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.

Necessary Systems to Construct

- Globally distributed computer simulation system,
- Globally distributed decision-support system,
- Global neural (GRID) computer network system

John McLeod • Technical Editor Suzette McLeod • Managing Editor

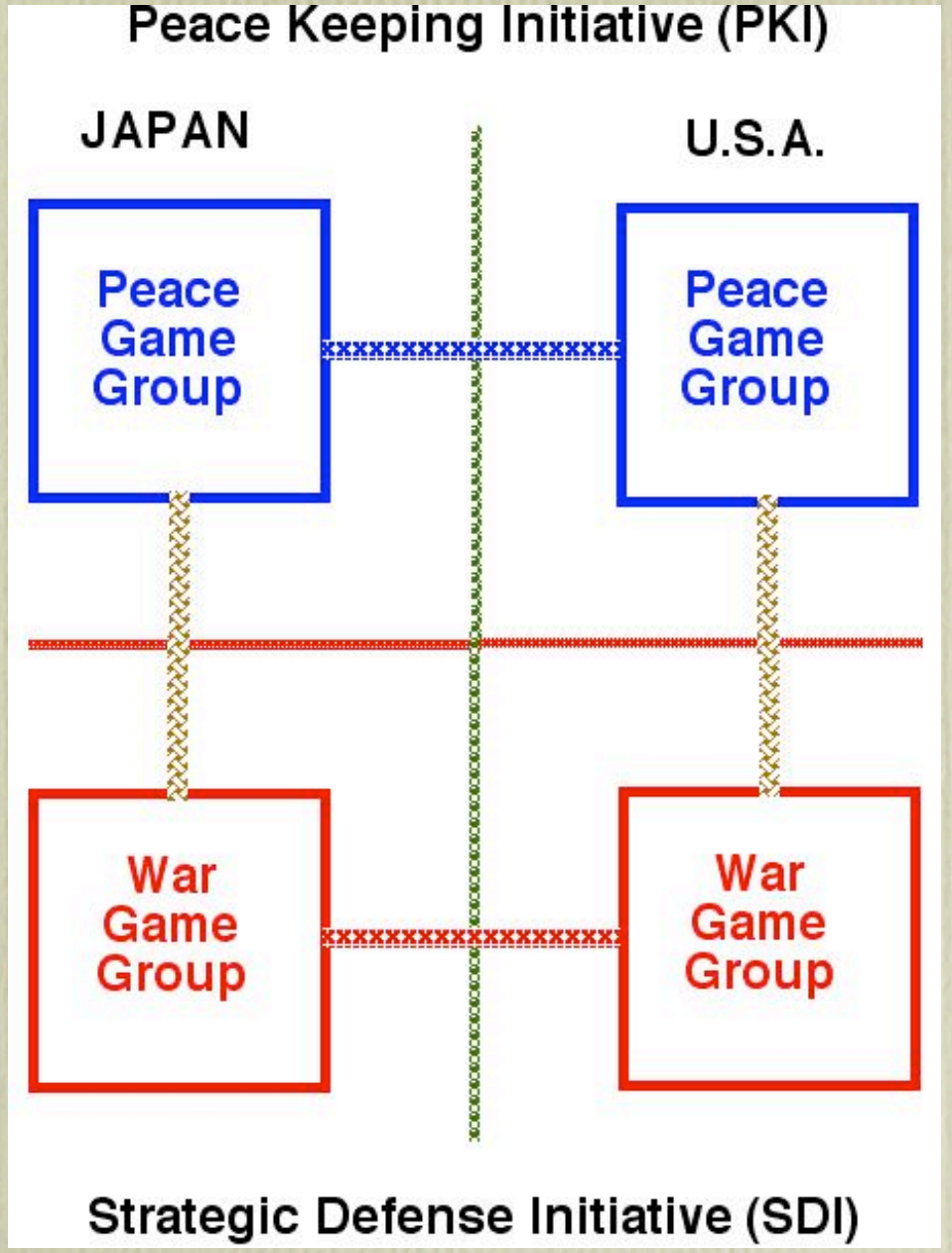
Big Game!

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.

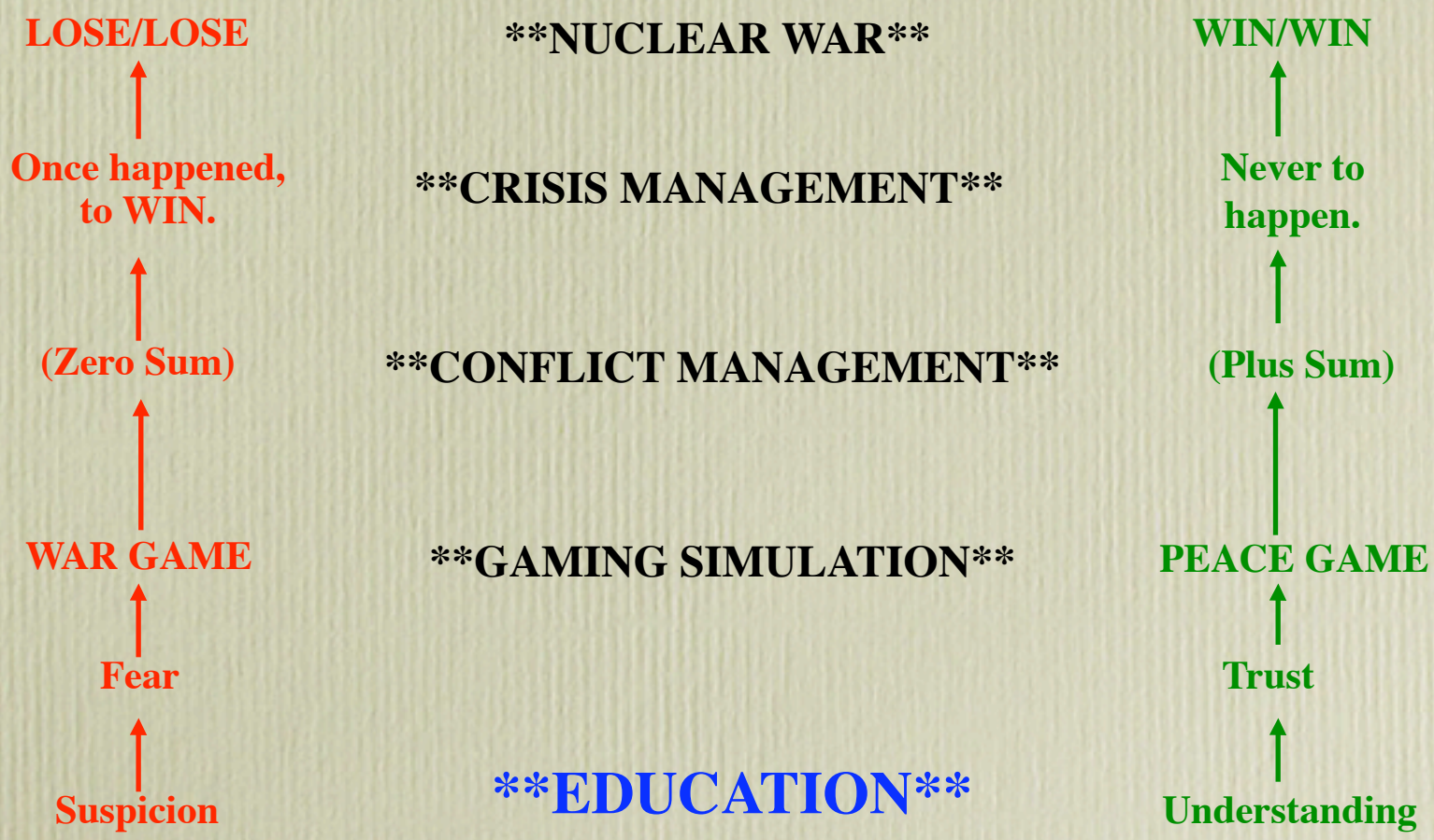
Today the technology required to support the infrastructure is here, or nearly so, and one man who has been pushing hard for 18 years is making demonstrable progress. That man is Dr. Takeshi Utsumi, who has given his time, talent, and considerable personal money to the effort.

