**Innovation and Integration
in the Changing Global Higher Education Landscape**

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Introduction

I would first like to thank our hosts – Cisco Systems and the City of Stockholm – for the opportunity to share ideas with education professionals and experts from around the world. This is the second year that I'm speaking at the Public Services Summit @ Nobel Week. Incidentally, the Centennial Exhibition of the Nobel Prize, "Cultures of Creativity", is currently at the National University of Singapore (NUS) – the 12th stop on its world tour.

This morning, I shall be speaking on "Innovation and Integration in the Changing Global Higher Education Landscape".

Tiny Red Dot with Big Neighbors

I shall be sharing perspectives from Singapore – "a little red dot" at the intersection of the Indian Ocean and the South China Sea.

Singapore has some big neighbors. Among them are India and China, Indonesia, Japan and Australia. From our reference point, Europe lies to the west and the United States, to our east.

There being neither retreat nor hinterland for Singapore, we have to keep asking ourselves: "How can we build mutual respect?", "How can we be useful and relevant to the world?"

Let me give you an analogy. Singapore is like open grassland, where elephants roam. When the elephants fight, we get trampled upon. And when the elephants make love? We also get trampled upon. It is to our advantage to stay out of the way of elephants.

For us, globalization is not an option. It is a necessity. In Singapore, we have no domestic flights. Every flight is international. Singapore went global before the term "globalization" became fashionable.

As a tiny island plugged into the global grid, Singapore has felt keenly the forces of innovation and integration.

Let me elaborate.

Innovation and Integration

Innovations in information and communication technologies, transport, and manufacturing have transformed the way we live, work and interact in the 21st century.

Today, technology connects people from all corners of the globe. At the click of a mouse, we can chat and share photos with family and friends around the world. At the tap of a key, our mobile phones now play music, shoot videos and connect us to the Internet.

The forces of innovation and integration have also led to fundamental shifts in the global marketplace. For instance, to reach an increasingly discerning global clientele and offer seamless services, industry alliances have been forged. The Star Alliance network is an example from the competitive airline industry.

World at a Crossroad

Innovation and integration have shrunk space and time. Airplanes can now move more people and more goods more quickly to any part of the world under a day. Modern transportation made possible our coming from all over the world to gather here today. At the same time, the airplanes that brought us together are also capable of carrying viruses far and wide, as was the case with SARS some years ago.

The flattening and shrinking of the world have intensified congestion, competition and conflict. As resources are depleted more and more, competition and conflict can only get worse, not better.

Let me use a metaphor. All of us are in one and the same spaceship – Spaceship Earth. We may be traveling in different cabins. Some want to stay in first class while others are trying to move up into first class. But we are so intent on scrambling to get into first class cabins that Spaceship Earth is on auto-pilot. We seem unaware that we are all heading towards a common destiny. On our current trajectory, Spaceship Earth is zooming straight for the burning sun.

What can we do to influence the course of Spaceship Earth? With nations pre-occupied with self-interest, who acts for the world's collective interest? Paralysis is our most serious threat.

