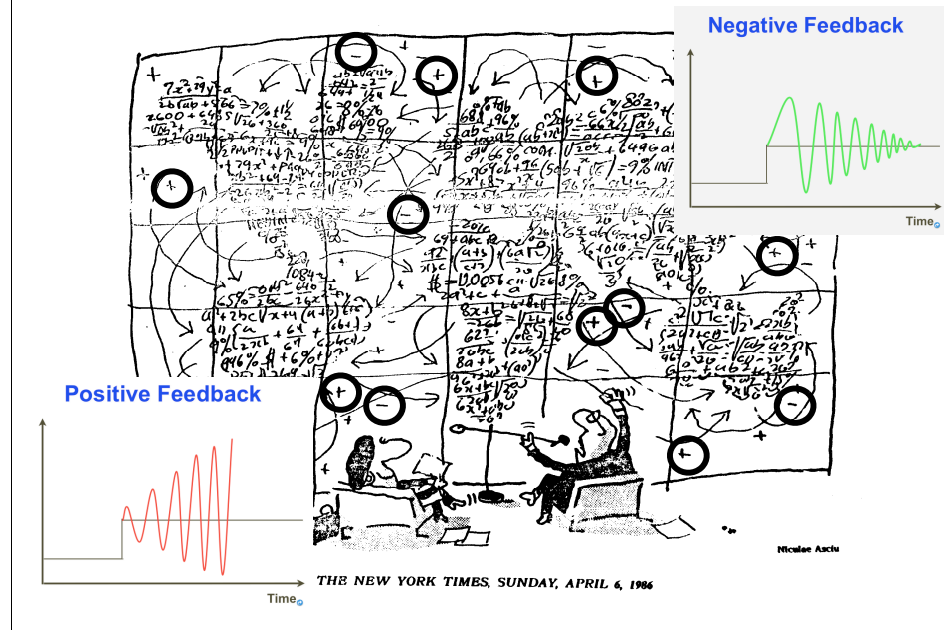
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Three Necessary Components for Peace Gaming

- 1. Telecommunication Infrastructure**
Packet-Switching Telecommunication
Internet
- 2. Communication Means**
E-mail
Multimedia
- 3. Game Players**
Global University System

