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**2. Global University System (GUS)**

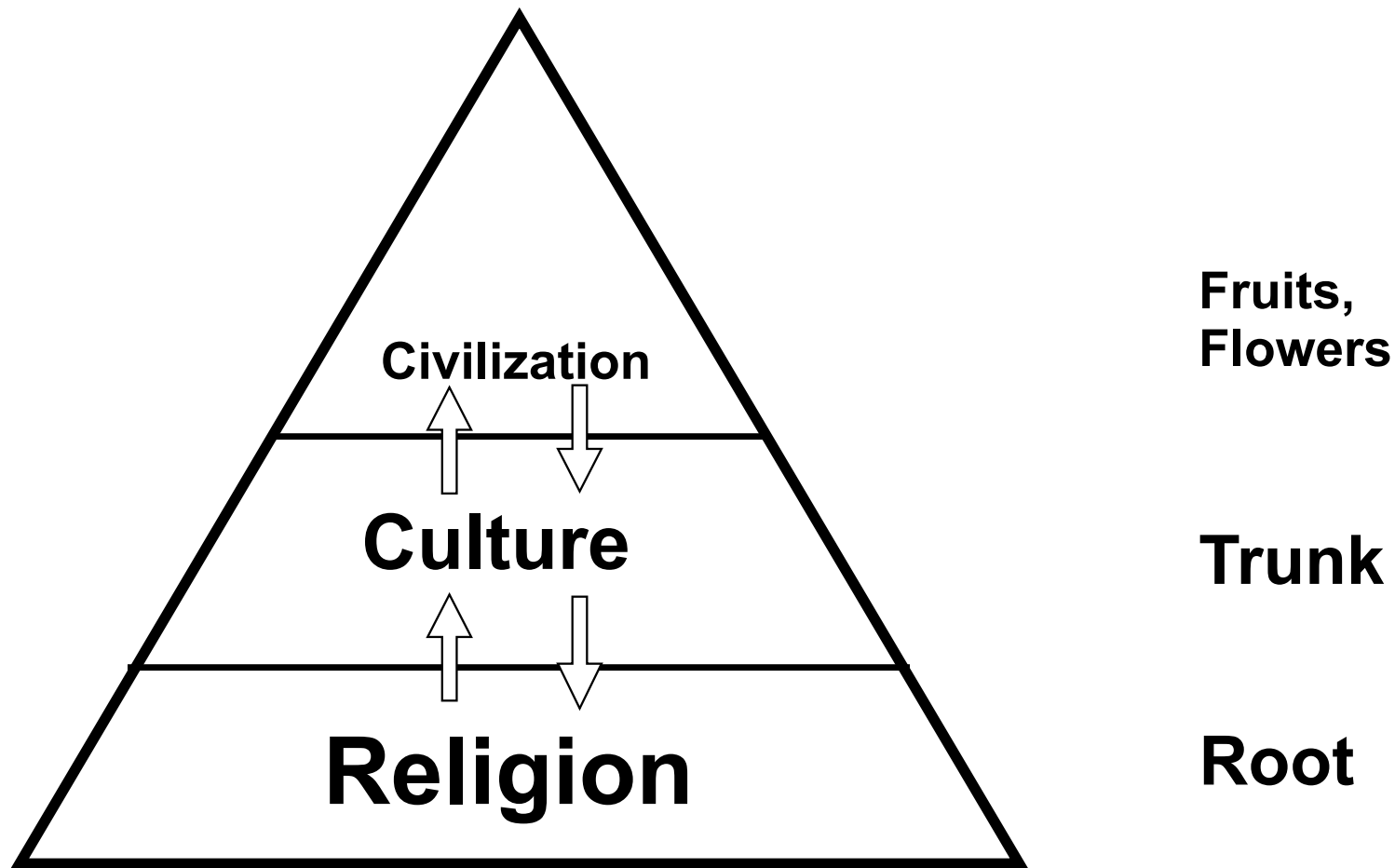
**3. Globally Collaborative Environmental Peace Gaming (GCEPG)**