World of Increasing Cultural Complexity
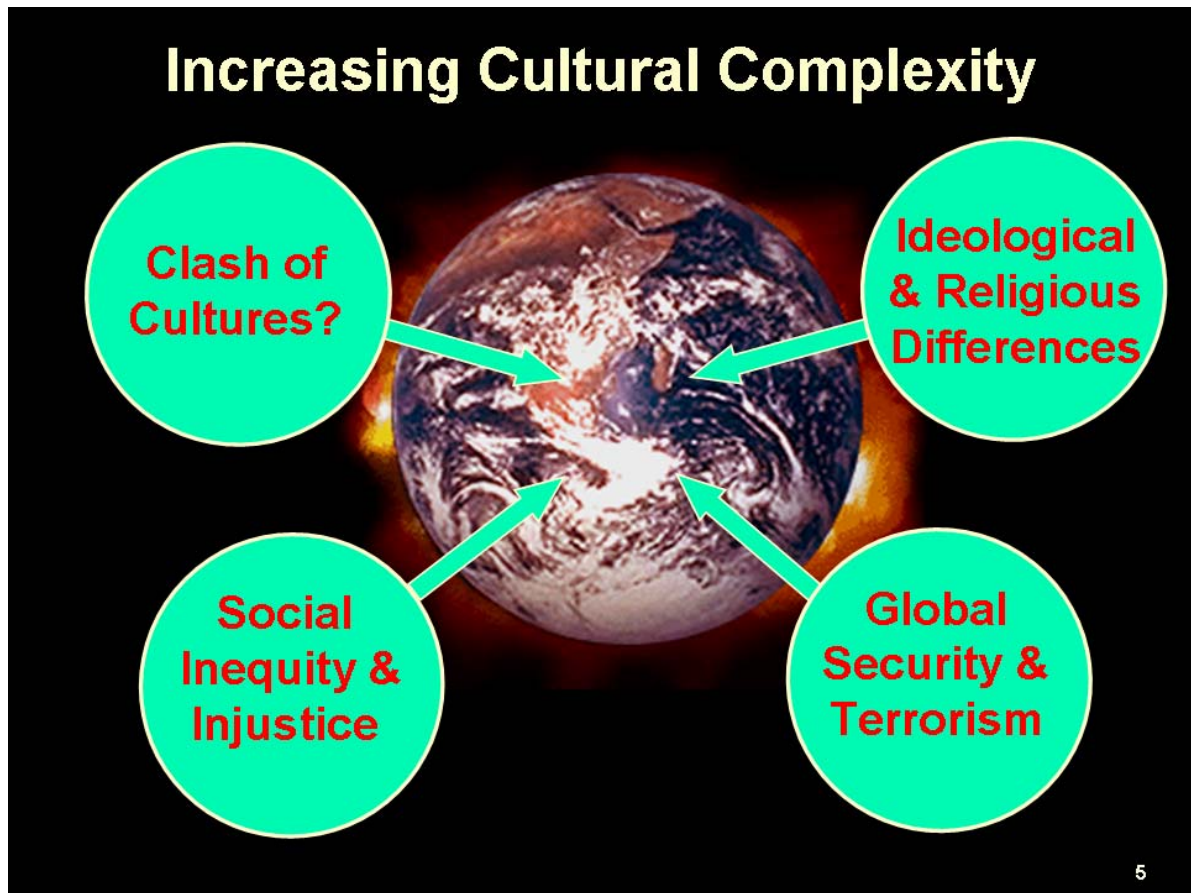

The problem is even bigger.

By shrinking the space between cultures and civilizations, technology has not just pushed us closer. It has shoved us in one another's faces. For instance, technology brings vivid images right into our homes. They are designed to shock our sensitivities, invade our emotions, and evade our rationality. They strike us where we feel most vulnerable, sometimes generating anger, envy, and mutual disgust. In this way, technology amplifies cultural differences and can divide us.

We now live in a world of increasing cultural complexity, where issues like global terror, social turmoil, clash of cultures, and poverty grab the headlines everyday.

In his book "The Clash of Civilizations", Samuel Huntington argued that the main conflict in the world is between different civilizations, brought about by differences in culture and religion.

Clashes on a regional scale have been common in the history of humankind. In my opinion, human conflict on a global scale comes about in part because of technology, and because the pace of technological change far exceeds the pace of social and cultural evolution.

