American Association of
State Colleges and Universities

Society for College
and University Planning

The New York Times

present

Scanning the Future

Virtual Seminar

**Tuesday, March 7, 2006
3:30 PM – 5:00 PM Eastern
2:30 PM – 4:00 PM Central
1:30 PM – 3:00 PM Mountain
12:30 PM – 2:00 PM Pacific**

Featuring:

**Felice Nudelman, Webcast Moderator
&
Erik Peterson, Presenter**

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Webcast Moderator:

Felice Nudelman oversees college relations and marketing for *The New York Times* and is responsible for developing national strategies, university partnerships and new business opportunities. She manages the college website (www.nytimes.com/college) with NYT Digital. In 2002, she received *The Times* "GrandSlam Award" for her work. Before joining *The Times* as the college marketing manager in 2000, Nudelman served as executive director for Pace University's School of Education. She served on Pace University's committee for continuing, corporate and distance education and on the associate and assistant dean's committee engaged in the formation of policy and procedures and strategic planning for administrative functions. In 1997 she received Pace's Outstanding Contribution award for her work. Previously, she was associate dean of academic affairs at Bloomfield College. While there, she was awarded the National Academic Advising Association's award for Best Advising Program in the country. In addition to teaching courses in the humanities and arts divisions she worked with a team of faculty to develop a women's studies interdisciplinary minor. Nudelman obtained her BA in Fine Arts and Philosophy from Allegheny College and MFA from Pratt Institute. She received an MDP certificate from Harvard Graduate School of Education.
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Presenter:

Erik Peterson is the senior vice president at the Center for Strategic and International Studies (CSIS) and director of the Seven Revolutions Initiative, a broad-based effort to forecast key trends out to the year 2025. He also holds the William A. Schreyer Chair in Global Analysis, an endowed position named in honor of the Merrill Lynch chairman emeritus and CSIS Executive Committee member.

Seven Revolutions is a research effort that seeks to identify and analyze the distinct driving forces of change that will transform the planet and govern our interaction in the years ahead. The goal of the project is to promote strategic forward thinking among current and future leaders by considering what these changes will mean for leadership worldwide. In his research and presentations Peterson focuses on the seven revolutions in the areas of (1) population; (2) strategic resource management; (3) technological innovation and diffusion; (4) the flow of information and knowledge; (5) global economic integration; (6) the nature and mode of conflict and (7) the challenge of governance. An expert in geopolitical and country risk assessment; international trade and finance; international business strategy and global strategic planning, Peterson can present in detail on any of the seven revolutions, focusing on different regions in the world, and helping industries identify their various roles in each area.

Peterson came to the Center from Kissinger Associates, where he was director of research. He holds an MBA in international finance from the Wharton School at the University of Pennsylvania, an MA in international law and economics from the School of Advanced International Studies at the Johns Hopkins University, and a BA from Colby College. He holds the Certificate of Eastern European Studies from the University of Fribourg in Switzerland and the Certificate in International Legal Studies from The Hague Academy of International Law in the Netherlands.

Peterson has taught on emerging markets at the American University School of International Service and lectured on international economics and finance and geopolitical risk at other colleges and universities, including Chapman and George Mason Universities, Georgia Tech, and the Wharton School. He is a fellow of the World Economic Forum, a board member of the Center for Global Business Studies at the Pennsylvania State University, a member of the Advisory Board of the Global Capital Markets Center at Duke University, and a member of the Advisory Board of the Center for the Study of the Presidency. epeterso@csis.org

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For questions, or to share your suggestions for future programs:

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8,700 people every hour, 145 people every minute, and 2.4 people every second are now being added to our global population…

Population Growth

By the time Christopher Columbus reached the New World, global population had reached about 500 million. By July 1, 2005, population had increased by a factor of thirteen, to 6.5 billion—the majority of this growth having occurred between the end of the Second World War and the present. By 2025, global population will probably reach 7.9 billion; and by 2050, there will be around 9.2 billion people on Earth.

Over the next 20 years, 80 percent of the world's population growth will occur in those countries least capable of supporting it—politically, environmentally and/or economically. In fact, according to the United Nations Population Division, between the years 2005 and 2050 nine countries alone are expected to account for nearly half of the world's population growth, and only one of these fast-growing countries—the United States—is located in the developed world.

Global Generation Gap

In contrast to the rapid growth in the developing world, much of the developed world will face the prospect of static or negative population growth. By 2025, at least 51 countries across the world are expected to be substantially less populous than they are today. The median and mean age of people in these countries will also increase significantly. By 2030 almost one in four Western Europeans will be over the age of 65. Compare that with Sub-Saharan Africa, where those over the age of 65 will account for less than four percent of the population.

Migration and Urbanization

Migration will be another key challenge facing the world of 2025, both within countries and between them. By 2025, nearly 60 percent—some 3.9 billion people—of the total world population will live in cities. In addition to resource, health and governance challenges, many of these mega-cities will be located along coastlines, making them vulnerable to natural disasters such as typhoons, tsunamis and hurricanes. The high population growth in developing countries and the negative population growth in developed countries will further increase the current rate of migration. Increased social and political backlash related to immigration issues in developed countries is likely unless governments and citizens can envision new approaches to integration and harmonization.

DID YOU KNOW?

