

## **Global Social Transformation**

All of us, as a society, are witnessing an extraordinary historical transition between the Industrial Age and the Information -- or Digital Age.

When a society's fundamental technologies change and its economy begins to transform, the political and social institutions inevitably follow.

In this new era, nothing will be as important as education. The current educational systems of the developed world -- suited to the requirements of the masses of the Industrial Age -- is becoming obsolete. We, and our children, need to be prepared.

With multimedia personal computers, learning will become interactive and individualized.

The man-in-the-street and politicians alike are asking the same questions -- where are we and where are we going?

From a flyer of TELECOM Interactivity 97 of ITU

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**Distinguished delegates, Ladies and Gentlemen.**

**It is my great honor and privilege to have this opportunity to describe our “Global University System (GUS)” project along with “Globally Collaborative Environmental Peace Gaming” project, for which I have been working in the past three decades.**

# Dawn of 21st Century

1. Digitalization  
Analog to Digital
2. Globalization  
Local to Global
3. New Economy  
Obedience to Creativity

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**Vision of GUS:** 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.

Circuit switching to packet switching -- “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 latter -- incidence of Nobel economic laureate of Columbia University.**

Dr. Kaisa Kautto-Koivula of Nokia said in her paper in Part II of the 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.

Rainbow Bridge Across the Pacific  
太平洋に架ける虹の橋

Book of John (1:1)

εν αρχη, ην ο λογος,  
(beginning) (Word)

In the beginning, there was Word,

και ο λογος ην προς τον θεον,  
(and) (Word) (with) (God)  
and the Word was with God,

και θεος ην ο λογος.  
(and) (God) (was) (Word).  
and God was the Word.

June 24, 1998



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**I remembered this verse of the Book of John in the New Testament, which I learned in ancient Greek in my college age.**

**Dr. Joshua Lederberg, President emeritus, Rockefeller University and Nobel Laureate in Genetics, once said to me during a seminar at Columbia University that this phrase is his psyche.**

# Logos

1. Soul, God, Truth → Religion
2. Greek origin of logic → zero (0) and one (1)  
→ Computer
3. Word → Communication  
→ Internet

God created the integers and the rest is the work of man.  
Famous mathematician, Kronecker  
The New York Times, October 23, 1988

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The word “Logos” has the meaning of “Soul,” “God,” and “Truth,” in religion.

It is the Greek origin of the English word “logic,” -- like “Yes,” or “No,” and zero (0) and one (1) which are the basis of computer.

The “Logos” was also translated to “word” in King James Bible.

I thought that it was erroneous translation and it should have been translated to “logic.” However, I realized that the “word” is the basis of communication which is the basis of human understanding for world peace. Internet is now becoming the future of telecommunications.

Almost a quarter century ago, I helped to extend the predecessor of Internet to various overseas countries, particularly to Japan, etc., (the so-called “Closing Digital Divide” nowadays), and also de-regulated the Japanese telecom policies for the use of email. This was emulated in many other countries -- nowadays, over 750 million people use email around the world.

## Five Pillars of Information Age

- Numbers are used to represent all information.
- These numbers are **1s** and **0s**.
- Computers transform information by doing arithmetic on these numbers.
- Communication systems move information around by moving these numbers.
- Computers and communication systems combine to form computer networks. Computer networks are tomorrow's information infrastructures, which in turn are the basis of the Information Marketplace.

