

## Speech at European University Association Annual Conference

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Conference general theme: Sustainable universities: funding, campus, research, learning

Good afternoon. It's a privilege to be given the opportunity to participate in this EUA Annual Conference and learn about what is going on in higher education in Europe. I have noticed that I am the only speaker here from Asia and I am thankful for your including me. Personally, this is also particularly rewarding, given my career background in both the US and now Asia, and what I have learned here fills a big gap in my professional experience.

In the invitation, I was asked to reflect on the 4 dimensions of the sustainability theme of the conference and draw comparisons between the challenges and possible solutions facing higher education in Europe, the US and Asia. That's a tall order and I don't want to set your expectations too high! My plan is to first outline several global trends in higher education that I have observed. Then I'll address a few, but not all, of the conference themes.

The first trend I'll mention is the rise of Asian universities. I know all of us university administrators will never admit to looking at global university rankings but if you do this should not come as a surprise. A week ago, the Times Higher Education released its "reputational ranking", and here is a quote from their press release: "The West loses ground to the East in the global index of academic prestige,...US dominates with 44 institutions in top 100 but clear evidence of the growing prestige of Asian institutions across the region, especially China...signalling the start of a power shift from West to East."

As Asia's economies rise, and as these nations increase their investment in higher education, it should come as no surprise that their universities have gone up in reputation. They are also increasing in number, sometimes in dramatic fashion. India is more than doubling its number of IITs from 7 to 16. China has also experienced a rapid expansion in higher education over the last decade, with undergraduate enrollment having increased 7 fold. Taiwan, with a population of about 23M, has over 160 universities, an expansion of over 50% over the last 2 decades. Singapore's new NTU is 20 years old, and the city-state is starting 2 new universities SUTD and NUS-Yale. Finally, HK wants to expand its high education sector and become an education hub. My own university HKUST was founded only 20 years ago, and later this year HK will be switching from a UK tradition of 3 year undergraduate system to a 4 year system, with a third more undergraduates overnight and the need to hire 1000 more new faculty members.

The second trend is that, in contrast to Asia, there have been relatively bad news coming from the US and Europe.

One thing I have learned at this conference is that government support for higher education in Europe has been decreasing, for some quite dramatically. The UK higher education system is going through dramatic changes, in response to “an era of austerity”, as we heard from the Minister. On the positive side, I have also learned about the Bologna process to increase compatibility and mobility across Europe, and which I think will also facilitate internationalization.

What about the US, the traditional power house in higher education and the magnet for global students? Certainly, the US is not in any immediate danger of losing its leadership position but there are troubling signs. The public universities, especially, are hurting, some badly. Take the University of California system, long regarded as the best public education system in the world. UC has had its state funding cut drastically for the last 2 years. The last cut alone was US\$650M!

The November issue of Vanity Fair, titled “California and Bust”, has the following quote: “The same fiscal year that the state spent \$6 billion on prisons, it had invested just \$4.7 billion in its higher education.... Over the past 30 years the state’s share of the budget for the University of California has fallen from 30 percent to 11 percent, and it is about to fall a lot more... Everywhere you turn, the long-term future of the state is being sacrificed.” Similar stories are found in other US states, for example Wisconsin, Florida, and Arizona.

The US private universities, on the other hand, are relatively healthy in comparison. They have recovered much of their lost endowment investments from the 2008 financial crisis. Some are mounting ambitious fund raising campaigns (e.g. USC \$6B). They are raiding faculty from the publics. Many are expanding internationally. Yesterday, Stanford opened its China Center on the Peking University campus. The balance of public versus private higher education in the US is going through a fundamental and historic change.

A third trend is the increasing globalization of universities, especially from the developed world into the developing world. This expansion can take many forms, including overseas centers, full fledged branch campuses offering degrees, nodes of a global network, joint degrees, etc.

The Middle East has been ground zero of this trend over the last decade, and Singapore has

also been very active in inviting overseas brand name universities to open joint ventures there.

But the new emerging playing field is clearly China, so far mainly from the US and UK. We have: Johns Hopkins University Nanjing starting in 1986, then Nottingham Ningbo in 2004, Liverpool-Xian JiaoTung University in Suzhou in 2006, Michigan-Shanghai JiaoTung University joint degree in 2006, NY Institute of Technology Nanjing 2007, NYU-Shanghai 2013, Duke-Kunshan 2013 and Berkeley Engineering in Shanghai. China, with its rising economy and family income, as well as its people's traditional high regard for Western higher education, is seen as a huge potential market for higher education.

Internationalization is a global trend: more students are doing international exchanges, not just from East to West but also in the other direction. For example, roughly a third of HKUST's undergraduates spend a semester on international exchange before they graduate and we intend to increase that from around 33% to 1/2 as we switch to the new 4 year system. The use of English, as a lingua franca, is also increasing: either as the only official language of instruction (e.g. HKUST, KAUST), or in a subset of courses, or used exclusively in a college within the universities, or even wholesale conversion (e.g. KAIST).

The final trend I want to mention is the increased global mobility of both students and faculty. Over much of the last century, the flow has been almost exclusively from East to West, but it is now much more of a more 2 way street. According to OECD: the number of international students worldwide has increased from around 2M in 2001 to about 3.3M in 2009. In 2001, the top 5 destinations are: US (28%), UK (11%), Germany (9%), France (7%), Australia (4%). In 2009, China has replaced Australia in 5<sup>th</sup> position.