- One person in five—1.3 billion globally—is between the ages of 10 and 19 and part of the largest youth generation in history. One-fourth of this youth cohort lives on less than $1 a day.[2]

- 87 percent of young people, ages 10-19, live in the developing world.[3]

- By 2007, over 50 percent of world population will be located in urban areas, marking the first time in history that there will be a larger urban than rural population. The proportion of the world population that is urban is expected to rise to 61 percent by 2030.[4]

- Between 2005 and 2030, the world's urban population is projected to grow at an average annual rate of 1.8 percent—nearly double the rate expected for the total population of the world (almost one percent per year). At this rate of growth, the world's urban population will double in 38 years.[5]

- By 2050, 1.2 billion of the projected 1.5 billion people 65 years or older will live in less developed countries.[6]

- Between 2002 and 2003, the world's urban population increased by 27 million, an amount larger than the entire size of Mexico City.[7]

- Nine countries—India, Pakistan, Nigeria, the Democratic Republic of Congo, Bangladesh, Uganda, the United States, Ethiopia, and China—will account for one-half of all world population growth through 2050.

- Between 2005-2050, the United States, Germany, Canada, the United Kingdom, and Australia will be the destinations of the most total international immigrants, while China, Mexico, India, Philippines, Indonesia, Pakistan, and the Ukraine will be the major exporters of these immigrants.[8]

- According to the United Nations Environment Programme, within the next three decades, 75 percent (6.4 billion) of the world's population will live within 37 miles of the coast.[9]

- Future annual fatality rates from earthquakes will rise over the next thirty years, principally from a few earthquakes near megacities with populations of 2-28 million.[10]

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of population and demographic trends. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) What exposures—from retiring baby boomers in the U.S. to a graying China to the massive overhang of Europe's elderly—do private corporations, governments, and other sectors have to worry about as the aging revolution unfolds across the globe? How will changing demographics impact workforce composition? Retirement age? Pension outlays? Taxation? Immigration? Economic growth? How can governments, corporations, and nongovernmental organizations work together to address these issues?

2) Immigration and immigrant groups already account for over 60 percent of population growth in developed countries. Do you believe that governments in developed countries are ready to deal with the massive immigration that will accompany, in many cases, a sharply decreasing number of citizens? What recent world events highlight pessimism or reason for optimism in this regard?

3) According to the United Nations Population Division, by 2050, the four largest countries in the world will be, respectively, India, China, the United States and Pakistan. What will this mean for the geopolitical balance of power? Pakistan is a prime example of the overarching global trend of the highest population growth occurring in those countries with the lowest prospects for economic development, the most dire resources scarcities, the most daunting public health challenges, and the least transparent and effective systems of governance. What will be the impact of this population growth in terms of global stability and security?

From CSIS

Visit the CSIS Global Aging Initiative (http://www.csis.org/gai) to learn more about the international economic, financial, political, and security implications of aging and depopulation. Learn more about how global aging will affect Eastern Europe, Latin America, East Asia, and South Asia in the decades to come.

Explore other recent activities, papers, and events of the Global Aging Initiative:
- *Preparing for China's Aging Challenge: The Demographics and Economics of Retirement Policy in the 21st Century*
- *The Graying of the Middle Kingdom: The Demographics and Economics of Retirement Policy in China*
- *Germany and the Challenge of Global Aging*
- *CSIS Global Aging Vulnerability Index*
- *Projecting Immigration*
- *Building Human Capital in an Aging Mexico*

Web Resources

The United Nations Population Division (http://www.un.org/esa/population/unpop.htm) remains the standard of reference for global population figures, as well as analysis of trends.

The Population Reference Bureau (http://www.pbr.org) provides detailed articles, datasheets, and reports on key population issues including mortality rates, gender, race/ethnicity, and fertility. PRB also offers specific country data.

Further Reading

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> The combined effects of population growth and income growth are expected to double global food consumption in the next 30 years...

Food

With the exception of Sub-Saharan, despite dire predictions and a projected tripling in global population, starvation and malnourishment have declined dramatically since the end of the Second World War. Food productivity has increased around the globe and we have not yet reached the "limits to growth" that were predicted in the 1970s. However, the world is reaching a point of diminishing returns. Water scarcity and quality will be a prime determinant of expanding current food production. Poor land management and the overuse of fertilizers are causing land degradation, soil erosion and desertification are taking place on a massive scale in agricultural areas from the Amazon to the Yangtze. Agricultural productivity gains and biotechnology are the big wildcards.

Water

Global trends in population growth, economic development, industrialization, and food production, among others, are placing increasing stress on the most precious finite natural resource: water. These trends are leading to a period marked by unprecedented, sweeping water scarcity, toxic water quality, and daunting sanitation challenges. By 2025, an estimated 54 countries, home to four billion people, or nearly half of the world's population, will face serious constraints on their capacity to meet water demands.[1] If not effectively addressed, global water shortages will significantly hinder economic development and could spark conflicts within and between countries. In addition, the lack of access to safe drinking water and sanitation could claim more lives by 2025 than the HIV/AIDS pandemic.

Energy

On the extensively analyzed issue of global energy futures, our view is that the trends in global demand for hydrocarbons are not likely to change significantly even through 2030. The world will become increasingly reliant on hydrocarbons during our forecast period. Not surprisingly, we expect to see an increased share of production from the Persian Gulf. By 2025 OPEC will account for up to 50 percent of the world supply of oil. Skyrocketing demand—primarily in Asia—will drive these trends. Goldman Sachs recently estimated that the number of cars in China could rise from 12 million in 2004 to 500 million by 2050. In India, the number of cars could increase even faster, from 5 million to 600 million. Compare these numbers to the 200 million vehicles currently on the road in the United States—a vehicle fleet which consumes about 11 percent of the world's current daily oil output. Aggregate increases in other sources of energy will be overshadowed by the exponential consumption of coal, oil, and natural gas in the decades ahead. As a percentage of total world energy production, nuclear energy's portion of the pie will shrink while alternative energy sources will maintain their share at 8 percent. The impact of this rise in consumption is startling in terms of potential geopolitical conflict and environmental consequences.