**Rainbow Bridge Across the Pacific**  
太平洋に架ける虹の橋

**Mathematical Expression  
of  
Religions and Cultures**

Judeo-Christianity

$$\frac{1}{0}$$

Islam  
(Arabic numeral)

=

∞

Buddhism

Peaceful  
coexistence  
of those  
three  
religions can  
bring **Infinite**  
**Possibilities**

June 24, 1998 GLOSAS / USA Slide #9

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**Judeo-Christianity is Monotheism with One and Absolute God.**

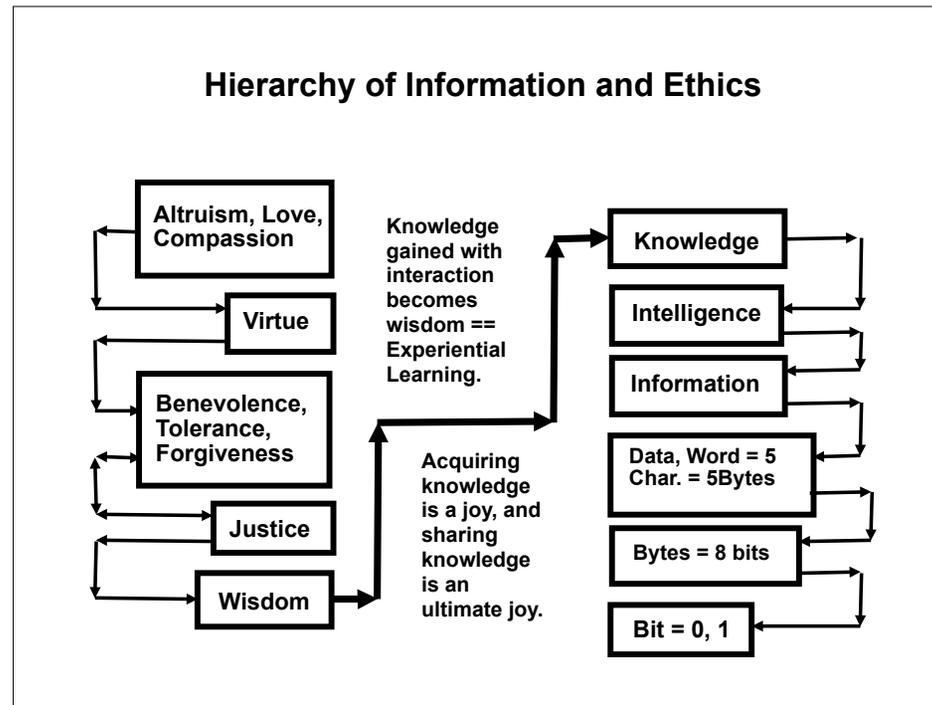
**Arabic countries introduced the concept of Zero (0) with Arabic numeral to the western world which was invented in India.**

**This is in contrast to Roman numeral -- which is almost impossible for multiplying, say, 14 (XIV) by 8 (VIII). Therefore, this introduction was the most significant contribution of Arabic (Islamic) countries to the scientific advancement of the western world.**

**At the time when Julian calendar was set by Julian, Emperor of Rome (361-363), there was no zero (0) so that the new millennium was started with one (I). This was corrected by Gregorian calendar by Pope Gregory XIII in 1582 which starts a new millennium with zero (0). As you may recall, some countries celebrated the start of the Third Millennium at the new year's day of 2000, and others of 2001.**

**If you divide one by zero, you will get infinity which is the symbol of Buddhism.**

**This may be said as Utsumi's equation in comparison with Einstein's  $E=MC^2$  -- my big joke?!**



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**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 has to be two-way interaction.**