**Globally Collaborative Innovation Network (GCIN)**

# 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**

# Hierarchy of Civilization, Culture and Religion



# **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

# **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.**

# **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**

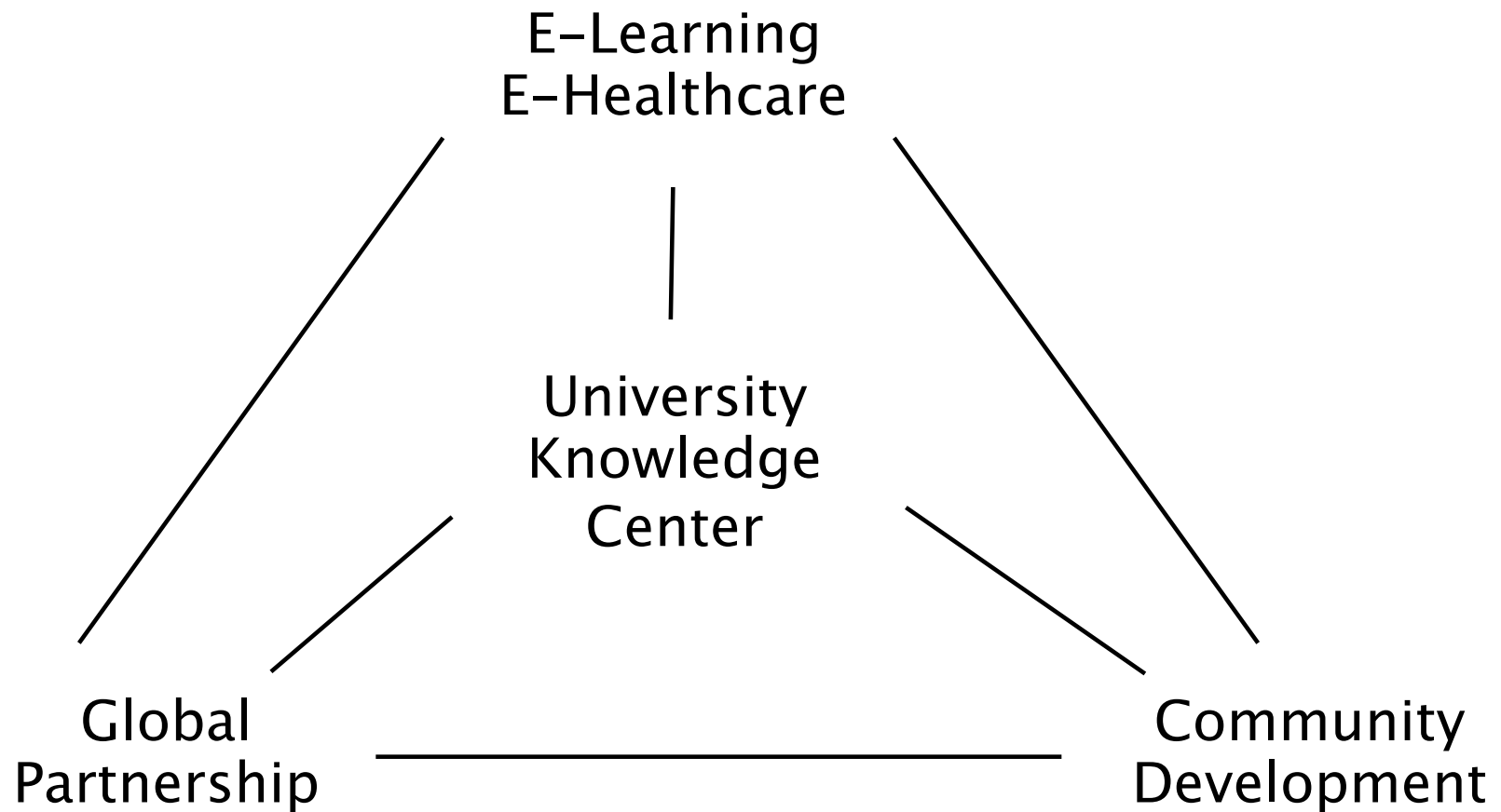
**GUS aims to create a worldwide consortium of educational and healthcare institutions and NGOs, particularly benefiting those in remote/rural areas of developing countries for the eradication of poverty and isolation.**