DID YOU KNOW?

- At the time of the 1973 Arab oil embargo, the United States imported 36 percent of its oil. It now imports 56 percent. By 2020, more than 65-75 percent of U.S. oil and refined products will be imported from foreign sources.[2]

- Nigeria and Pakistan are projected to contribute the most to global population growth. In Nigeria, per capita arable land will shrink from 0.15 to 0.0728 hectares per person by 2050; in Pakistan it will shrink from 0.09 to 0.04 hectares per person.[3]

- Americans use an average of 20 pounds of coal per person per day for electricity, which adds up to over 7,000 pounds per person per year.[4]

- By 2020, India's demand for water will exceed its supply.[5]

- In developing countries, 90-95 percent of sewage and 70 percent of industrial wastes are dumped untreated into waters where they pollute the usable water supply.[6]

- Energy consumption in developed countries is projected to increase by about 29 percent between 1999 and 2020, compared to an increase of 129 percent in Asia's developing countries.[7]

- More than 40 percent of growth in electrical production out to the year 2030 will take place in Asia, and will be based principally on coal and natural-gas-fueled plants.[8]

- The Millennium Ecosystem Assessment (2005) estimates that between 5 and 25 percent of global freshwater use exceeds long-term accessible supplies. Agricultural uses are the biggest concerns, with an estimated 15 to 35 percent of irrigation withdrawals in excess of sustainable limits.[9]

- The FAO estimates that 842 million people worldwide are undernourished.

- 950 million people, or 40 percent of urban dwellers in the developing world, live in slums where they lack one or more of such basic services as access to sufficient living space, clean water and improved sanitation facilities

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of resource management. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) How do the strategic resources of food, water and energy interrelate? How will increasing standards of living increase demand for these resources? How can countries develop sustainable strategies for ensuring the availability of these resources for human health and economic growth?

2) Despite skyrocketing demand for energy, a transition from hydrocarbons to alternative sources of energy

on a large scale is not expected to occur in the short term. Why? What actions could organizations and governments take to speed this transition? What is the long-term cost of a gradual versus a rapid move to alternatives?

3) How does poor governance in donor and recipient countries hinder the dissemination of water purification and sanitation technologies to communities in need around the globe? What steps can be taken to work around existing obstacles of governance? To improve governance?

From CSIS

The CSIS Global Strategy Institute (http://www.csis.org/gsi) zooms in on the strategic resource management question of water with its Global Water Futures Project.

Frank Verrastro directs the Energy Program at CSIS (http://www.csis.org/energy) where he, Bob Ebel, and other CSIS scholars examine issues that include nuclear energy, Caspian energy, oil market studies and strategic issues of energy. Recent publications include "The Changing Geopolitics of Energy."

Dr. Anthony Cordesman, CSIS Arleigh A. Burke Chair in Strategy (http://www.csis.org/burke), conducts a number of research endeavors on Middle East energy and security and areas pertinent to global energy policy and security.

Web Resources

Food: Authoritative global sources include the United Nations World Food Program and United Nations Food and Agriculture Program (http://www.wfp.org/english).

Water: The World Water Council's (http://www.worldwatercouncil.org/) mission is to promote awareness and build political commitment on critical water issues at all levels.

Energy: The International Energy Agency's annual publication entitled World Energy Outlook 2005 (http://www.worldenergyoutlook.org/) provides a global energy survey that includes detailed long-term projections of energy demand, energy supply and CO2 emissions. The United States Department of Energy offers a range of resources on energy sources, efficiency, environmental implications, pricing trends, and new technology.

Further Reading

Food:

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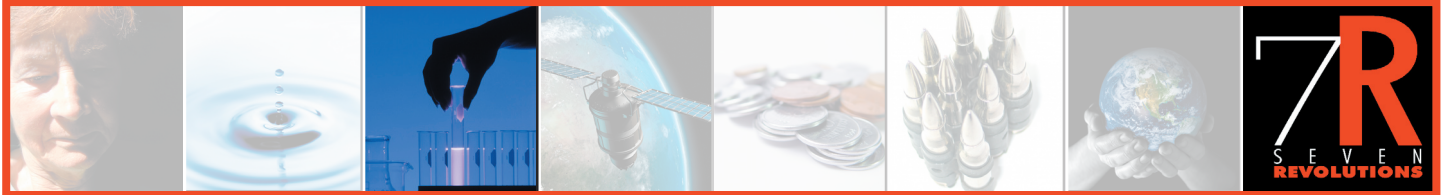
"There is always likely to be anxiety about the jobs of the future, because in the long run most of them will involve producing goods and services that have not yet been invented."- Alan Greenspan [1]

Computation

In June 2005, IBM's two eServer Blue Gene Solution computers achieved computational capacities of 280 teraflops (280 trillion calculations per second) and 114 teraflops, respectively, making them the most powerful supercomputers in the world.[2] In addition to achieving unimaginable new speeds, computers are becoming ubiquitous. Wireless laptops, personal e-mail and communication devices, media players, and on-board navigation systems are just a few examples of how technology has already made computational power and networked information constantly available. Decreased costs, more user-friendly interfaces, and smaller, lighter, less expensive materials will push the further integration of computers into our daily lives.

Genetics and Biotechnology

The completion of the Human Genome Project, mapping the 30,000 genes and sequencing the three billion chemical base pairs that make up the human genome, marked an incredible achievement in the history of humankind. In the future, we can expect greater scientific advances in the areas of proteomics—the study of the role of and interaction between the body's more than 300,000 proteins—as well as genetic and even germ-line therapy. With the advancement of new technologies and medicines, children born today could live into the 22nd century.