Technology-Culture Divergence
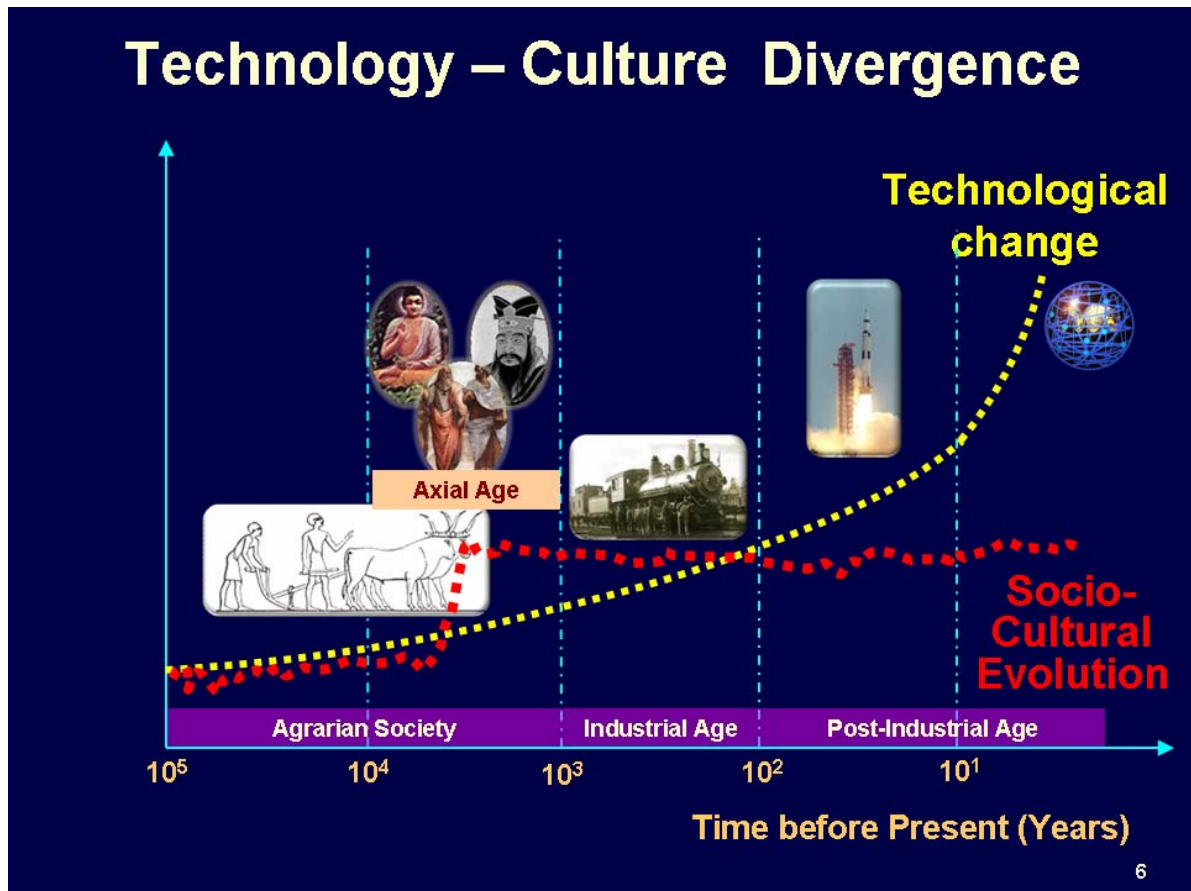
Over millennia, societies have evolved – from Agrarian to Industrial to the Post-Industrial Age, which includes what some have called the Knowledge Era.

The pace of technological change today is measured by years, and even by months.

Contrast this with socio-cultural change, which is measured by generations, if not by centuries. The Axial Age (the period 800 – 200 BCE) saw a profound shift in human thought and consciousness. Great thinkers and founders of faith like Plato, Confucius, and the Buddha laid the foundations for our social and cultural DNA, setting forth basic values (such as The Golden Rule) and human ideals that have shaped us till today. But this profound transformation in our social and cultural DNA took place some 2000 years ago!

The evolution of our social and cultural DNA – our empathy, identity and values – occurs slowly. Today, we find that it cannot keep pace with the challenges of accelerating technological change.

Bearing this context in mind, I would next like to speak of integration in the changing global education landscape.

Integrating Knowledge and Culture
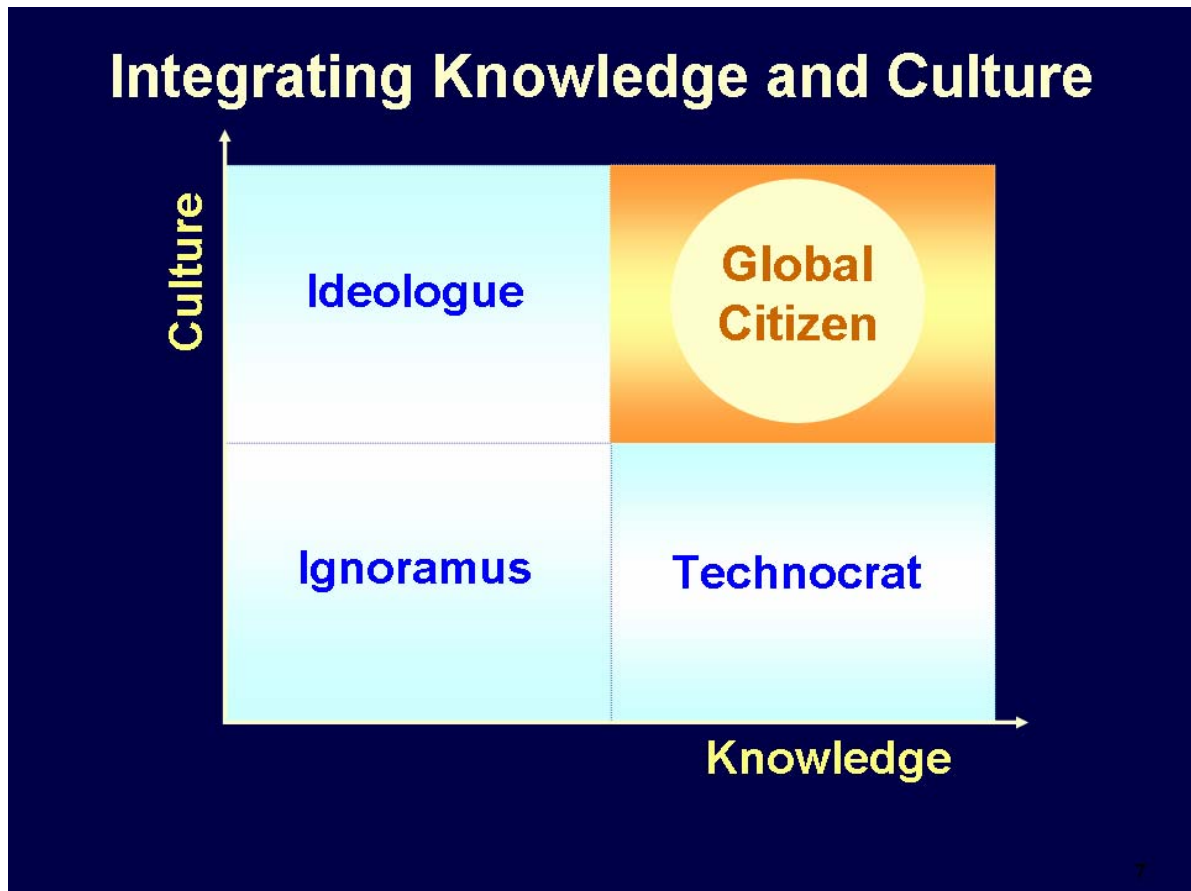
Education can play a role in bridging the divergence between technological change and socio-cultural evolution. In our world of increasing cultural complexity, science and technology can provide only partial answers. We will need to go beyond science and technology to find answers.