**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.**

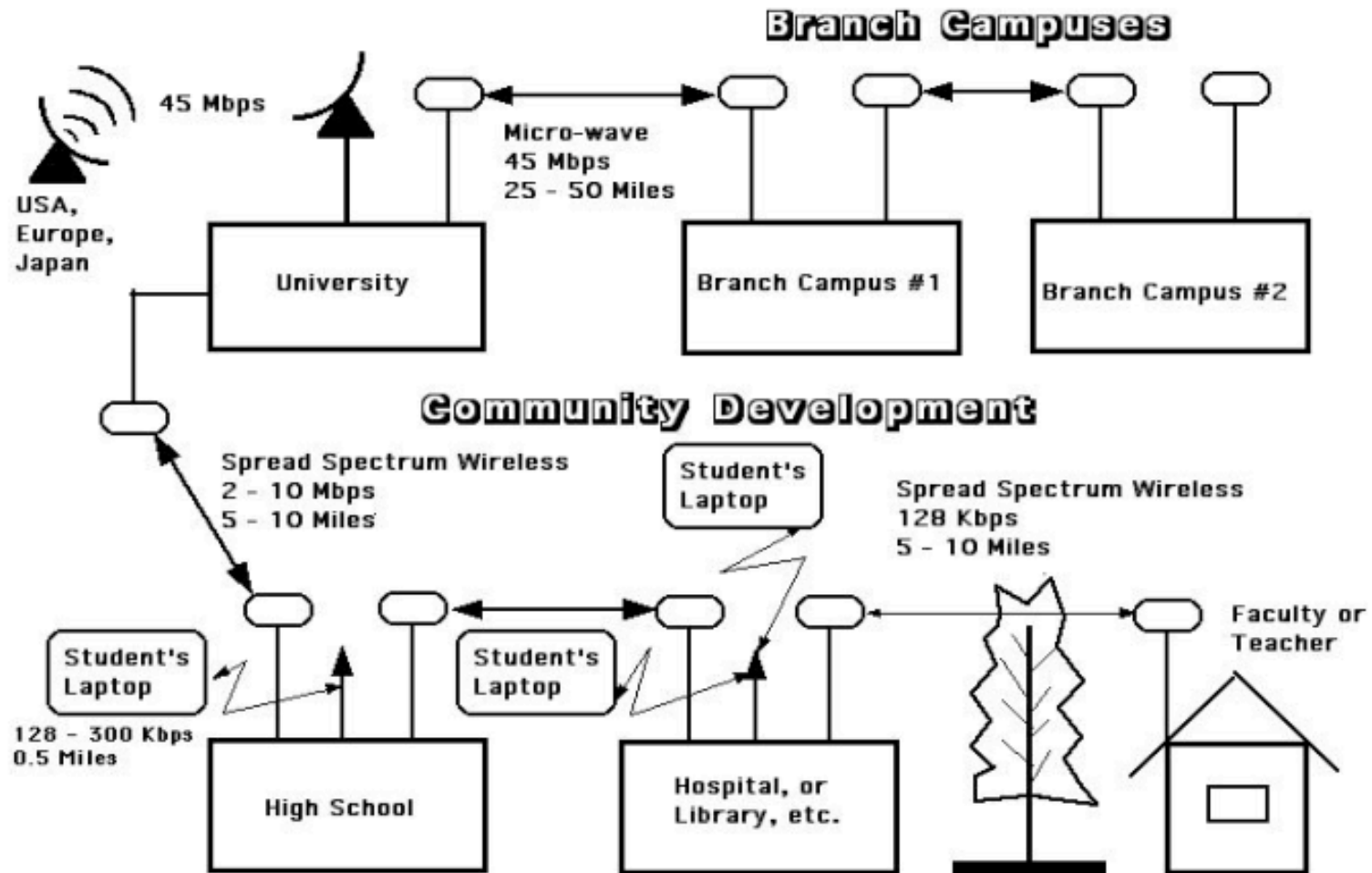
**Thus, the higher education institutions will close the digital divide, act as the knowledge center of their community and lead their development.**