Nanotechnology

Scientists have already achieved significant successes in the micro-miniaturization of sensors, activators, and actuators. Micro-electromechanical machines (MEMs), smaller than dust mites and formed out of microscopic gears, chains, and computer chips, are already being deployed in medicine, agriculture, supply chain management, materials science, manufacturing, and warfare, to name just a few. According to M.C. Roco, Senior Advisor on Nanotechnology at the National Science Foundation, "[T]he worldwide annual industrial production in the nanotech sectors is expected to exceed $1 trillion 10 to 15 years from now, which would require two million nanotechnology workers."[3] During this time frame, nanotechnology will move from the current microscopic level down to the molecular and atomic level.

Technology Backlash

Unfortunately, each of these technological advancements also carries potential downsides. The combination of deep computing and pervasive computing through data mining could be used for serious violations of individual privacy. The unprecedented level of control over crops, livestock, and even human life itself has already prompted serious backlash. Future discoveries will challenge leaders to respond to new ethical complexities and public policy challenges.

DID YOU KNOW?

- There are more mobile phones in China than people in the US—some 350 million.[4]

- We have reached a point, as MIT's Nicholas Negroponte has noted, at which "a fiber the size of a human hair can deliver every issue of the Wall Street Journal ever made in less than a second."[5]

- About 60 percent of food products on US shelves have at least one ingredient that is likely from a genetically engineered crop. Byproducts of soybeans, corn, canola, and cotton constitute the vast majority of these crops.[6]

- There are no genetically modified animals approved for consumption in the U.S. [7]

- The U.S. biotechnology industry's revenue in 2004 was $42.7 billion, 78.2% of the global total.[8]

- Microbes offer unusual capabilities reflecting the diversity of their environmental niches. These may prove to be useful as a source of new genes and organisms of value in addressing bioremediation, global change, biotechnology, and energy production.[9]

- Computing elements are expected to drop so dramatically in price that they can be integrated at negligible cost into fabrics and other materials (offering early warning smoke detection, for instance). [10]

- In 2002 the world spent an aggregate of $2 billion a year in nanotechnology research. In 2005 alone, the US government invested approximately $1.1 billion in such research—eight times its 1997 funding level.[11]

- If built with molecular components using nanotechnology, the equivalent of a modern microprocessor will fit in roughly 1/1000 of a cubic micron. Megabytes of fast RAM and gigabytes of tape-like storage with sub-millisecond access times will fit within a cubic micron.[12]

- Nanotechnology has the potential to detect and destroy cancer cells at the molecular level. The National Cancer Institute believes that nanotechnology is vital to its stated goal of "eliminating suffering and death from cancer by 2015."[13]

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of technological advancement. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) In an age of massive data storage and information ubiquity, who should control our personal information? What will happen when an individual's genome is routinely digitized and archived? Who should control such information? The government? The private sector? The individual? How can such information be secured? What benefits and dangers does this information expose an individual to?

2) In a coming age of personalized medicine—medicine based on the genetic makeup of an individual—scientists are predicting life spans of 120 years of age and beyond for children born today in parts of the developed world. How will longer, healthier lives change concepts of retirement? Of social security and pensions? This technology is unlikely to be widely available. What consequences will result from this furthering divide in access to healthcare between rich and poor, developed and developing worlds?

3) Only in its infancy, nanotechnology has already yielded materials harder than diamond and technologies to attack cancer on the molecular level. It will likely be a trillion dollar industry by 2020. Surprisingly, it may also be the first industry to emerge simultaneously in the developed and developing worlds. What are the prospects in other fields to begin to address the massive technological gap between the developed and developing "worlds"?

4) Why is it important that developed countries not simply leave behind the developing world as they continue the age of technological revolution? Is Thomas Friedman correct in his statement that information technology is bridging the gap and allowing geniuses in developing countries to "innovate without having to emigrate"? Will we see the end of the emigration of skilled workers from the developing world or more internal migration of skilled workers within it?

From CSIS

The Technology and Public Policy Program (http://www.csis.org/researchfocus/TechnologyPolicy) at CSIS provides a look at emerging technologies and the issues they present for public policy and national security in the twenty-first century.

The CSIS Biotechnology Project (http://www.csis.org/biotech) hosts a series of debates, working groups, and in-depth analytical efforts to inform the public debate on biotechnology; strengthen U.S. biotechnology research, innovation, and

Web Resources

Computation: The Top 500 (http://www.top500.org) is the list of the 500 fastest supercomputers in the world and provides interesting information on trends as well as geographic location of computers.

Genetics and Biotechnology: The Genetically Engendered Organisms Public Issues Education Project (http://www.geo-pie.cornell.edu/) provides educational materials exploring the complex scientific and social issues associated with genetic engineering.

Nanotechnology: The Center for Responsible Nanotechnology (http://www.crnano.org) researches nanotechnology-related issues—political, economic, military, humanitarian, and technological. Its purpose is to investigate the societal implications, long-range risks, and effective use of nanotechnology, and to educate those who will influence its use, or who will be affected by it. The National Nanotechnology Initiative coordinates the multiagency U.S. efforts in nanoscale science, engineering, and technology. It gathers and conducts research on applications of nanotechnology and the societal and safety implications of the technology

Further Reading

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14

M.I.T. is now developing a durable wireless laptop computer made for use in the developing world. This laptop will be sold for $100 each to nations around the world for free distribution to students.[1]

Death of Distance

We are witnessing the growth of what former Federal Reserve Chairman, Alan Greenspan, has termed the "weightless economy"—an economy in which knowledge and technical capacity assume ever more significant positions relative to the "material" world. The best students and entrepreneurs of the developing world are no longer limited by geography and their home country's development. As information technology continues to reach these workers, they will be able to compete more directly with those in the developed world.