However, education has thus far tended to focus on producing technocrats – people high in knowledge, and short in culture. There is certainly a need for technocrats, especially to drive technological innovation. At the same time, without factual knowledge, societies of the ignorant or the ideological would abound.

With all the technology-related and culture-related issues facing the world today, there is an urgent need for education to integrate a socio-cultural dimension.

Education must now nurture global citizens, who are high in both knowledge and culture. Global citizens

- think beyond boundaries of place, identity and norms,
- have empathy, trust and mutual respect for diverse cultures and civilizations,
- seek to contribute to a sustainable and more humane world, and
- can contribute to dialogue on global issues.

The Global University
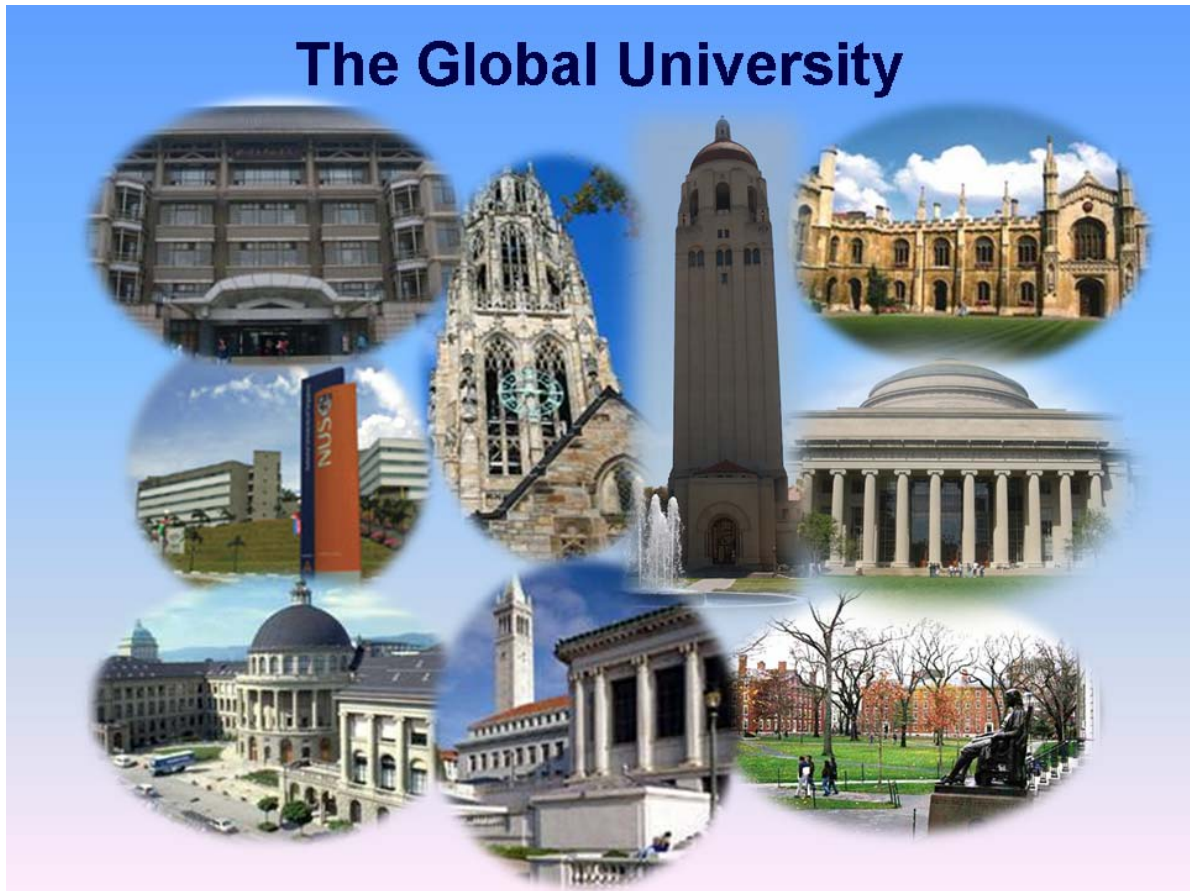
In the 21st century, universities should leverage on connectivity and innovation. Universities that seek to remain relevant have to globalize. Global universities have emerged.