# University: Leader of Community in the Knowledge Society in the 21st Century

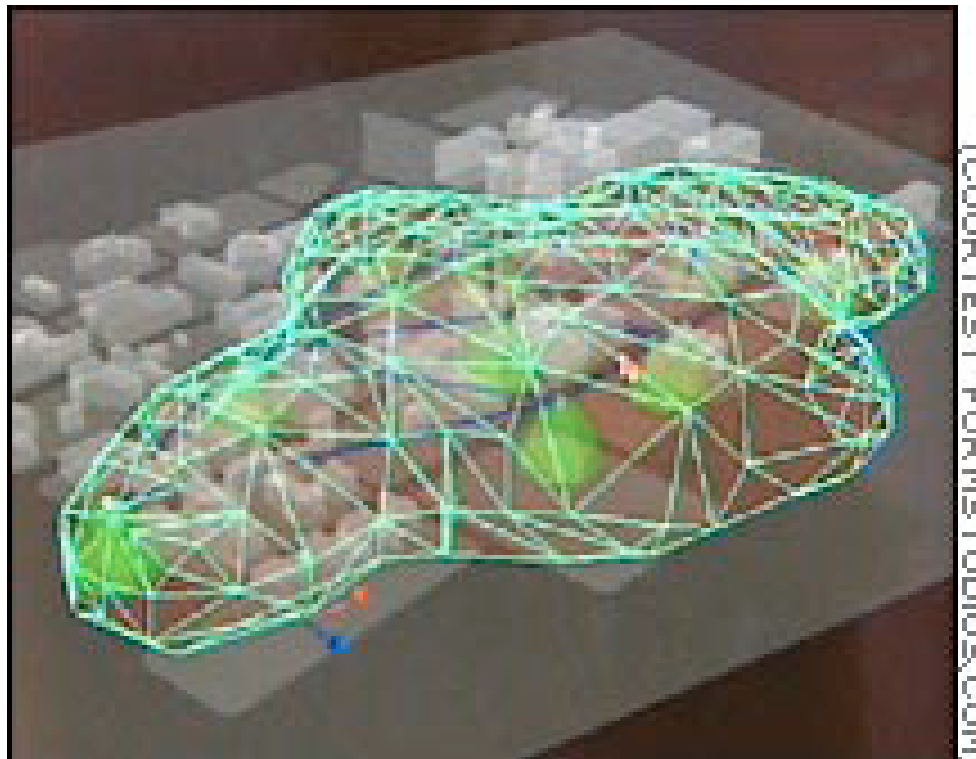


# Global Broadband Internet (GBI) Virtual Private Network with QoS

Global Broadband Wireless and Satellite Internet Virtual Private Network (11-9-02)



# 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**

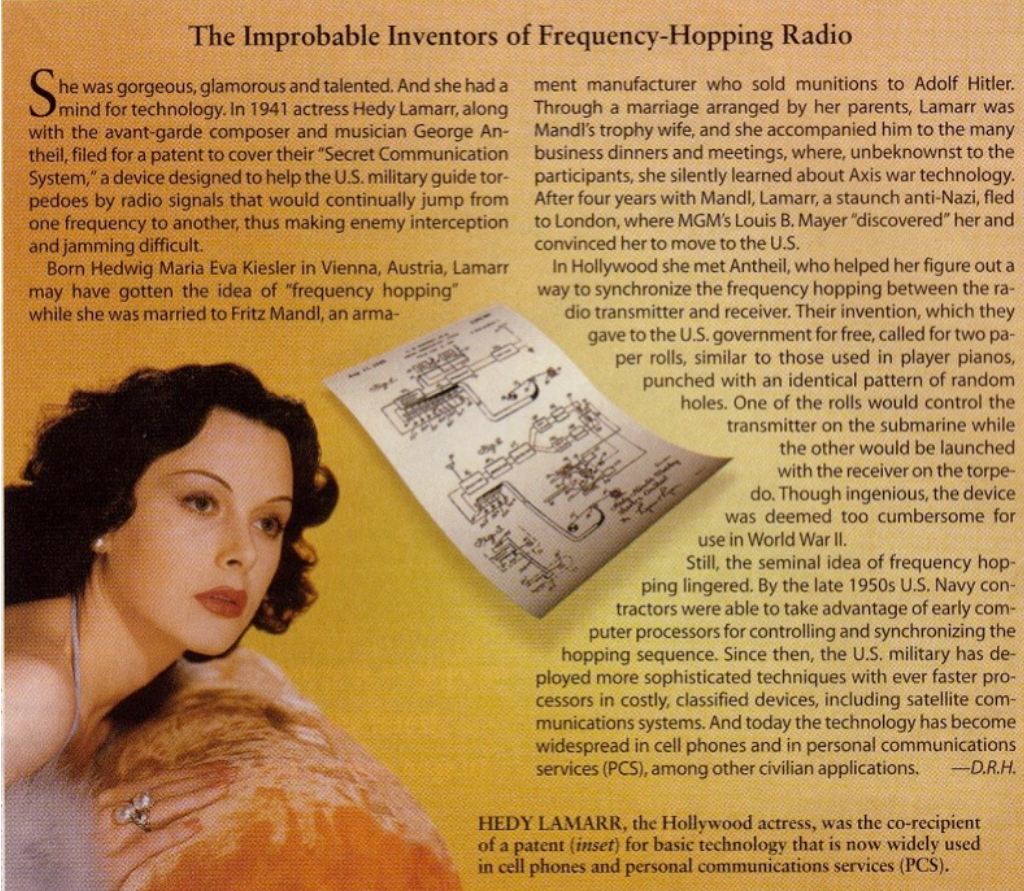
She was gorgeous, glamorous and talented. And she had a mind for technology. In 1941 actress Hedy Lamarr, along with the avant-garde composer and musician George Antheil, filed for a patent to cover their "Secret Communication System," a device designed to help the U.S. military guide torpedoes by radio 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.