Peace and War Gaming



War and Peace Games

Peace Game is for Global Understanding



Cold War to Environmental Calamity

Hans Blix, the chief inspector of United Nations Monitoring, Verification and Inspection Commission (UNMOVIC):

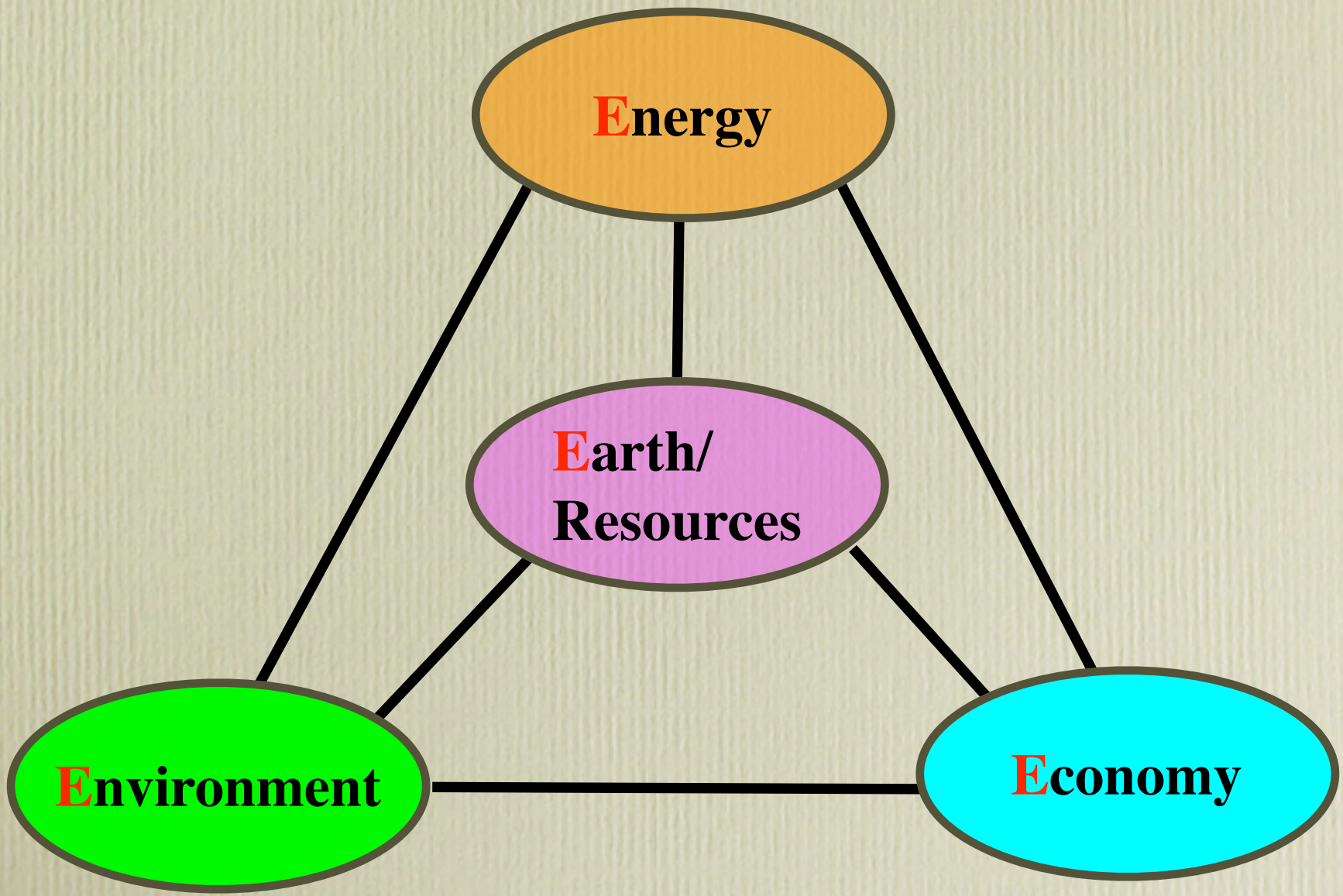
"…on many [other] issues the United States must be multilateral: … To me the question of the environment is more ominous than that of peace and war. We will have regional conflicts and use of force, but world conflicts I do not believe will happen any longer. But the environment, that is a creeping danger. I'm more worried about global warming than I am of any major military conflict."

The New York Times, "QUOTE OF THE WEEK: Hans Blix's Greatest Fear," March 16, 2003

Global Complexities

- Economy and Trade,
- Industrial Structures,
- Natural Resources,
- Environment and Pollution,
- Population,
- Etc.