In a recent article in *Newsweek*, Richard Levin, President of Yale University, described the attributes of the global university as follows:

- seeks students of diverse cultures and values from around the world,
- sends students abroad to prepare them for global careers,
- offers courses that address the challenges of an interconnected world, and
- engages in collaborative research to advance science to benefit humanity

No university is able to do all these on its own. Global universities reach out to other knowledge organizations. They build strategic alliances that transcend disciplinary, cultural and continental boundaries.

Global universities can be a powerful force for building mutual trust and respect across cultures, and for facilitating global dialogue and understanding among diverse cultures and civilizations. I shall say more about this later.

Singapore's Transformation
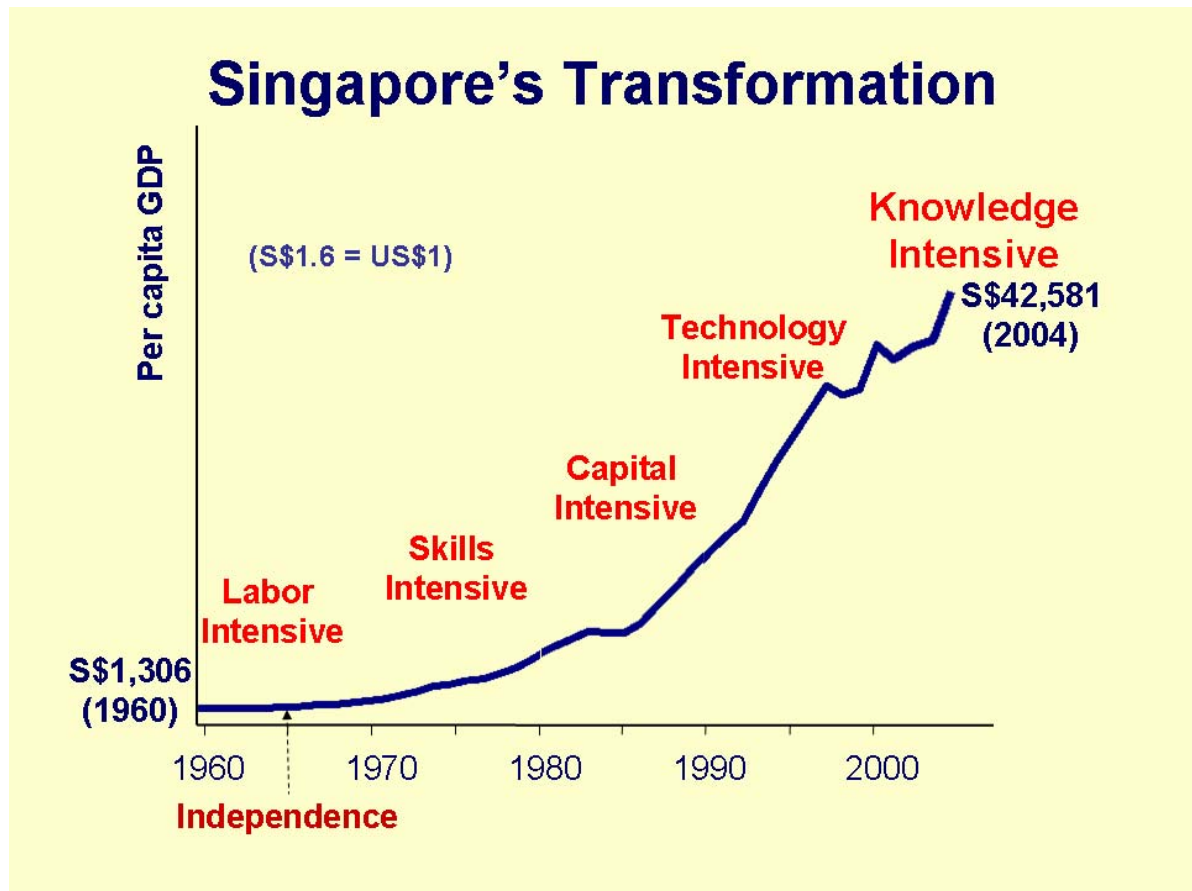
Let me now turn to the tiny island of Singapore. Our experience may offer some lessons for a world at a crossroad. When Singapore gained independence in 1965, it stood at a crossroad. The future was uncertain.