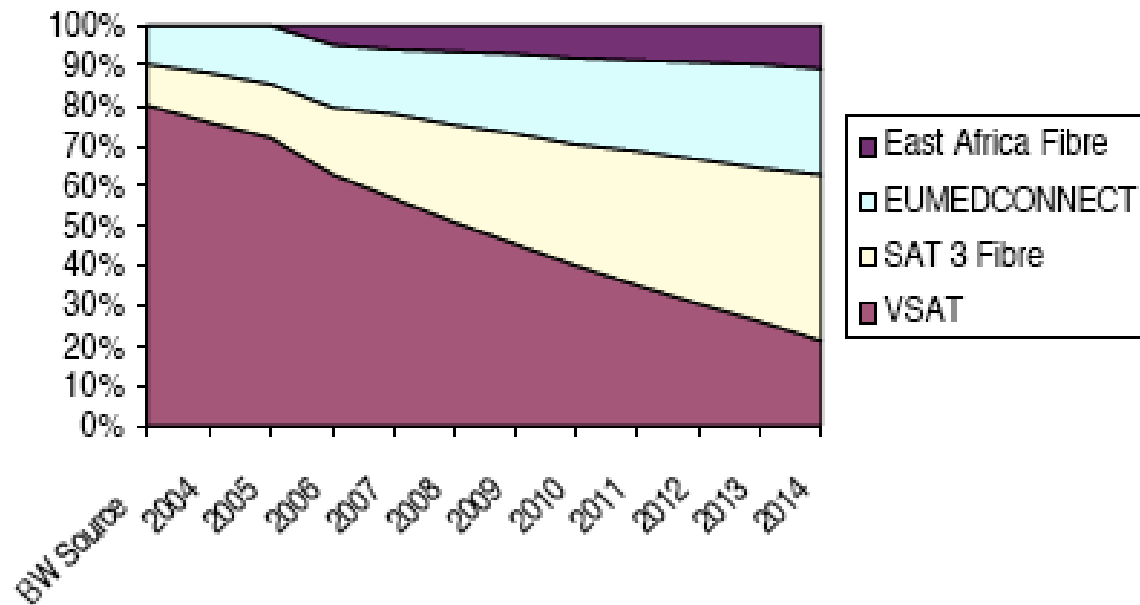
HEDY LAMARR, the Hollywood actress, was the co-recipient of a patent (*inset*) for basic technology that is now widely used in cell phones and personal communications services (PCS).



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

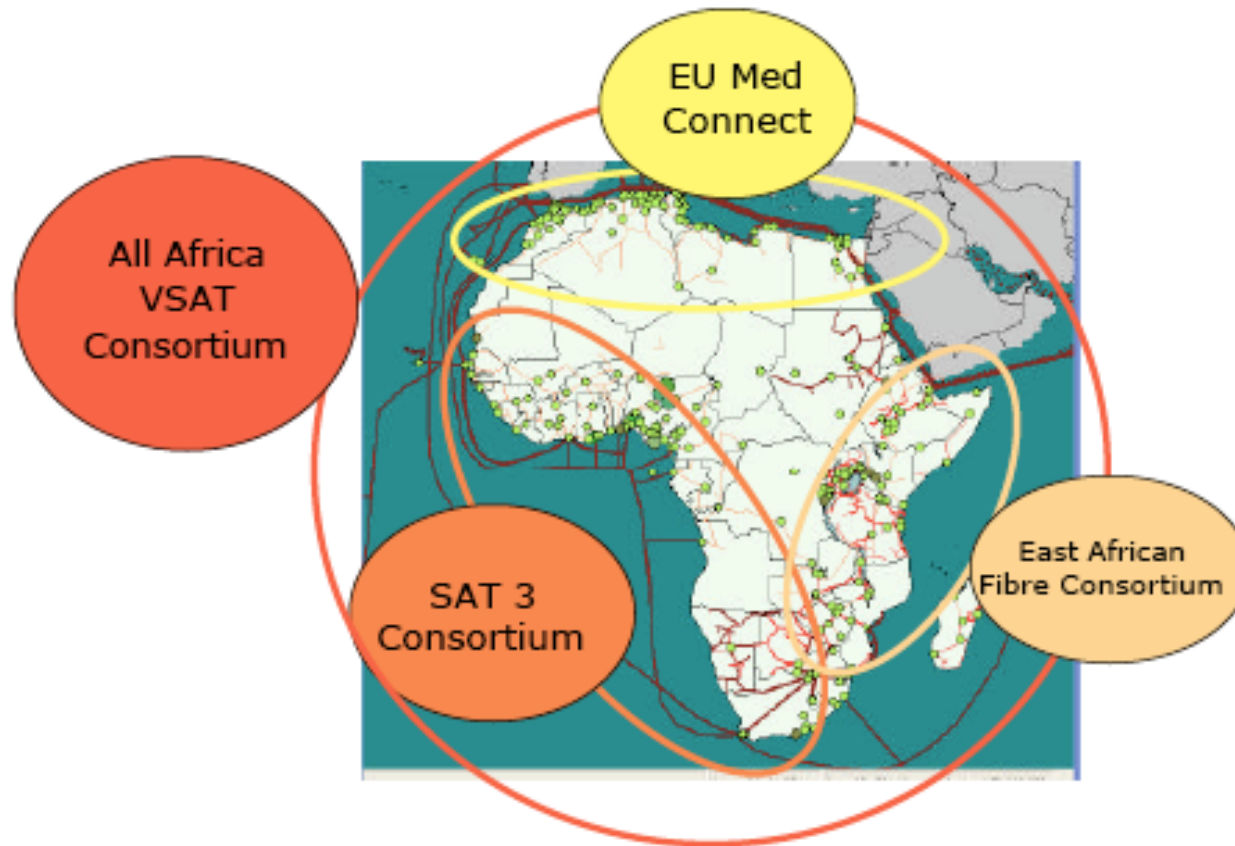
# Possible Shifts in Bandwidth Sources for Africa