Re-Learning Process

In the wake of this competition, information will become increasingly perishable. Furthermore, as the information economy continues to mature, average workers will experience a half-dozen major career changes during the course of their professional lives. In a highly dynamic, knowledge-based economy, constant learning and retraining are not simply desirable; they are necessary to stay relevant. Education systems must adapt to prepare individuals to compete in the global arena. The growing prevalence of cyber-universities and distance-learning courses are an outgrowth of this anticipated need, both in the developed and developing world.

Truth Defined

The information revolution is also facilitating the decentralization and proliferation of media. The dominance, credibility, and profitability of traditional print and television has faced a succession of challengers: infotainment, headline news, talk radio, satellite stations such as Al Jazeera, and today, blogs. With the proliferation of these diverse sources, individuals can choose their own sources of information and thus choose their own truth. Groups that were once outsiders can organize and impact policymaking on a real-time basis. However, the vast majority of humanity still lacks access to information and communication technologies, and they are locked out of the digital revolution—especially in Latin America, Africa and the Middle East. With governments and traditional media elites facing stiff competition, what forms of media will dominate this new era?

DID YOU KNOW?

- Ninety-nine percent of the public schools in the US have access to the Internet.[2]

- The University of California-Berkeley estimates that 14 million jobs are vulnerable to moving overseas in the next few years ("outsourcing"). These jobs will be replaced with more qualitative (knowledge-based) positions, for which an adequate supply of workers may not be prepared.[3]

- Blog search engine Technorati estimates that there are 16.5 million blogs as of September 2005. This count doubles every five months.[4]

- By 2015, 80 percent of people currently entered into the workforce will remain. Yet, 80 percent of current technology will be replaced with new technology to which existing workers must adapt.[5]

- Between the early 1980s and the Iraq War in 2003, American news coverage of foreign affairs dropped by two-thirds.[6]

- About three in ten Americans now get their news primarily from online sources.[7]

- Open and distance learning has existed for about 100 years in the more developed regions and for one or two generations in the developing regions.[8]

- In the U.S. in 2000-2001, 89 percent of public four-year institutions offered distance learning courses, compared with 40 percent of private four year institutions.[9]

- The People's Republic of China has 50,000 government workers monitoring and censoring the internet.[10]

- William Nordhaus, an economist at Yale University, has calculated that under 30 percent of the goods and services consumed at the end of the 20th century were variants of the goods and services produced 100 years earlier.[11]

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of the knowledge era. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) Why are work and learning becoming "the same thing"? How can basic education prepare workers for a lifetime of adaptation, retraining and continuing education? What role will the online world play in this process? How might online education level the playing field between developed and developing countries?

2) What is the impact on media objectivity of the profusion of available information sources? Will individuals increasingly live in worlds of their own ideological and moral construction by further isolating themselves from competing ideas? Are we entering an era of "choose your truth"? How does information technology further expand the rifts between civilizations and between individuals in the same communities? How does it bridge these divides?

3) Information technology has changed the context in which governments must operate. Individual citizens and groups now have the ability to quickly organize and contest or influence the direction and mode of governance. From 24/7 news to flash mobs to blogs to political tell-alls, the rapid flow of information demands rapid results from systems of governance. How has information technology compressed the ability of governments and organizations across the board to implement long-term strategic planning? How has information technology redefined sovereign and cultural borders that once existed? How can the government leverage information technology to "fight back"? What kinds of skills and resources are needed both by the people sending the message and those receiving the information?

From CSIS

The Technology and Public Policy Program at CSIS (*http://www.csis.org/researchfocus/TechnologyPolicy/*) offers a look at emerging technologies that are creating the knowledge era and the public policy and security issues they raise.

Explore some recent projects of the Technology Program:

- *Data Mining and Data Analysis for Counterterrorism*
- *Government in the Information Age*
- *Information Technologies*
- *Intelligence, Surveillance, and Privacy*

Web Resources

The World Bank Group's Global Information & Communication Technologies Department (GICT) (http://www.worldbank.org) plays an important role in developing and promoting access to information and communications technologies (ICT) in developing countries.

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According to the UN Development Program, the accumulated wealth of the 225 richest individuals in the world is equivalent to the combined annual earnings of the 2.7 billion people at the bottom of the global income ladder.[1]

March of Globalization

Despite the rising international debate against continued economic liberalization, we believe that further global integration will continue out to the year 2025. The benefits of integration to both developed and developing countries are clear. The Euro area's GDP now rivals that of the United States while the UN maintains that economic integration has allowed a number of developing countries to achieve in 30 years what it took industrialized nations up to 100 years to accomplish.[2] Consider, for example, that real per capita GDP in Asia more than doubled between 1980 and 2000. While there may be temporary setbacks along the path to deeper integration, the world has clearly benefited from liberal economic reforms and continued momentum for greater integration appears to be likely in the long-term

"BRIC" Economies

The "BRIC" countries—Brazil, Russia, India and China—will increasingly define the world's new economic center of gravity. According to a report from Goldman Sachs, if they can consolidate conditions conducive to structural growth, the total GDP of the "BRIC" economies by the year 2025 could equal half the aggregate level of the G-6 countries (United States, Japan, Germany, UK, France and Italy). By 2040, assuming strong and sustained growth rates by the BRIC countries, they could overtake the G-6 altogether. However, the massive populations of the BRIC countries—equal to 40 percent of global population in 2025—will prevent economic growth from being translated dramatically in per capita income gains and the concentrated growth will exacerbate growing income inequity. For instance, "Forbes Asia" magazine's annual list of the richest Chinese found that there are now ten billionaires in China compared to three only a year ago. Meanwhile, GNI per capita in China remained under $1,300 in 2004.