Over the past four decades, the leadership and people of Singapore have faced tough choices. Hard decisions have had to be taken, often not out of choice, but for survival. When you are a tiny island and you have to secure your place in the sun, you get focused quite quickly.

To drive and sustain economic growth, Singapore has moved from a labor-intensive, manufacturing-based economy to a knowledge-intensive one. In addition to competing on cost and efficiency, Singapore is now striving to compete on knowledge and talent. In the post-industrial era, critical success factors are knowledge creation and innovation, as well as talent attraction and integration.

Singapore: Innovation and Integration

Singapore is an intersection of 3-plus-1 cultures – Chinese, Malay, Indian plus Western. We celebrate the holidays of our various cultures – Chinese New Year, Ramadan, Deepavali, Easter and Christmas. The 3-plus-1 cultures share a small common space – 4.5 million people occupy about 700 km^2. Singapore is probably one of the world's most congested countries. In multi-cultural, congested Singapore, we have to learn to appreciate diversity and develop cultural sensitivity.

Moreover, managing the tension between diversity and cohesiveness has called for strong leadership. Singapore's harmony and prosperity have been achieved through meritocracy and a well-managed democracy balancing diverse interests. For example, the government's public housing policies include maintaining an ethnic balance in each block of high rise apartments built by the Housing and Development Board. This racial and cultural mix has helped create conditions for social integration and harmony.

Like many countries, Singapore's rapid transformation has widened social and economic divides. Initiatives to bridge these divides include an infocomm masterplan – called the Intelligent Nation 2015. Ultra high-speed broadband connection anywhere, anytime will be provided for everyone – including the elderly, needy and disabled, and students. Beyond connecting minds, Intelligent Nation 2015 will help connect and integrate people at the social and emotional level.

This brings me to NUS.

**NUS: Innovation and Integration**

I would now like to share a few examples from our experience in endeavoring to integrate a socio-cultural dimension into NUS education, to help build mutual trust and respect across cultures.

Building a Global Learning Community

At the turn of the 21st century, NUS too was at a crossroad. We could continue as a university training competent manpower for Singapore. Or, we could set our sights on becoming Singapore's global university. We chose the latter.

One step in this direction is building a global learning community centered around residential colleges. Up to 40% of the residents in each college will be from overseas, representing a broad spectrum of disciplines, nationalities and cultures. One of the colleges will adopt the theme of interactive and digital media, seamlessly integrating technology, arts and culture.