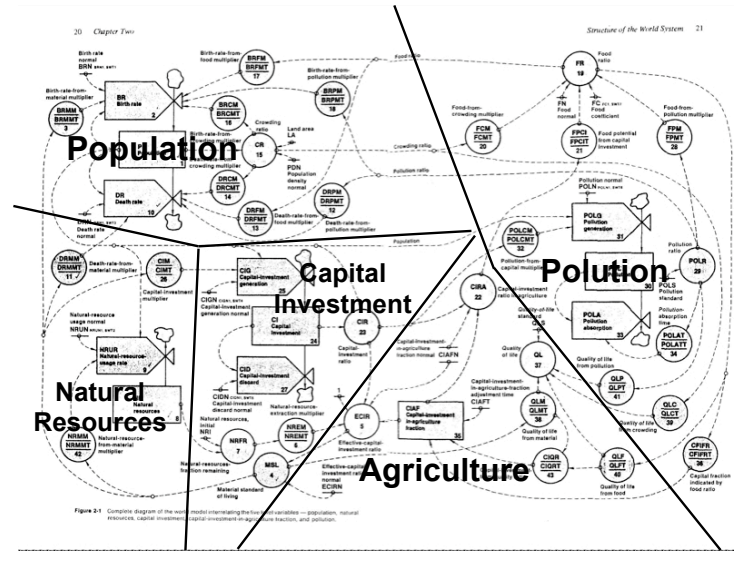
Systems Analysis of the World



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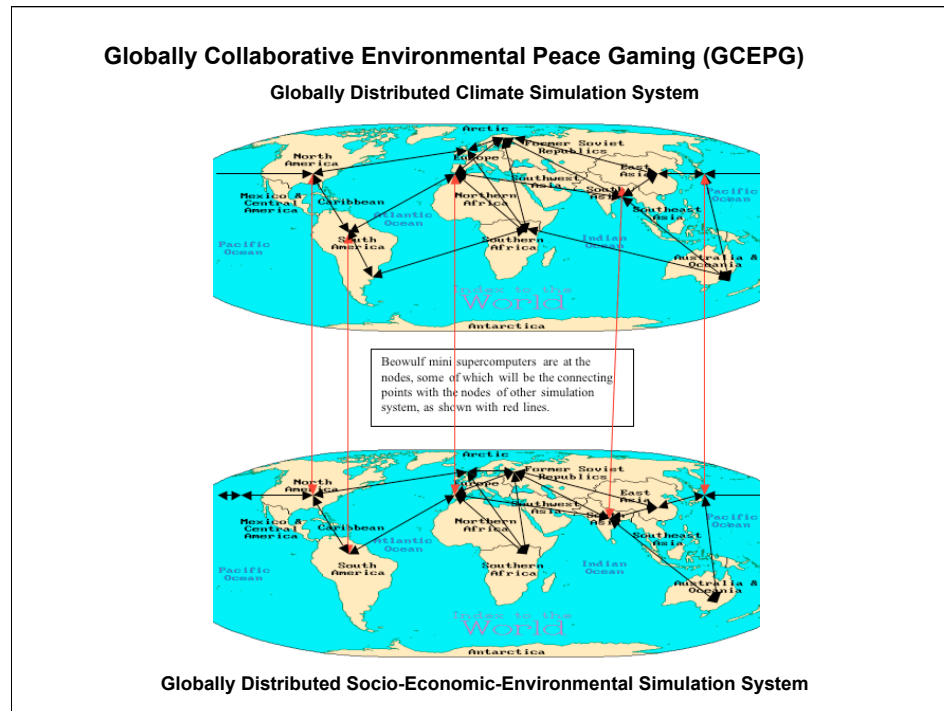
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Cause-and-Effect Diagram of World Dynamics Model



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The best way to cope with the modeling difficulties stemming on the basic difference between discrete, boundary-oriented socio-economic-environmental simulation and continuous climate simulation would be to accomplish distributed computer simulation networks of both of them with dispersed mini supercomputers in parallel fashion and both networks to be interlinked at appropriate locations (red lines in this diagram).

The network of dispersed mini supercomputers (each of them with socio-economic-environmental model of their localities) will work as a single simulation of global economy. In a similar fashion, another network of dispersed mini supercomputers (each of them with climate model of their region) will work as a single simulation of global climate. Both networks can be linked in such a way that global socio-economic-environmental simulation will work closely together with global climate simulation.

The decision-making parameters can directly be fed into nearby mini supercomputers for its regional socio-economic-environmental simulation model, yet having effects on both global simulation networks. This will be a perfect democratic participatory of global simulation. This will then eliminate the need of such a giant Earth Simulator of Japan (US\$350 million and 4 tennis courts size).

Financing

(continued)

- **GUS 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.**

Conclusions

Our projects are clearly ambitious due to its scope and nature. Any one group, university, or national government cannot achieve it. They requires substantial collaborative contribution of ideas, expertise, technology resources, and funds from multiple sources.

We invite those who value the visions of our Global University System (GUS) project and Globally Collaborative Environmental Peace Gaming (GCEPG) project to join us in this great and noble enterprise for human survival.

GLOSAS Projects

**(GLObal Systems Analysis and Simulation Association
in the U.S.A.)**

Takeshi Utsumi, Ph.D., P.E.

 **Chairman, GLOSAS/USA**

 **Laureate of Lord Perry Award for Excellence in
Distance Education**

 **Founder and V.P. for Technology and Coordination
of Global University System (GUS)**

 **<http://www.friends-partners.org/GLOSAS/>**

Click "Current Reference Websites" in the home page listed above.

Muito Obrigado

Arigato

(“Thank you” in Japanese)

(not alligator)