4 E Components of Globally Collaborative Environmental Peace Gaming

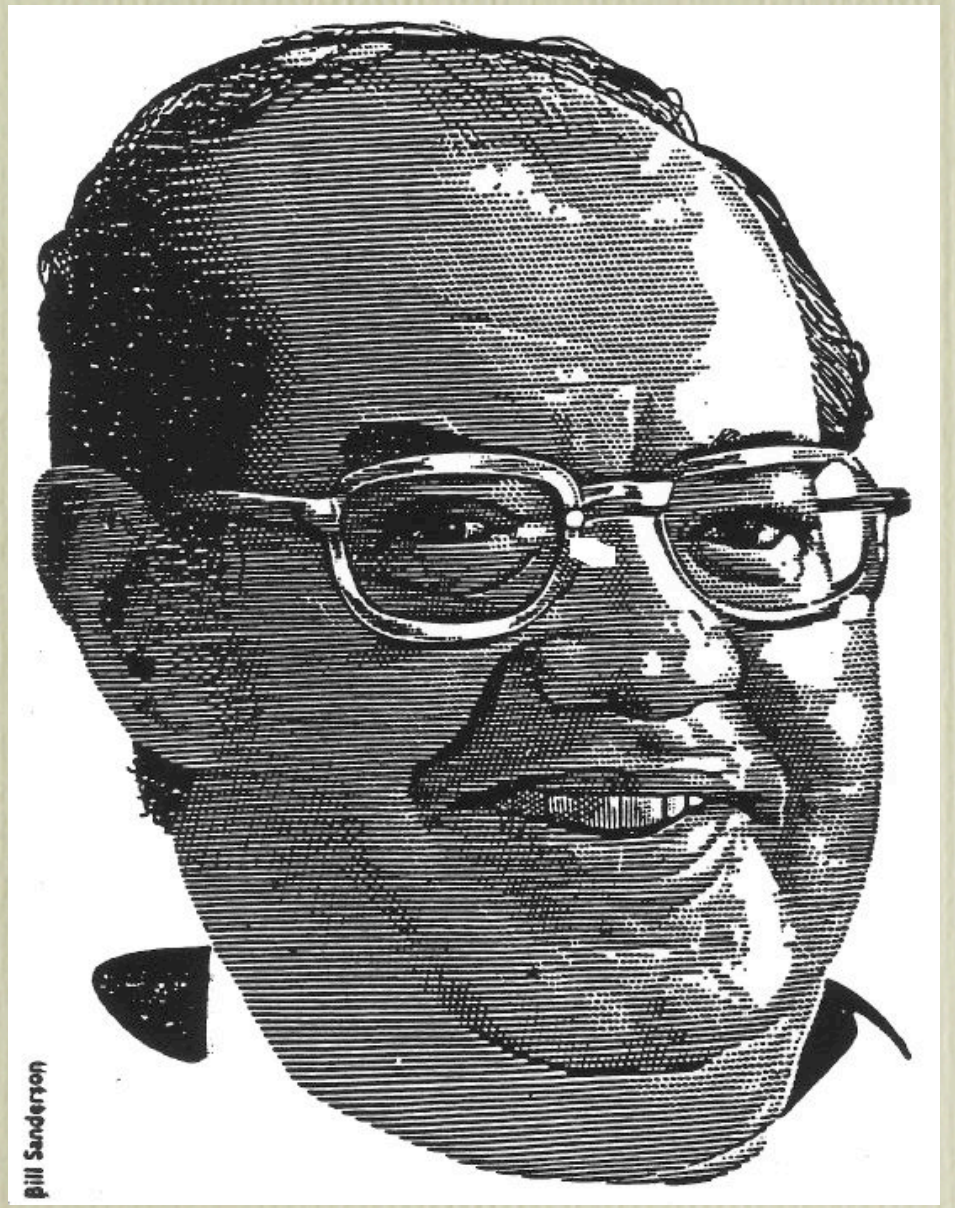


Three Necessary Components for Peace Gaming

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

Paul Baran

Inventor of
Packet-switching Data Telecom Technology



Deregulation of Japanese Telecom Policy for the Use of Email

UNITED STATES DEPARTMENT OF COMMERCE
International Trade Administration
Washington, D.C 20230

APR [illegible]

Dr. Takeshi Utsumi
Global Information Services
43-23 Colden Street
Flushing, N.Y. 11355

Dear Dr. Utsumi:

Enclosed are three cables from the U.S. Embassy in Tokyo reporting on the recent move by the Ministry of Posts and Telecommunications (MPT) to remove the usage restrictions on the ICAS system.

According to the Embassy, MPT's action will allow Global Information Services to offer electronic mail, computer conferencing, and word processing services to Japanese customers via the ICAS system. It thus appears that Global's TFC case has been favorably resolved.

Please review the enclosed cables and let me know your reaction. If you have no objection, we will close this case.

Sincerely,

Philip R. Agress
TFC Staff Officer

Enclosures (3)

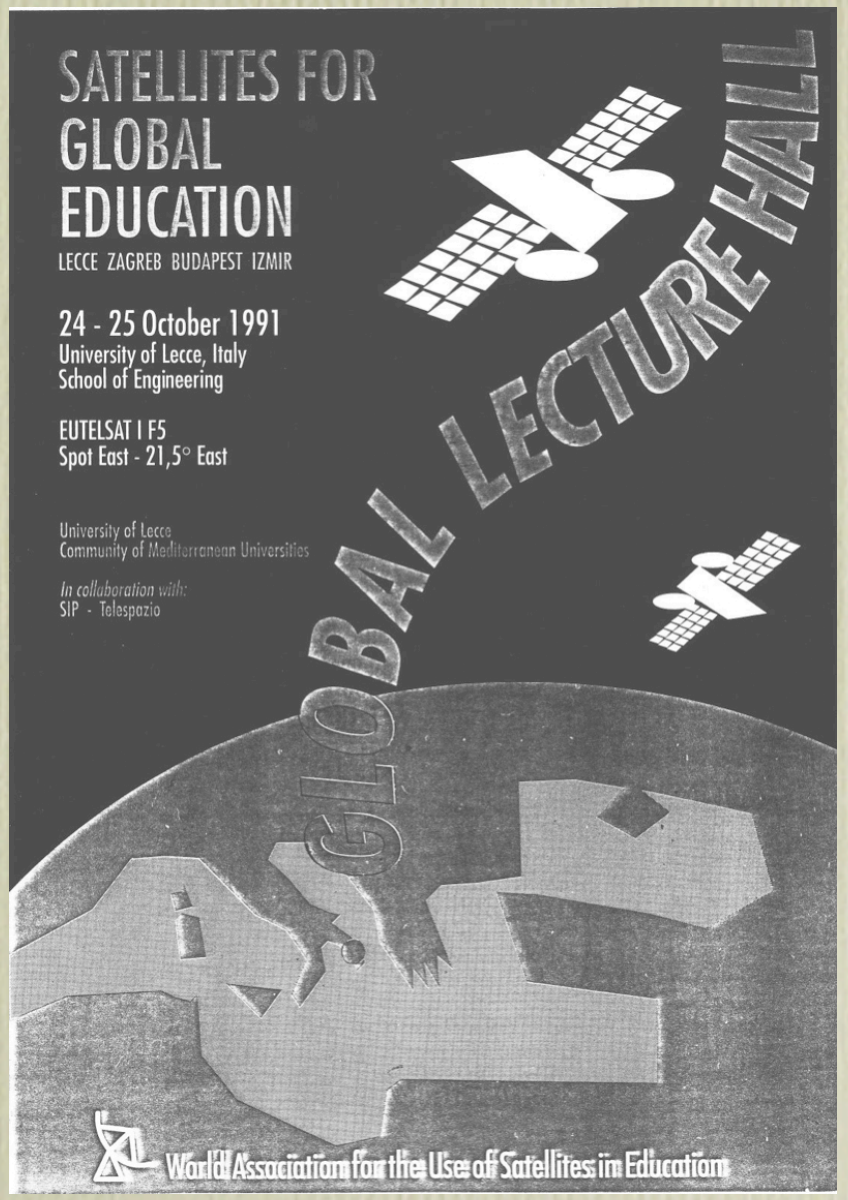
Users of E-mail

(750 million as of 2003)

Business Week, June 27, 1994, page 6

Global Lecture Hall (GLH)

Lecce, Zagreb, Budapest, Izmir
University of Lecce, October 24-25, 1991



Modeling, Simulation and Gaming

- **MODELING:** should refer to the gathering and structuring of data in such a way that the values of the parameters, the initial values of the variables, and their interrelationships are formalized.

- **SIMULATION:** (Real-World oriented, Mathematical Model) should be reserved to the use of a model to carry out "experiments" specifically designed to study selected aspects of the simulant, i.e., the real-world or a hypothesized system that has been modelled.

- **GAMING:** (Decision making oriented) refers to man-machine-simulation in which human judgement is exercised to influence the dynamics of the model during the course of a study.