Building relationships across cultures goes beyond classroom learning. The integrated learning and living environment of residential colleges aims to promote informal, "peer" learning and dialogue across cultures. In informal settings – the living room and the dining room – students can choose and decide with whom to interact. They learn to live in one another's skins and work towards developing cultural sensitivity.
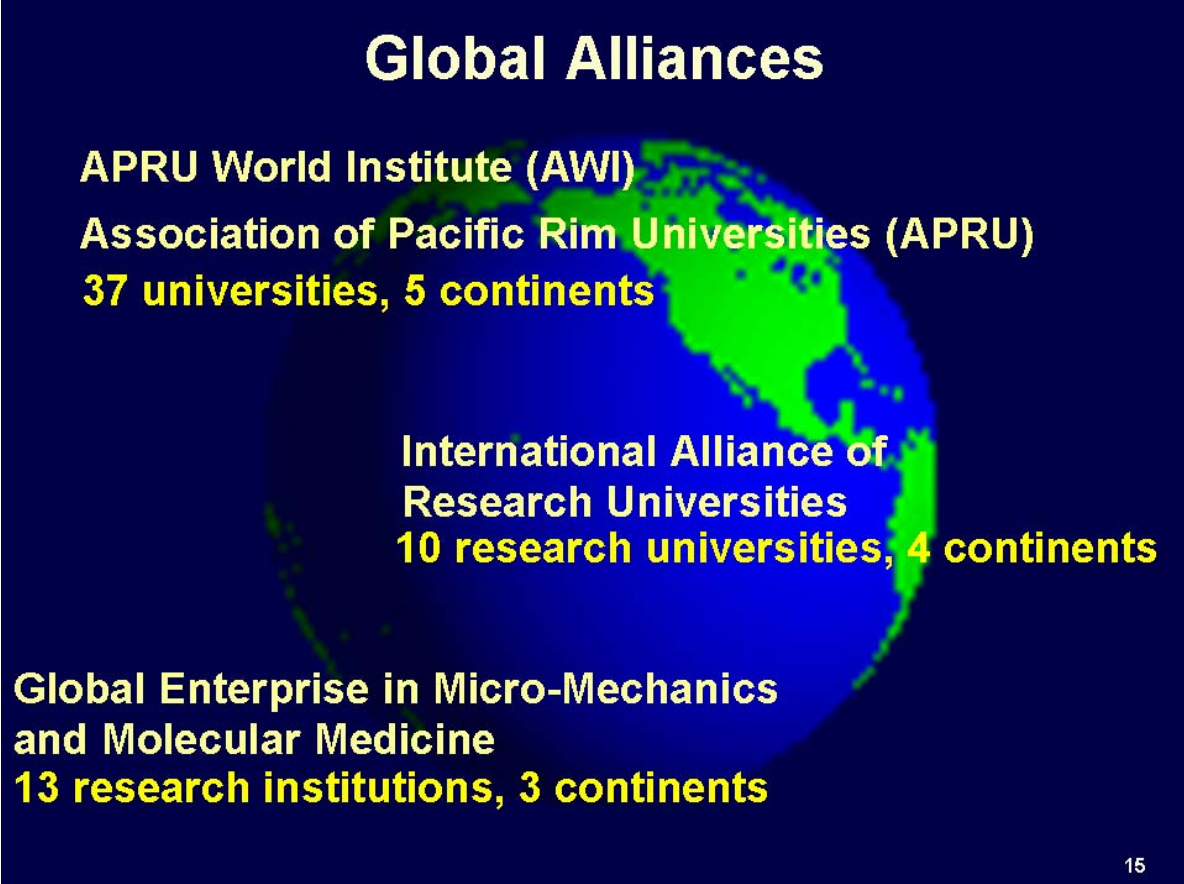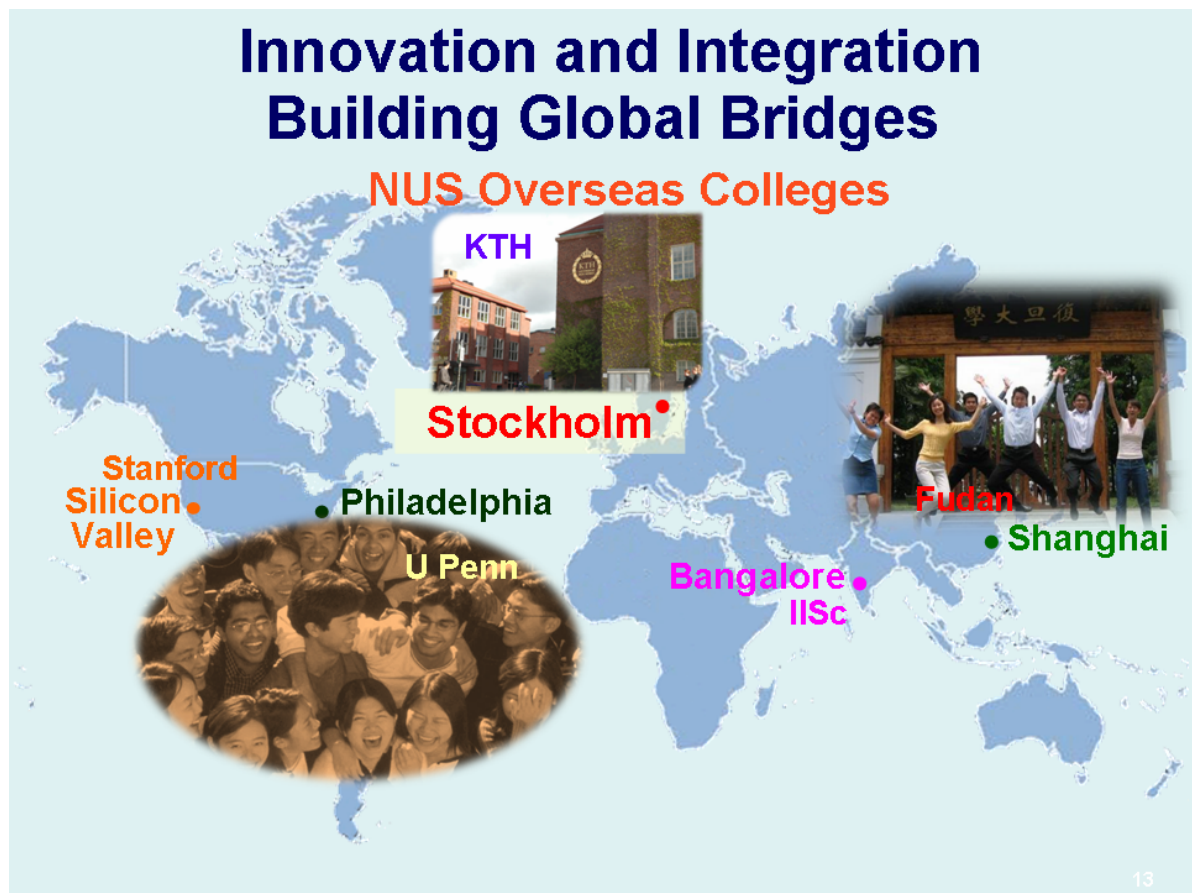
In addition to building a global learning community on campus, we are building global bridges – bridges that are intellectual, social and cultural.