Inequality

Income disparities will not be limited to the BRIC countries alone. Global aggregate output growth has increased on average by more than 3.6 percent annually over the last quarter century, and we expect the trend to continue through 2050. While this growth in global GDP and falling poverty rates indicate a rising economic sea level, global income inequalities have also grown. The fact remains that a staggering 2.8 billion people live on less than $2 a day. The costs for basic commodities continue to fluctuate, meaning that it is increasingly difficult for the poorest of the poor to meet daily requirements for life. These disparities - between the "haves" and "have-nots"- are fueling populist backlash against global inequity and integration. Globalization's greatest enemy is not its absolute success, but its relative concentrations.

DID YOU KNOW?

- During the 1990s the economies of developing countries that were integrated into the world economy grew more than twice as fast as the rich countries. The "non-globalizers" grew only half as fast and continue to lag behind.[3]

- During the 1990s, the average annual rate of growth of gross domestic product (GDP) for developing countries as a whole increased to 4.3 percent.[4]

- 15 percent of the world's population, located in the high-income countries, accounts for 56 percent of total consumption, while the poorest 40 percent, living in low-income countries, accounts for only 11 percent of consumption.[5]

- The poorest 10 percent of the world's people have only 1.6 percent of the income of the richest 10 percent, and the richest 1 percent receives as much income as the poorest 57 percent.[6]

- Multinational corporations virtually control economic integration; two-thirds of international trade is accounted for by just 500 corporations.[7]

- International trade is expanding faster than the world's economy – adding evidence to the claim that trade is one of the main engines of economic growth.[8]

- International trade has grown 12-fold since World War II and is expected to grow 6 percent annually for the next 10 years.

- In 1947 the average trade tariff on manufactured imports globally was 47 percent; by 1980 it was only 6 percent.[9]

- The US and Canada are the largest trading partners in the world. In 2003, two-way trade in goods and services surpassed $441.5 billion.[10]

- In absolute terms, FDI to developing countries increased from $36 billion in 1991 to $178 billion in 2000.[11]

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of economic integration. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) An integrated global supply chain means that, as Nobel Laureate Milton Friedman put it, "It is possible to produce a product anywhere, using resources from anywhere, by a company located anywhere, to be sold anywhere." What vulnerabilities are intrinsic in this system—the "just in time" supply chain—for countries, governments and organizations? How do labor and the mobility of people (migration) fit into the logic of this globally integrated economic system? In such a system, what is the importance of traditional notions of state sovereignty? Of cultural borders?

2) What will a potential shift of the economic center of gravity from the traditional G-6 countries—United States, Japan, Germany, UK, France and Italy—to the "BRIC" countries mean? Does it signal hope for a new wave of economic growth and new engines of regional prosperity to drive the global economy or does this signal the fading importance of Europe and the US? Will the rise of the BRIC countries signal the rise of middle classes within those countries or a further expansion of inequity in income distribution? How can governance challenges in each of the BRIC countries derail their economic growth? Resource challenges? Demography and population? The threat of conflict?

3) 2.8 billion people—nearly 45 percent of the world's population—live on less than two dollars a day. To what extent can global economic growth address addressing this massive need—especially in the face of information technology and the ability to quickly organize political and social movements? The rise of radical Islam, opposition movements to environmental degradation and urban-rural divides in China and India, and the "Bolivarian" movement in Venezuela led by Hugo Chavez are all examples of how perceived inequality in the global playing field can manifest itself into political movements. What is the long-term impact of such movements to the further integration of the world economy? How can the benefits of globalization be more widely distributed and the costs minimized? What specific role should the United States play in addressing global inequity? What specific role should current global powers (the EU, Japan) and rising powers (China, India, Brazil) play?

From CSIS

The William M. Scholl Chair in International Business (http://www.csis.org/schollchair/) was established to further the role that international business plays in advancing economic growth, innovation, prosperity, security, and freedom in the United States and throughout the world.

Dr. Sidney Weintraub holds the Simon Chair in Political Economy (http://www.csis.org/simonchair/). Dr. Weintraub examines issues of trade, investment and international finance, particularly in Latin America and Canada.

Web Resources

The Corporate Social Responsibility Newswire (http://www.csrwire.com/) is a reliable source to track increasingly visible corporate involvement in international affairs.

The Economist Online (http://www.economist.com/) is a premier online source for the analysis of world business and current affairs.

The World Bank (http://www.worldbank.org) works to eliminate poverty around the world by helping connect countries and their people to the benefits of globalization.

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> In 2000, there were more than 500 incidents of illegal transportation of nuclear and radioactive materials across the Russian border.[1]

Asymmetric Warfare

This new era of conflict can be characterized by asymmetric warfare in which dominant military powers are confronted by a wide range of adversaries—from non-state radical ideologies to transnational criminal elements to rogue states—employing unconventional tactics in a war ambiguous in both place and time. From suicide bombers to information warfare, the threat is multi-dimensional.

The attacks of September 11, 2001 introduced the possibility of asymmetrical super-violence, and they have been echoed time and again from London to Indonesia. In the future we can expect this trend to continue and at an ever-greater scale. Zbigniew Brzezinski, CSIS Counselor and former U.S. National Security Advisor, has warned that, "[F]rom now on, any terrorist group planning its own terrorist activity is going to use what was done on September 11 as the standard for success."