Reference: McLeod,J.; "Simulation Today - and Yesterday ";Simulation Today, No. 1, p.3 (Appearing in SIMULATION, Vol 18, No. 5, May (1972))

Three Modes of Simulation

1. **MAN-SIMULATION:** Human beings model a simulant of the real world or of a hypothesized system and the descision-makings are entirely made by them with computer conferencing systems.

2. **MACHINE-SIMULATION:** The structure and activity as well as the decision making functions are entirely embedded in computer software.

3. **MAN-MACHINE-SIMULATION:** Computer software is used to model part of simulant, the decision-making apparatus is divided in some manner between a human being and a computer.

GAMING (interactive) SIMULATION
implies to MAN-MACHINE-SIMULATION

Methodologies of Socio-Economic Simulation

1. Dynamic Methodologies:

- **a. Econometrics**
- **b. System Dynamics**

2. Static Methodologies:

- **a. Input/Output Method**
- **b. Linear Programming**

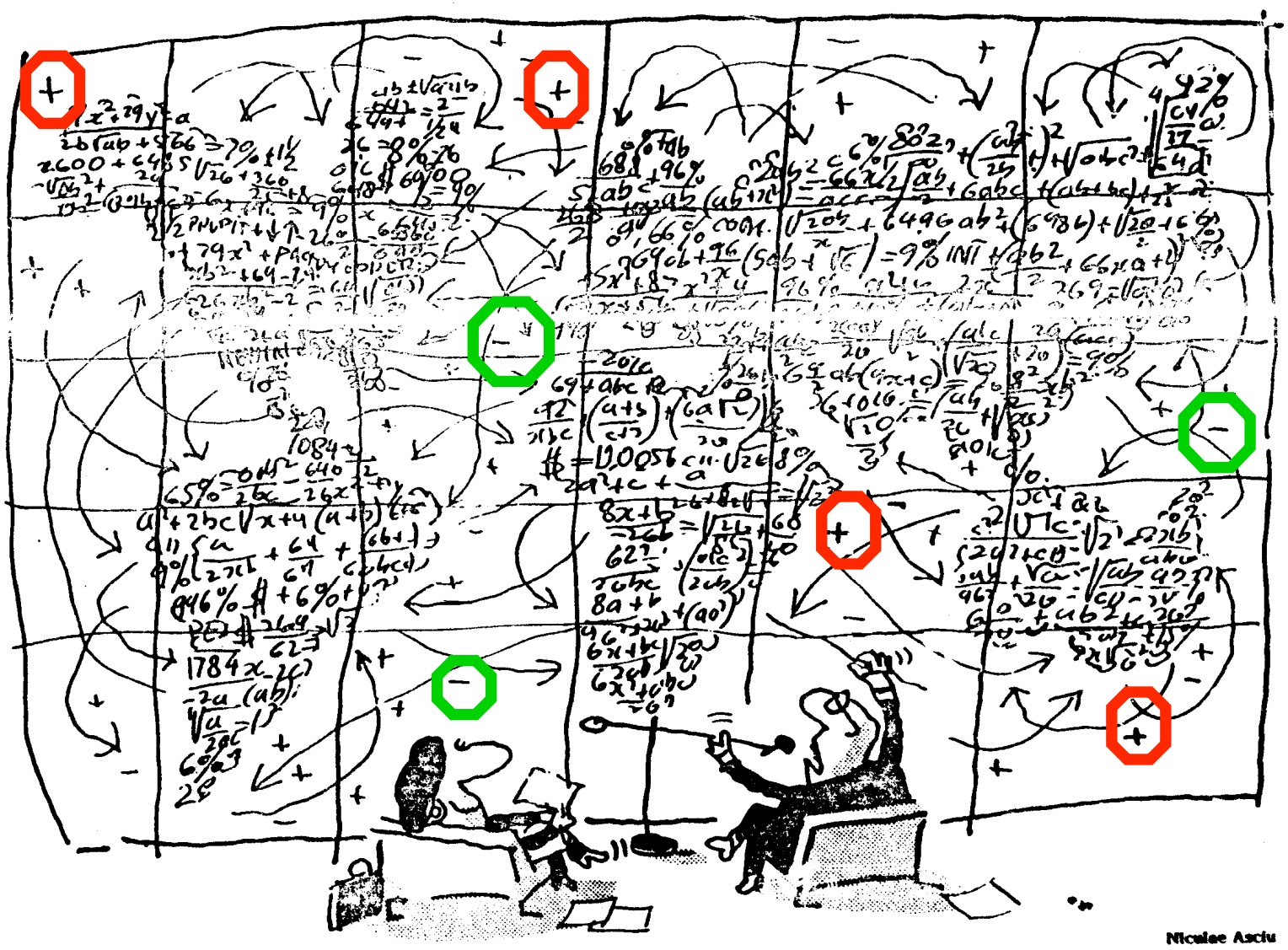
3. Communication-oriented Methodologies:

- **a. Policy Delphi**
- **b. Cross-Impact Matrix Analysis**
  (Probabilistic System Dynamics)

System Dynamic Simulation with Cause-and-Effect Analysis and Feedback Loop

- Non-linear, holistic thinking of the whole system instead of linear, narrow, single issue thinking.
- Counter-intuitive, instead of intuitive.
- Learning the system mechanism and its behavior.
- Rational decision making habit based on FACTS and FIGURES.
- GOOD FOR POLICY ANALYSIS OF SOCIO-ECONOMIC SYSTEMS.