In 2001, we established NUS Overseas Colleges. We send our students out to be immersed in the world's dynamic entrepreneurial hubs – Silicon Valley, Philadelphia, Shanghai, Bangalore and right here, in Stockholm. While at our overseas colleges, our students engage in full-time internships with start-up companies there.

Besides NUS Overseas Colleges, our students also have opportunities to go on overseas student exchange programs, as well as community projects and attachments.

By bridging cultures and continents, our students grow in both knowledge and cultural dimensions.

Take, for example, Ming Chong, who went to NUS College in Silicon Valley. He took advantage of the Valley's mix of cultures to grow as a global citizen. From his Iranian friends, Ming picked up Farsi, to add to his knowledge of English, Chinese, Indonesian and Tamil. After returning to Singapore, Ming spent time in East Timor and Ukraine to share his IT and other skills at a children's home and the communities there. Ming is now working with a global consulting company, and is responsible for driving business development across the Asia Pacific.

Forging Global Alliances

NUS has also been actively pursuing alliances with knowledge organizations around the world, collaborating to address global issues.

Our most recent global alliances include:

- the APRU World Institute (AWI), which is under the umbrella of the Association of Pacific Rim Universities (APRU),
- International Alliance of Research Universities, and
- Global Enterprise for Micro-Mechanics and Molecular Medicine

Let me elaborate on just one – AWI, which NUS hosts. AWI is an institute of advanced studies that brings together top researchers from around the world to catalyze research in issues of global significance. AWI is organizing two conferences on pressing global issues in 2007.

The first is a workshop on "Climate Change and Societal Impact" hosted by University of California San Diego's Scripps Oceanography. Co-sponsors include ETH Domain, Fudan University, University of Melbourne and NUS. Another workshop focusing on global public health will be hosted by Peking University. Co-sponsors include Johns Hopkins, Sydney, NUS and the Bill and Melinda Gates Foundation.

The Path Ahead

"The need for … celebrating the richness of the … interdependences within our … global civilization has never been stronger."

Amartya Sen
Nobel Prize in Economics, 1998

Being here in Stockholm at the time when the Nobel Prizes are awarded, I'd like to end my talk by quoting Nobel Laureate in Economics, Amartya Sen.

Rather than Huntington's clash of civilizations, Sen described a more upbeat vision of the future. He speaks of a common global civilization – one that recognizes the diverse identities as well as the inter-dependences of the world's civilizations.

I hope you share the view that leveraging innovation and integration, education has a vital role in nurturing a common civilization of global citizens.

The world is now at a crossroad. Do we take the path of Samuel Huntington's world of alignments based on culture and religion, or that of Amartya Sen's world of a common global civilization?

The larger purpose of global universities should include integrating knowledge and culture. We can contribute by nurturing global citizens – who are high in both knowledge as well as culture – for leadership in a world at a crossroad.

Let us choose the right path.