Weapons of Mass Destruction

This leads us to our second conclusion—that asymmetric foes will increasingly focus on the acquisition and use of chemical, biological and nuclear weapons (known collectively as weapons of mass destruction or WMD). As CSIS Chairman, former U.S. Senator and co-founder of the Nuclear Threat Initiative, Sam Nunn, has noted, "The terrorists are racing and we are crawling." The global nuclear black market of Pakistan's A.Q. Khan, loosely secured fissile materials in the Russian Federation, and al-Qaeda's documented pursuit of WMD all point to the urgency of this threat. The unsolved anthrax and ricin attacks in the United States underscore the threat of biological and chemical weapons.

Force Transformation

These trends—asymmetrical warfare, homeland security and WMD in the hands of non-state actors and radical regimes—represent just a few of the drivers that will shape the security landscape for the foreseeable future. In order to respond to these threats, militaries and police forces will need to employ the whole spectrum of technological solutions in coordination with a new range of human skills. They will need to change to match an amorphous, swift and deadly enemy.

DID YOU KNOW?

- One percent of the victims of significant terrorist attacks in 2004 were Americans.[2]

- More than 30 suicide bombings since 2000, according to *Time* magazine, have been carried out by children, and multiple juvenile al-Qaeda terrorists have been detained at the U.S. military prison on Guantanamo Bay in the special "Camp Iguana" facility.[3]

- The first U.S. soldier killed from hostile fire in Afghanistan was shot by a 14-year-old sniper.[4]

- The United States accounts for almost half of the world's total arms production; France and the United Kingdom for 10 per cent each; and Germany, Russia and Japan for roughly 4 per cent each.[5]

- In June 2004, the U.S. Department of Energy announced that "almost half" of the warheads in the U.S. stockpile would be retired by 2012 and eventually dismantled. The current total stockpile of 10,350 is estimated to be reduced to about 6,000 by 2012.[6]

- In 1997, A.Q. Khan began shipping nuclear supplies to North Korea. Included among these shipments were "drawings, sketches, technical data, and depleted uranium hexafluoride."[7]

- The 2005 US military budget at $420.7 billion was more than 29 times as large as the combined spending of the seven "rogue" states (Cuba, Iran, Iraq, Libya, North Korea, Sudan and Syria) that spent $14.4 billion.[8]

- The 2005 Chinese military budget was approximately 25 billion dollars.[9]

- According to the GAO, there are 120 countries or groups developing information warfare systems. Coupled with the 30,000 hacker-oriented sites, cyber-warfare will constitute a major threat in future.[10]

- The DOE estimates that only 4 kilograms of plutonium are needed to make a bomb.[11]

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of conflict and conflict resolution. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) Asymmetrical violence (including terrorism) has historically accompanied eras of global economic expansion and rapid technological change. How might the very technologies, movement of goods, people and money that power globalization also inspire violent reaction? What steps can be taken to mitigate the spread of reactionary movements to the forces of globalization? Is this violence nihilistic or simply "politics by other means"? How are economics likely to drive conflict in the future?

2) How would the global risk calculus of individuals, organizations and governments shift if a weapon of mass destruction were used in a way that resulted in massive casualties in a heavily populated city? The likelihood of such an event is high according to experts around the globe. Would such an event promote closer cooperation between countries in fighting the spread of WMD or would it drive the world further apart and back within sovereign borders and previous conceptions of the nation-state?

3) How does fighting a war against an ambiguous, non-state foe alter existing relations between countries? What are the keys to transforming military and police forces to meet the challenges of guarding against the threats of today and tomorrow? How must justice systems and international cooperation be reformed to meet these threats? How many civil liberties will citizens give up to increase their feelings of security? What actions carried out by the state on their behalf will they tolerate?

From CSIS

The CSIS International Security Program (http://www.csis.org/isp/) tracks the major security concerns the United States faces today and beyond, including strategy and regional security issues.

View the reports of the Strategic Assessment Project, prepared by Anthony H. Cordesman, Senior Fellow and the Arleigh A. Burke Chair in Strategy at CSIS (http://www.csis.org/burke/). The reports summarize the global military balance in graphic and tabular form. They are divided by region and sub-region, cover the trends in conventional forces, nuclear forces, proliferation, military effort and spending, procurement and arms import activity, force modernization, and force quality.

Visit the CSIS Transnational Threats Initiative (http://www.csis.org/tnt/) to learn more about the breadth, depth and impact of transnational threats including crime, terrorism, information warfare, and weapons of mass destruction proliferation.

The CSIS Homeland Security Program (http://www.csis.org/researchfocus/HomelandSec/) is focused on providing policy solutions to the U.S. government's newest agency by considering in a broader context the challenges it faces. The program sponsors a number of simulation exercises to help prepare for a variety of possible contingencies.

Web Resources

The National Memorial Institute for the Prevention of Terrorism (http://www.mipt.or/) located in Oklahoma City is dedicated to preventing terrorism and mitigating its effects. The Institute is a repository of knowledge on all aspects of terrorism around the world.

The Small Arms Survey (http://www.smallarmssurvey.org/) is an independent research project located at the Graduate Institute of International Studies, Geneva, Switzerland. Its reports and databases examine the role Small Arms play in destabilizing various regions and is a resource for governments, activists, and policy makers.

The Human Security Report (http://www.humansecurityreport.info/) is a document examining world wide political violence. The report was produced by the Human Security Center at The University of British Columbia.

The International Crisis Group (http://www.crisisgroup.org/home/index.cfm?) is a non-governmental organization that is dedicated to monitoring regions of instability throughout the world. The ICG provides resources and background information on all current and potential conflicts worldwide.