Systems Analysis of the World



Nicolae Asciu

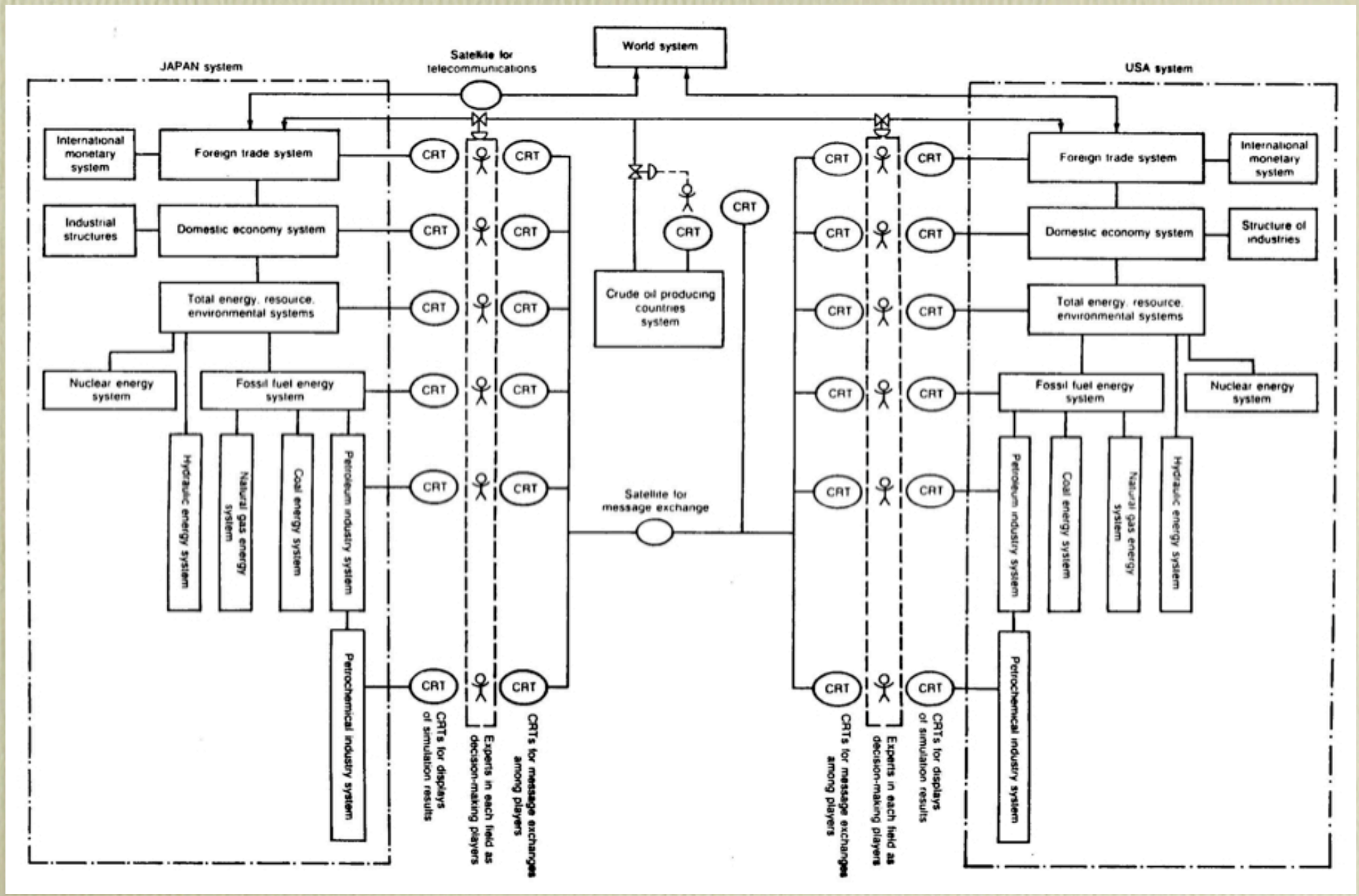
THE NEW YORK TIMES, SUNDAY, APRIL 6, 1986

Advantages of Distributed Simulation

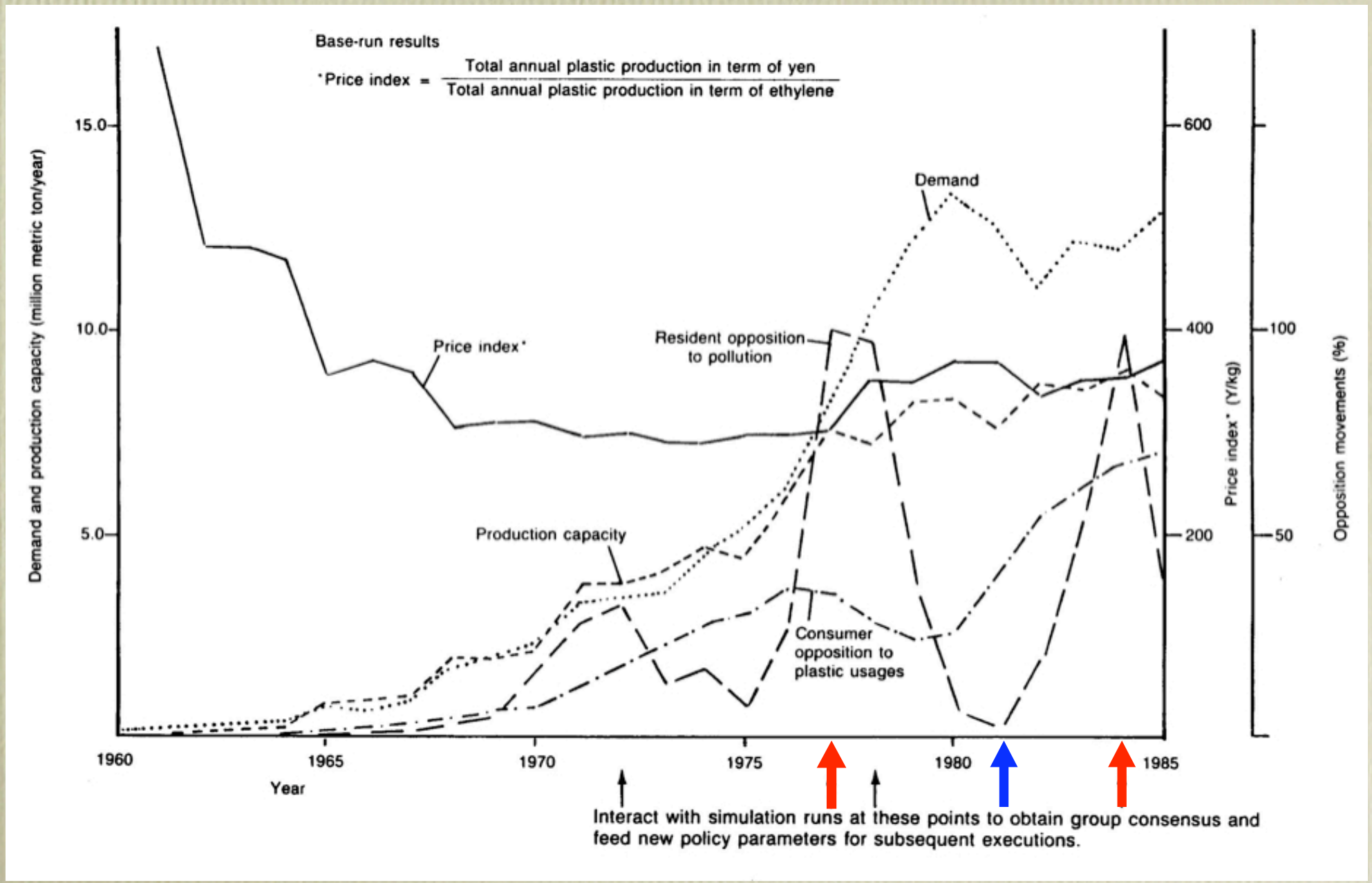
1. Increase of Credibility
2. Data Security
3. Flexibility
    a. Use of any language within local simulation
    b. Same for methodology, machine, etc.
4. Participatory Democracy with Bottom-up Decision
5. Cooperation for Better Understanding
6. Suitable for Large-scale, Confrontation-prone, Global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

Globally Collaborative Environmental Peace Gaming (GCEPG)

Structure of Integrated Models and Communication Network
Boxes are dispersed, dissimilar computers around the global Internet.