# Knowledge and Wisdom

 **“Knowledge is power.”**

Francis Bacon



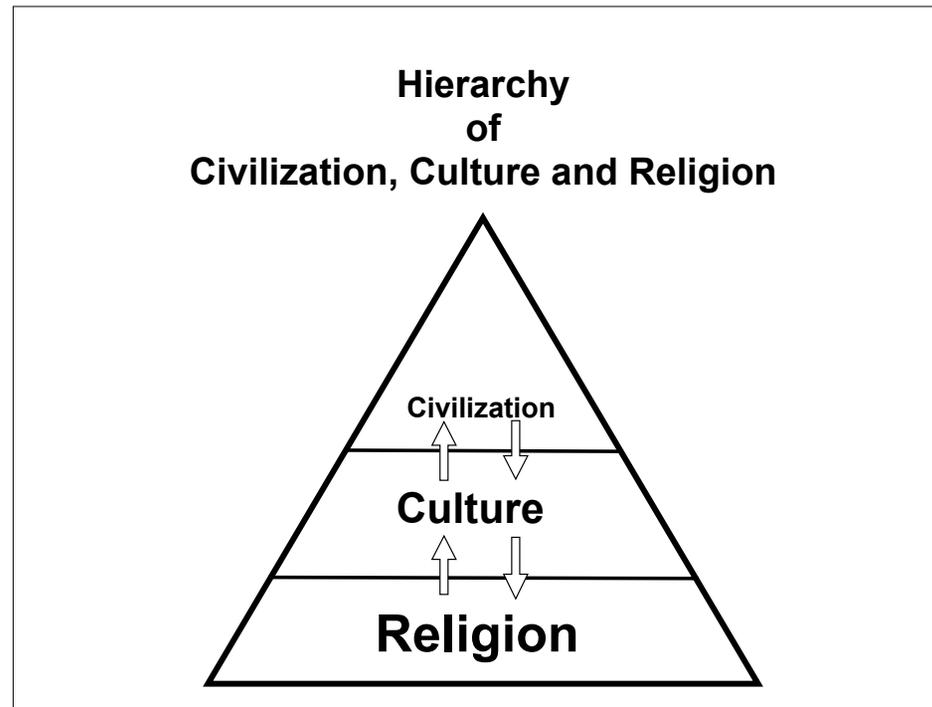
 **“Knowledge cuts up the world;  
Wisdom makes it whole.”**

David Maybury-Lewis

The New York Times Book Review (Date Unknown)



 **Analysis and Synthesis**



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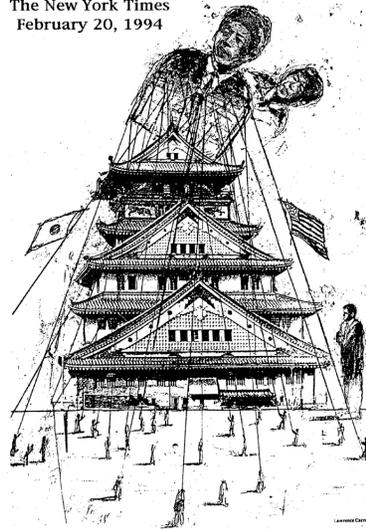
Portugal was the first western country Japan dealt with almost a half millennium ago. We learned a lot from them -- we have many Portuguese-Japanese words, for example, “OBRIGATO” for “ARIGATO (not Arigator!!)” for “thank you,” etc. In 1549, St. Francisco de Xavier was sent to Japan by John III of Portugal to spread Christianity and gained many converts to the Roman Catholic Church, but, alas, after obtaining the technology of musket gun, Tokugawa Shogunate banned the spread of Christianity -- subsequently, Christian population in Japan is still only less than 1% even after a half millennium since Xavier’s introduction.

This is the first precedence of the Japanese technology transfer pattern, i.e., cream-skimming civilization (the fruits of science and technology), but not importing culture nor religion. Although I admit that this is a provocative statement, this pattern is, I believe, the cause of the serious doldrums of current Japanese economy after bursting its bubble almost a dozen years ago.

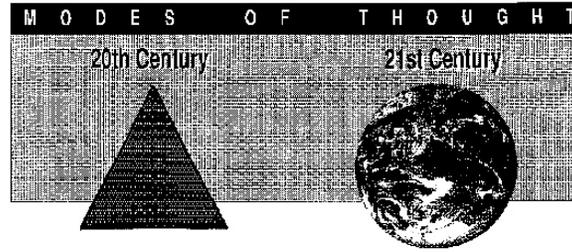
**Religion = Root,**  
**Culture = Trunk,**  
**Civilization = Flower and Fruit. -- Need of cross polination for a new global society.**