China overtook India in 2009 in sending the most foreign students to the US, with over 150K annually, 50K of which are undergraduates. Despite the fact that Chinese universities are very low cost, about US\$1000 per year in tuition and US\$200 per year for housing, growing wealth means many families can now afford to pay the much higher Western tuitions to study overseas. HK has already started to benefit from this trend, with top Mainland students paying non-local tuition and choosing to enroll for example at HKUST instead of top Mainland universities. HK's attraction is that it offers a high quality international English-based education close to home, for often the only child in the family, and providing plentiful career and further studies opportunities, either overseas, in HK or in the Mainland.

There are also more students from the West going East. The number of US students going overseas has almost doubled in the last decade. China has replaced Mexico as the 5<sup>th</sup> most

popular destination for US students. President Obama announced his 100K Strong program for sending 100K US students to China.

At the same time, more students from the East are staying within and returning to the East. Not so long ago, 90% of students from Taiwan who went overseas to study went to the US. Now it is less than 10%. They are staying in Taiwan because of plentiful jobs or are going to China to study. In HK, we have seen increasing number of students returning after high school overseas to study in local universities.

My own observation is that students from emerging developing countries like China are still going to West, but those from “maturing” economies (like HK and Taiwan) are slowing down. Will this trend change as these developing nations’ economies mature, the quality of their universities goes up and career opportunities become plentiful? If and when that happens, it’ll have a big impact on the higher education “industry” in the West.

Now I want to briefly comment on three of the themes of this conference. First, about funding. Countries with emerging economies are investing heavily in higher education, as developing human capital is seen as necessary to improve economic competitiveness, enabling a move from a low cost labor economy to higher up on the value and innovation chain. At this conference, we have heard a lot about the unfavorable financial climate facing both European and US public universities. In the US, the consequences of such drastic budget cuts are predictable: tuition rise, larger & fewer classes, research funding cut, hiring freeze of faculty and staff, more adjuncts to teach, faculty furlough, etc.

In response, the publics are taking the political opportunity to admit more out of state and international students and increase those tuitions significantly. For example, UW now has 20% of its undergraduates from out of state, half of which are from China. UCLA is now 20% out of state, with 1/2 of that international, and 1/2 of that from China. UC Berkeley is now 25% from out of state, with 11% int’l. For comparison, USC, which is private, is at 20% international. Out of state tuition has also increased significantly over the last few years and is much larger than in-state tuition & fees. For UCB & UCLA, out of state tuition is now over \$35K, with UW’s approaching \$28K. The publics are subtly privatizing themselves!

Many universities are more proactively competing for government and industrial research funding, increasing private fund raising (e.g. US public universities’ multi-billion dollars campaign), and more self financed programs (e.g. executive training, summer, online, continuing education courses).

Perhaps the most serious consequence is morale, especially of the faculty. Many feel that the current fiscal crisis is fundamentally different from previous, more cyclical ones. Faculty recruitment and retention has become more of a challenge.

Now about Research. It is gratifying to learn that, despite recent financial challenges, e.g. in the US and EU, many countries have chosen to preserve research funding especially in S&T, in order to remain economically competitive.

For example, the latest US President's budget request for 2013 shows a flat budget for NIH, but modest increase (<5%) for NSF, DOE OS, and major increases (>10%) for NIST, DOE Energy, DARPA-E, ITER (+42%). Clearly, economic competitiveness is a priority. But nobody expects the president's request to be appropriated by Congress as requested and there is no more talk of doubling the budgets of these agencies over a decade, which was trumpeted by the White House before the financial crisis. Finally, sparing research funding from cuts will be increasingly a political hard sell if the economy keeps deteriorating.

Another source of support that universities are seeking is industrial partnership, such as the impressive Warwick Manufacturing Group on this campus. However, as you have heard, universities should ensure a healthy balance between basic and industry driven research.

The emerging economies are also investing heavily in S&T research. China, for example, stated in its 12<sup>th</sup> 5 yr plan the goal to increase its GERD/GDP from 1.4% to 2.2%. It stresses innovation as a national goal. China, out of economic competitiveness but also out of concern for its own environmental problems, is investing in several strategic emerging Industries, e.g. new energy, biotech, materials, IT, manufacturing, and clean energy vehicles. Aggressive funding schemes abound at the national, provincial and city level.

To have first rate research, we need human talents, resources, and a mature management system. Right now, China has got the first two factors but not yet the 3<sup>rd</sup>. But soon things will mature.

Finally, I'd like to comment on Learning. The Asian education tradition has both strengths and drawbacks. It prepares the students well on core basic skills with high exam scores and excels in int'l tests. However, it has also been criticized as putting too strong a reliance on exams and not enough on creativity, critical thinking and innovation. Many Asian countries are trying to address this.

At HKUST, we are introducing a broader based common core curriculum, School-based

admission to facilitate later specialization, undergraduate research opportunities program, international exchange, service learning, and internships.

But the Asian exam systems are difficult to change, despite wide recognition of its drawbacks. In China, for example, it is difficult to find a fair and socially acceptable system to replace the national examination system.

Finally, there is also cultural inertia. A university degree is still seen in Asia, by parents and students and sometimes employers, as career preparation and vocational training. There is fear and stigma of failure, and underdeveloped entrepreneurship among university graduates. These will take time to change.

I'd like to conclude by saying that the landscape for higher education is going through seismic shifts on a global scale. There are obviously many challenges and concerns that universities face but there are also opportunities for making real and effective changes. As the saying goes, "let no crisis go to waste"!