Growth of Japanese Petrochemical Industry



Globally Collaborative Environmental Peace Gaming through Global Neural Computer Network

- Need: Kyoto Protocol
- Computer Simulation Models

  Socio-Economic-Environment Model

  Climate Simulation Model
- Beowulf Mini Supercomputer

  Maui Community College in Hawaii
- Global Neural (Grid) Computer Network

Vice President Al Gore

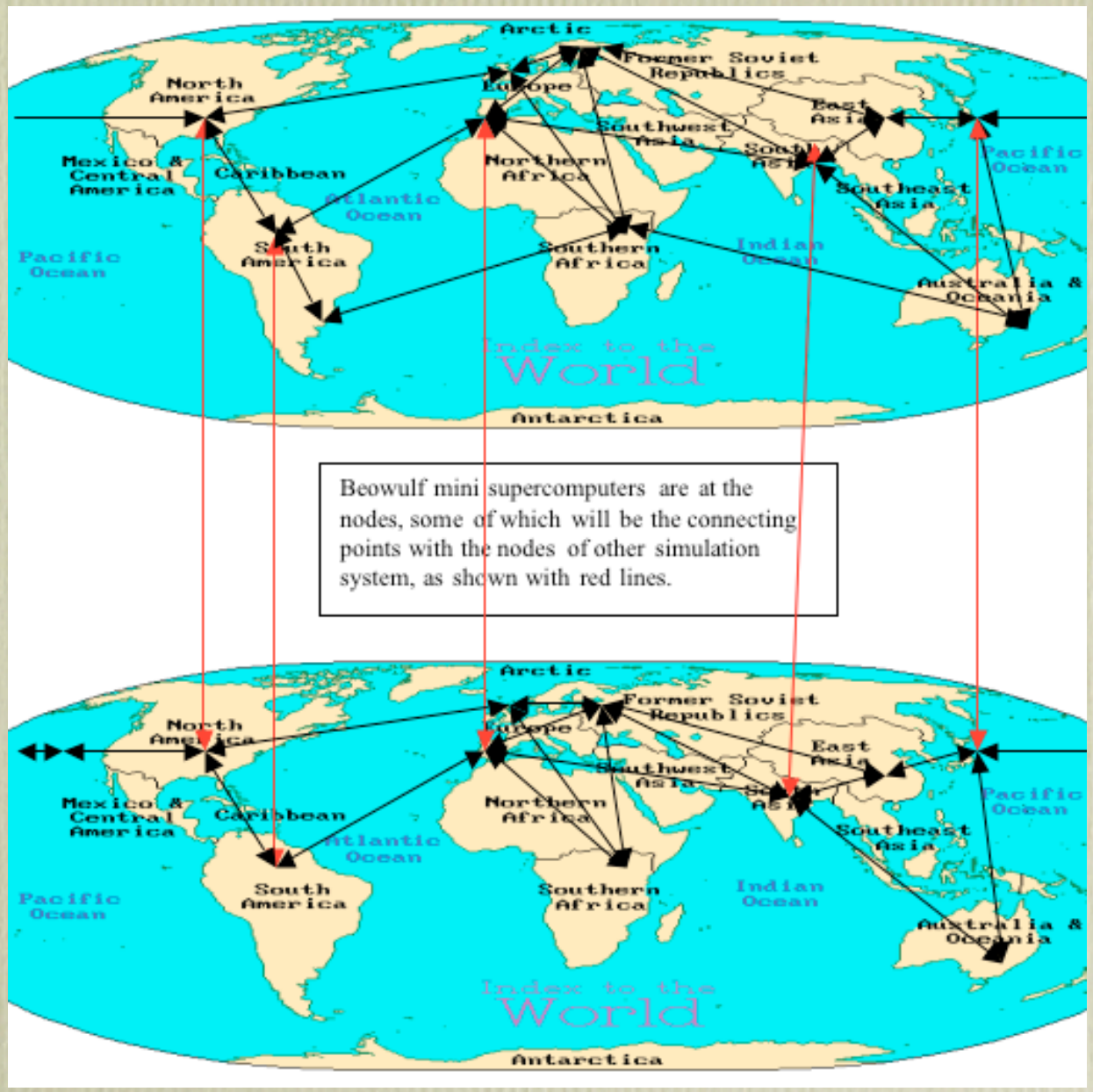
"The Department of Defense is investing well over $1 billion in the development and implementation of networked distributed interactive simulation.

This technology, which allows dispersed learners to engage in collaborative problem solving activities in real time, is now ready for transfer to schools and workplaces outside of the defense sector."

January 11, 1994
Speaking to communications industry leaders

Globally Collaborative Environmental Peace Gaming (GCEPG)

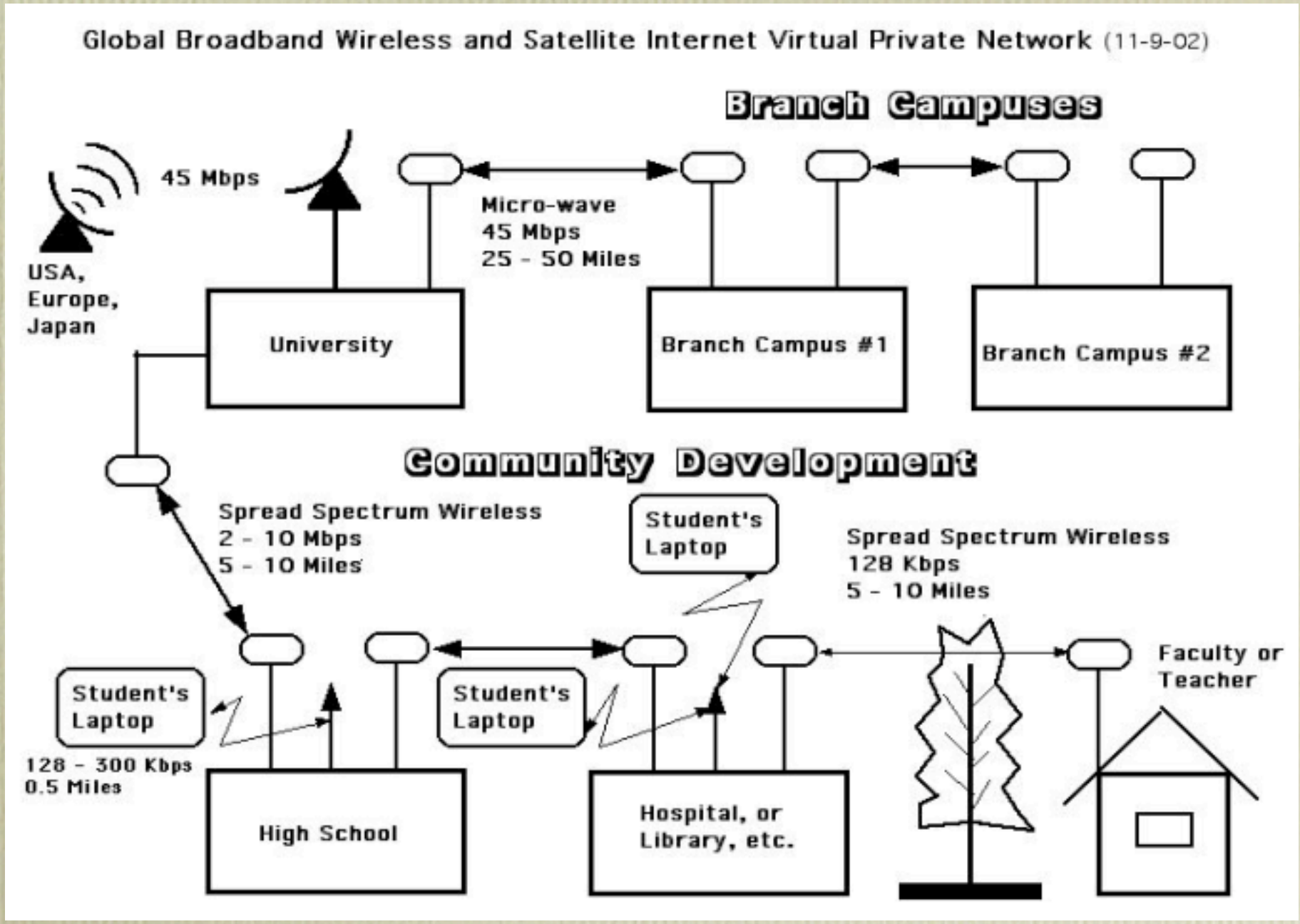
Globally Distributed Climate Simulation System