Further Reading

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Ninety-one percent of surveyed business executives in large companies believe that the public has a right to expect good corporate citizenship.[1]

Corporate Citizenship

Increasingly, companies face the challenge of juggling a triple bottom line from shareholders, management, and the public at large in a new form of civic engagement known as corporate citizenship. Revenues of the Wal-Mart Corporation in 2004 totaled $263 billion, placing it between Austria and Indonesia as the twenty-second largest economic entity in the world (when total revenue is compared with gross domestic product). This success comes with new responsibilities. The 2004 Cone Corporate Citizenship Study shows that eight in ten Americans say that corporate support of social causes wins their trust in a company—a 21 percent increase in this response since the first survey in 1997.[2]

Civil Society

As globalization, trade and technology impact societies, non-governmental organizations (NGOs) have become increasingly influential in world affairs—filling gaps in the provision of social services, leveraging positions in political arenas, and connecting people, money, and ideas across the world. The United Nations Human Development Report counted 37,000 registered international NGOs in 2000, and those numbers are expected to grow significantly in the decades to come.

Strategic Leadership

National and international government organizations have struggled to keep pace with the rapid change enveloping the world. They have failed to redefine core competencies vis-à-vis the emerging capacities of the private sector and NGOs. Dynamic, innovative, strategic partnerships between and amongst governments, NGOs, the private sector, and international organizations will be necessary to address the challenges highlighted in the Seven Revolutions. Just-in-time delivery, the reach of information technology and the pressures of the quarterly profit statement, election cycle, or annual report deny leaders the opportunity to think strategically and for long-term gains. In an increasingly integrated world, seeing the big picture requires a daunting breadth and depth of knowledge. Those leaders able to bridge these gaps and create a strategic vision will enable the innovative partnerships necessary to invent a better future. But such leaders and precious few are far between.

DID YOU KNOW?

• Americans, 18-25 years old, are significantly more likely to consider a company's citizenship practices when making purchasing, employment, and investment decisions.[3]

• Nine out of ten surveyed CEOs feel that partnerships between business, government, and civil society must play either a major role or some role in addressing key development challenges facing the world today.[4]

• A recent report from the World Economic Forum finds that the mainstream financial community places little emphasis on social, environmental, and ethical issues in its investment decisions.[5]

• Sixty-four percent of surveyed U.S. executives from large companies believe corporate citizenship is part of their business strategy.[6]

• For the third consecutive year, Transparency International has ranked Bangladesh in 2005 as the most corrupt country in the world. According to a World Bank study, in the absence of widespread corruption, the country could achieve 2-3 percent additional GDP growth and over the long term could double per capita income in the absence of such high levels of corruption.[7]

• Thirty new sovereign countries have been created since 1990, largely due to do the dissolution of the USSR.[8]

• Well over half of American adult men and women believe the United States would be better off if there were more women in leadership positions. However, women are significantly less likely than men to agree with this finding.[9]

• In a recent U.S. survey, more than four in five agreed with this statement: "Americans who don't keep up on important issues are a big part of today's leadership problem."[10]

• The older an American is, the less confidence she or he has in leaders of NGOs (including traditional charitable organizations).[11]

• About 2 billion people live in countries that are in danger of collapse.[12]

LEARN MORE

Use the questions below to structure a discussion on the promise and peril of challenges in governance. We offer some suggested sources to complement your consideration of these important issues.

Discussion Questions

1) We live in a world in which 13 of the top 50 economies in the world are companies, not countries. How does this change the responsibility companies now maintain for providing for social needs and addressing big ticket challenges of the future? How can companies ensure their own future prosperity by beginning to engage looming issues of concern—from energy needs to public health to income inequity?

2) If we have truly crossed the bridge from the Westphalian nation-state model, then what is the next step in the evolution of our societies? Will governments around the world continue to be overwhelmed by this new environment? Will they adapt to meet the constellation of new challenges and opportunities? Will authority become increasingly decentralized? What importance does leadership play in this new system and how can it help guide countries, corporations, organizations and institutions to necessary reform?

3) Is the proliferation of non-governmental organizations (NGOs) the result of a lack of capacity on the part of governments? Or are NGOs an innovation in human social organization and a leap forward in the diversity of participation in addressing global and local challenges? How can NGOs and governments work together to complement one another? How should the private sector involve itself in such coalitions?

From CSIS

The CSIS Hills Program on Governance (http://www.hillsgovernance.org/) focuses on the need for multinational companies and governments to work jointly to promote good governance, especially in emerging markets. Its central task is to develop an actionable agenda that promotes good governance at the intersection of the private and public sectors through dialogue and training at the mid career and university levels.

Web Resources

The United Nations (http://www.un.org), consisting of 191 countries, strives to maintain international peace and security, develop friendly relations among nations, cooperate in solving international problems, promote respect for human rights, and be a center for harmonizing the actions of nations.

The Center for Public Leadership (http://www.ksg.harvard.edu/leadership/) is dedicated to leadership education and research. It provides research, profiles of leadership role models, and polling data on leadership.

Further Reading

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Society For College and University Planning
American Association of State Colleges and Universities
The New York Times

Scanning the Future

March 7, 2006

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
1. Overall rating	☐	☐	☐	☐	☐
2. Content	☐	☐	☐	☐	☐
3. Audio quality	☐	☐	☐	☐	☐
4. Ease of registration	☐	☐	☐	☐	☐

Presenter: Overall Effectiveness

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
5. Felice Nudelman	☐	☐	☐	☐	☐
6. Erik Peterson	☐	☐	☐	☐	☐

	YES	NO
7. Would you participate in another virtual seminar?	☐	☐
8. Did the web component add to the value of the virtual seminar?	☐	☐

What was your overall impression of the event and the virtual seminar format? Any additional comments?

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