[http://www.connectivityafrica.ca/page.php?file=PAREN\\_Report\\_final.pdf](http://www.connectivityafrica.ca/page.php?file=PAREN_Report_final.pdf)



# Potential Consortia in Africa



[http://www.connectivityafrica.ca/page.php?file=PAREN\\_Report\\_final.pdf](http://www.connectivityafrica.ca/page.php?file=PAREN_Report_final.pdf)



# 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



# **Three Necessary Components for Peace Gaming**

## **1. Telecommunication Infrastructure**

**Packet-Switching Telecommunication**

**Internet**

## **2. Communication Means**

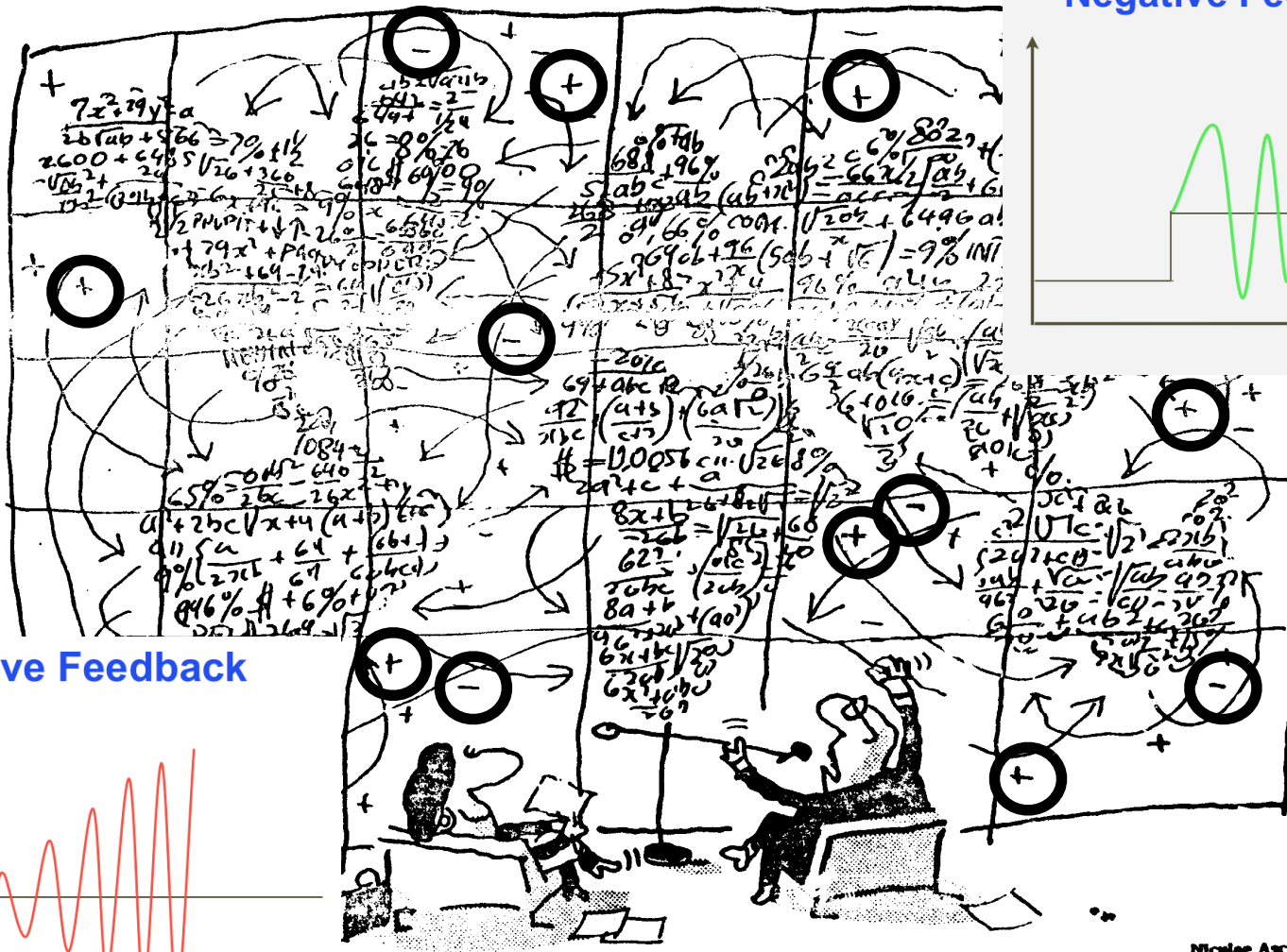
**E-mail**

**Multimedia**

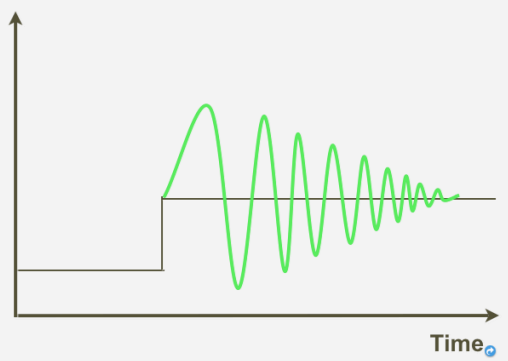
## **3. Game Players**

**Global University System**

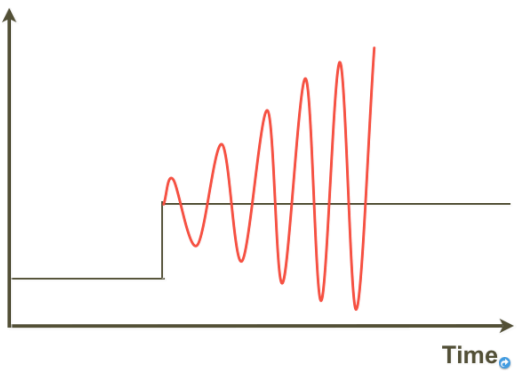
# Systems Analysis of the World



Negative Feedback



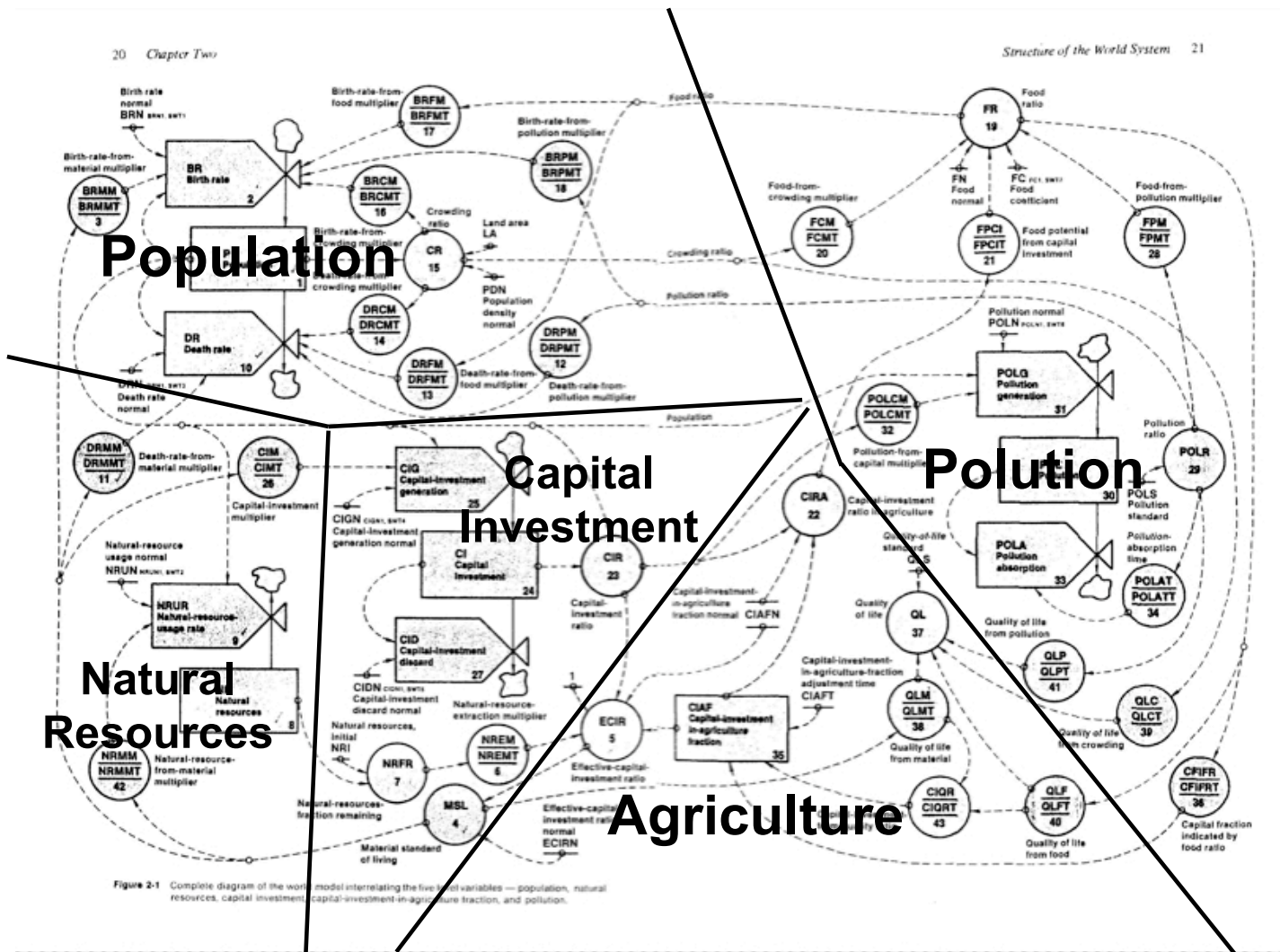