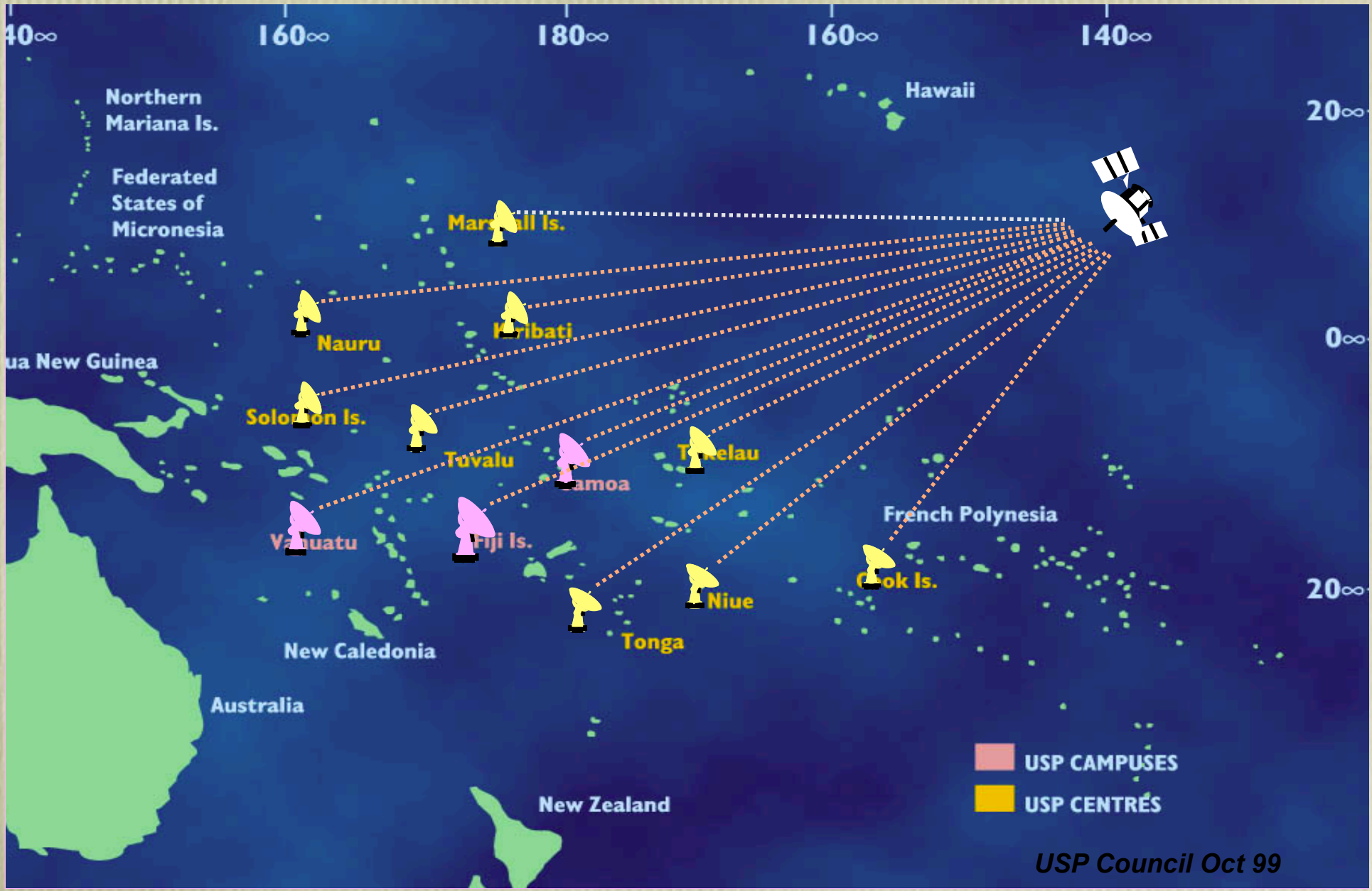
Globally Distributed Socio-Economic-Environmental Simulation System

Global Broadband Internet (GBI)

Virtual Private Network with QoS



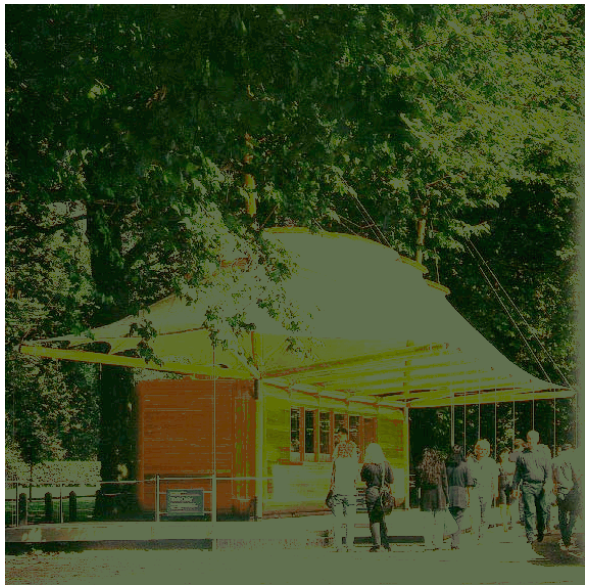
USPNet VSAT Network



LINCOS (Little Intelligent Communities) or "Unwiring the World"

Foundation for Sustainable Development of Costa Rica
Institute of Technology of Costa Rica
MIT Media Lab
University of Rochester

Hewlett-Packard, Microsoft, FTL Happold, Northsails, UTC, Becton-Dickenson, Wyle, V-Tel, **Tachyon**



James Sheats, HP Labs
Technology for Sustainability Initiative

11May 1999

Digital Town Centers

8-10 Computers
2 Printers, 2 Scanners
Cell phone base station (15 mile radius)
Smart card reader
Medical diagnostic bay
Analytical equipment as appropriate
External large screen (when available)
VSAT satellite connection