# Crumbling Feudalistic Hierarchy

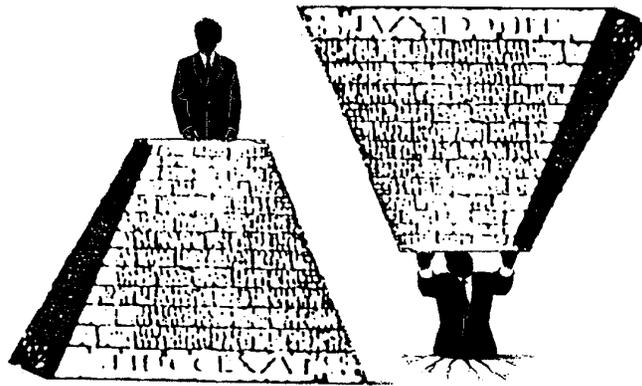
The New York Times  
February 20, 1994



## Mind Change 20th Century to 21st Century

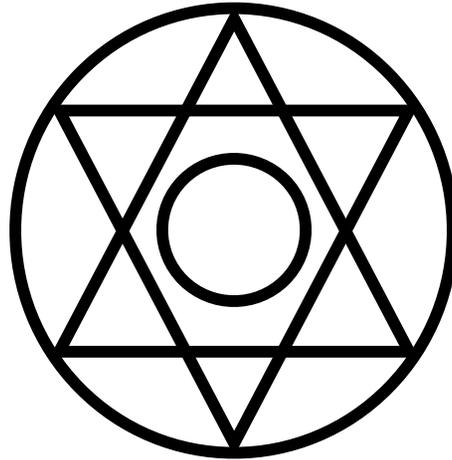


# Private vs Public Service



"Why Business Fail in Government," The New York Times, 1987

## Logo of GLOSAS/USA



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Vertical pyramid can be a symbol of conventional, feudalistic, militaristic, command and control hierarchy. Inverse pyramid is for the space station library system we advocate. Star of David is the symbol of Judeo-Christianity and Western culture based on justice, equality, and liberty.

The circles are the globe and the geosynchronous orbit. The circle is a symbol of Buddhism and Oriental culture, which are holistic and compassion.

(a) The inner circle, globe and earth, is in light green, like the color of sprouting flora, signifying the source of oxygen -- without which no fauna can live. It also signifies the creativity of youngsters -- which is the driving force for betterment of human life. As we must protect flora in our environment, we must foster and cherish the creativity of youngsters.

(b) The vertical pyramid, conventional (analog) satellite system, is in scarlet, like the color of blood -- without which no living creature have life. It also signifies passion and feeling -- without which human life will not have beautiful poem, literature, painting, music, etc., and will be very dry society.

(c) The inverse pyramid, our advocating space station library system, is in royal purple which was used only by dynasty in ancient China. Our human's destiny must be royal and aristocratic, in a sense that it will give more than take.

(d) The outer circle, total of conventional satellite and space station library systems, is in deep blue of open sky, signifying intelligence and rationality.

The logo therefore represents space-age high technology and intercultural philosophy and moral principle.

## 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.**

## **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

## **On Peace**

**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

## **Global Leader**

**“The great leaders of tomorrow will be the ones who understand how to get everyone to participate.”**

FORTUNE, January 25, 1993, Page 69

## **Principle of Global E-Learning**

- 🌐 Collaborative Learning**
- 🌐 Experiential Learning**
- 🌐 Objective Learning**
- 🌐 Autonomous Learning**

# **Chinese Proverb**

**When I hear, I forget.**

**When I see, I remember.**

**When I do, I know.**

**Knowledge applies with interaction  
becomes wisdom.**

**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.

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## Conclusion

**The GUS program is a comprehensive and holistic approach to building smart communities 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. Early efforts have included international teleconference technology workshops that have tested the satellite/wireless technology that will be used in GUS.**

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

Muito Obrigado

**Arigato**

(“Thank you” in Japanese)

(not alligator)