Positive Feedback



THE NEW YORK TIMES, SUNDAY, APRIL 6, 1986

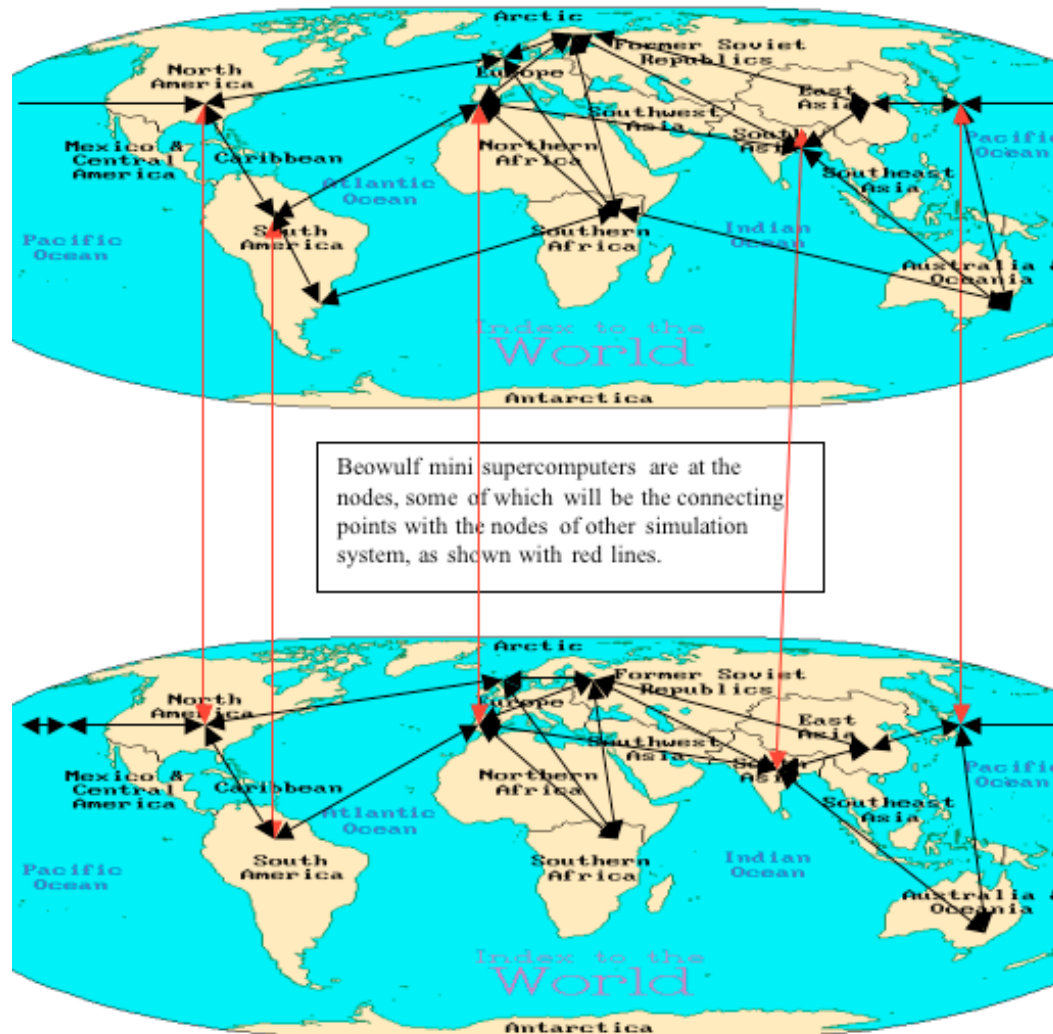
Nicolae Anicu

# Cause-and-Effect Diagram of World Dynamics Model



# Globally Collaborative Environmental Peace Gaming (GCEPG)

## Globally Distributed Climate Simulation System



## Globally Distributed Socio-Economic-Environmental Simulation System

# 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)