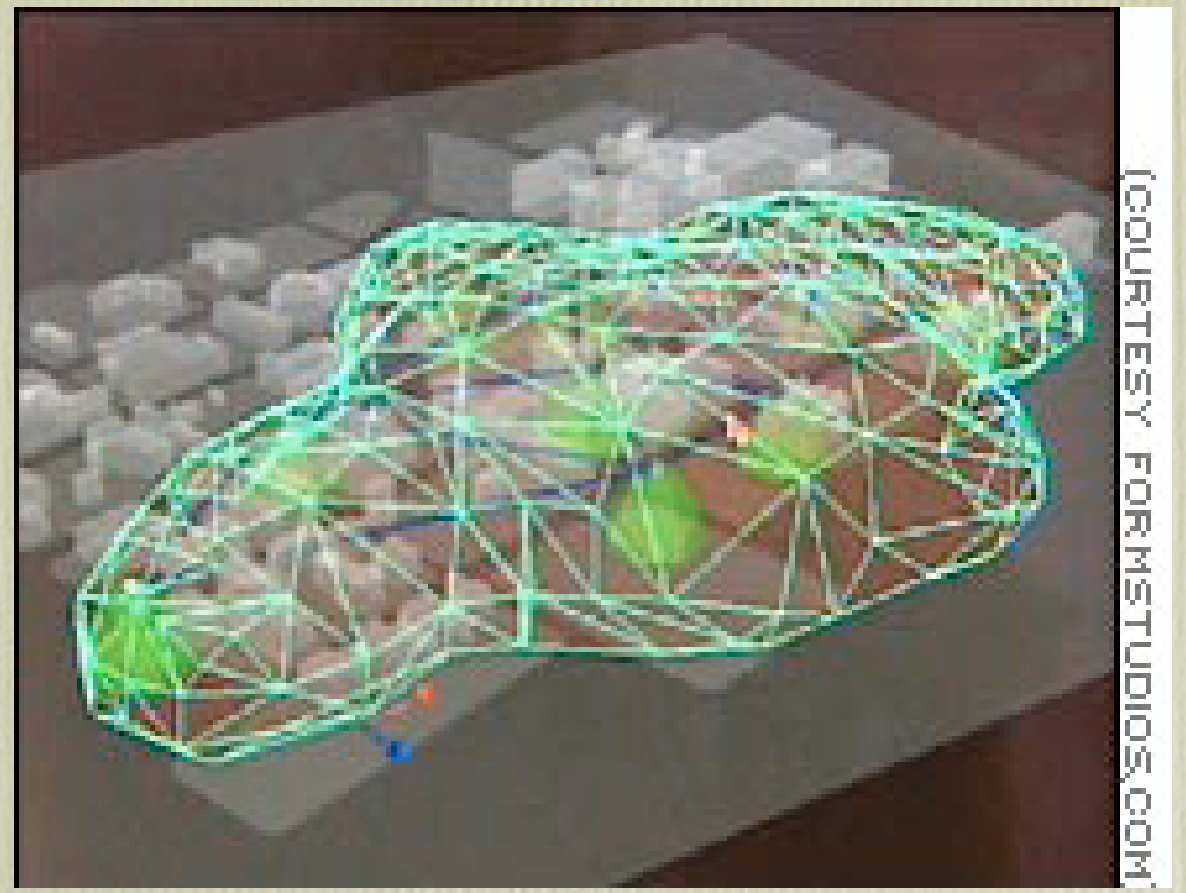
Purpose: to provide a multi-purpose information center for isolated regions, with high-speed (40 Mb/s) internet access and integrated local wireless communications, at affordable cost for developing nations

Telemedicine
Agricultural extension services
Environmental monitoring
Education

Computer Lab
Electronic Commerce
Banking
Digital Services

Microwave Network among Hawaiian Islands

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

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 (*inset*) 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

Mobil Learning Era

The evidence is overwhelming that mobile learning (m-Learning) is beginning to take hold:

- Over 50 percent of all employees spend up to half of their time outside the office.
- More than 75 percent of all Internet viewing will be carried out on wireless platforms by 2002.
- Mobile devices will outnumber landline PCs by 2002 and exceed the 1 billion mark the following year.
- More than 525 million web-enabled phones will be shipped by 2003.
- Worldwide mobile commerce market will reach $200 billion by 2004.
- There will be more than 1 billion wireless internet subscribers worldwide by 2005.

Connotations

❊ WIRED	✲ WIRELESS
❊ Slave	✲ Freedom
❊ Crime	✲ Flexibility

Problems Solved or To Be Solved

- Need for interconnection of dissimilar models.
- Interconnection of distributed databases.
- Integration of simulation models and databases.
- Advanced programming languages.
- Synchronous and asynchronous communication networks.
- Rollback mechanism for asynchronous scheduling.
- Its integration with global economic and other forecasting submodels.

Future Steps of Global Development

- Evolution of distributed gaming simulations, as splitting each country submodel of FUGI to its country expert and location,
- Globally distributed computer simulation system,
- Emergence of a public database of existing submodels,
- Interface of these dissimilar submodels.

Unavoidable Conditions of Global Peace Gaming

- Time difference among game players due to the roundness of globe
- Latency of signal of distributed simulation models to/from geo-synchronous satellite
- Head-scratching time of game players for democratic decision-making with consensus

GCEPG and ELeGI Projects

GCEPG project could be a complete and powerful demonstrator of ELeGI Project to show:

1. **the advantages coming from using advanced technologies (i.e., GRID for accessing to computing resources and collaboration environments) for supporting simulations execution, data analysis, etc., and**
2. **simulations for learning through the definition of innovative pedagogical models (i.e., socio-constructivist contextualized learning approach), and**
3. **to show all the benefits coming from the harmonized and synergistic use of advanced technologies together with innovative pedagogical models for learning (i.e., ELeGI).**

Financing

- During the Okinawa Summit in July of 2000, Japanese government pledged US$15 billion to close the digital divide in developing countries and for the eradication of poverty and isolation.

- During the G8 Summit in Canada in June of 2002, and at the Environment Summit in South Africa in September of 2002, they also pledged another US$2 billion to aid education and healthcare in developing countries, respectively.

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

Clearly, our GCEPG Project is ambitious due to its scope and nature. Any one group, university, or national government cannot achieve it. The program will however need substantial collaborative contribution of ideas, expertise, technology resources, and money from multiple sources.

We invite those who value the vision of this Globally Collaborative Environmental Peace Gaming Project to join us in this urgently necessary project for human survival.

COMPUTER SIMULATIONISTS OF THE WORLD UNITE!!

Tak Utsumi, December 2003

To build:

Global Neural (GRID) Computer Network

For:

Globally Distributed Decision Support System

With:

Globally Distributed Peace Gaming Simulation

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.

“Global Peace Through The Global University System”

Economic interdependence among nations and cultures is spawning a global economy. Such globalization inevitably magnifies the negative consequences of population growth, environmental degradation, and the unequal distribution of resources and wealth among nations. Globalization also promotes clashes of divergent cultures and belief systems, political and religious. As a result, wars and rumors of wars abound. 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.

The Global University System (GUS) is a worldwide initiative to create satellite/wireless tele- communications infrastructure and educational programs for access to educational resources across national and cultural boundaries for global peace. The GUS helps higher educational institutions in remote/rural areas of developing countries to deploy broadband Internet in order for them to close the digital divide and act as the knowledge center of their community for the eradication of poverty and isolation. Education and job skills are the keys in determining a nation's wealth and influence. At the ultimate stage, competition among nations will be competition among educational systems. The GUS education thus will promote world prosperity, justice, and peace, based on moral principles rather than political or ideological doctrines. The aim is to achieve “education and healthcare for all,” anywhere, anytime and at any pace.

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cover design: Hanna Varis

Tapio Varis - Takeshi Utsumi - William Klemm (eds.)
GLOBAL PEACE THROUGH THE GLOBAL UNIVERSITY SYSTEM

RCVE

Tapio Varis - Takeshi Utsumi - William Klemm (eds.)

GLOBAL PEACE THROUGH THE GLOBAL UNIVERSITY SYSTEM

UNESCO Chair in Global e-Learning
University of Tampere, Research Centre for Vocational Education