NUS Pro Chancellors

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Distinguished Guests, Colleagues, Students, Alumni and Friends

Ladies and Gentlemen
Like me, you would be amazed if you saw this Opera House which was completed in 1896. The tiles for the roof came from France, the marble in the columns from Italy, and the steel from England. Inside, it had 200 chandeliers, several made of Murano glass. The road outside was rubberized to reduce the clatter of vehicles.

You might be even more amazed if you knew where this Opera House is. It sits in the middle of the Amazon jungle, in Manaus, Brazil.

How is it that such a grand Opera House came to be built in the heart of the largest jungle on earth?

It happened because Manaus was at the centre of the rubber boom in Brazil around 1890 to 1920. Rubber collected from wild rubber trees brought spectacular wealth to the region.

But, that prosperity was short-lived. When a way was found to cultivate rubber in plantations in Southeast Asia, production in Brazil could not compete and Manaus spiraled quickly down into poverty.

The story of Manaus reminds us powerfully of the constant need to stay relevant. It alerts us to the importance of being alive and responsive to the external competitive landscape particularly when we think we are doing well.

NUS is doing well. Our students, faculty and alumni are making a mark in many ways and our global reputation continues to grow strongly. We should be proud of what we have achieved, BUT we cannot be complacent.

Looking to the future, if NUS is to continue its steep upward trajectory, we have to address this key question: How can we make NUS even more relevant to our stakeholders and to Singapore and society? What is the new and distinctive value that we can and should create?
Let us start by considering the education we provide –

In our rapidly changing world, how do we keep NUS education at the leading edge and highly relevant to the times? What must we do, so that our graduates can keep on making their mark in the globalised world of the future?

The good news is that we are building on a very strong foundation.

Over the past 10 years, we have made 3 crucial shifts which have resulted in a much richer and responsive, yet rigorous education for our students.

First, we achieved substantial broadening of education across our university. Today, a quarter of the courses NUS undergraduates take, are in subjects outside their specific discipline.

Second, we have made our educational framework much more flexible. As a result, our students have many options of modules, programmes, double-major and double-degree courses to choose from based on their different interests, aspirations and capacity. A more recent innovation is the creation of highly multidisciplinary courses. For example, our Faculty of Arts and Social Sciences and our Faculty of Science are spearheading a new 4-year undergraduate Environmental Studies Programme designed and taught by experts from 8 Faculties.

Third, we have forged distinctive global education programmes, which are highly regarded by our peers. Perhaps the most prominent of these are our 6 NUS Overseas Colleges that provide unique experiential entrepreneurship education.

In addition, our Faculties have also pioneered fundamental curricular reforms. The result is exciting, cutting-edge programmes that will give our students and graduates a strong competitive advantage.
For example, for the Yong Loo Lin School of Medicine’s new curriculum, the hallmark is a highly integrated programme, built around a rigorous clinical experience. It makes full use of the School’s extensive global partnerships, and cutting-edge expertise in Asian diseases. Students are exposed to patients very early on – mostly real patients in hospitals, but also a few like “Mr MetiWang” an advanced patient-simulator, which enables students to learn basic science concepts in a creative way. Next year, the School will open its virtual hospital, a special facility designed for advanced simulator-based clinical training.

Our Faculty of Engineering has started phasing in its new Design Centric Curriculum, in which design projects form the core around which basic concepts are learnt. The Global Engineering Programme launched last year is also being expanded. The first intake of students is doing well - two will be going on a year-long exchange at Cambridge University and the rest to other leading universities. Students in this programme can finish with a Bachelor’s degree from NUS and a Masters degree from a top partner university, all within 4 years. When fully implemented, these innovations will re-define engineering education in Singapore and beyond.

Similar initiatives across our Faculties are driving up the level of educational excellence throughout the University. In tandem, they create even more opportunities for our students to STRETCH themselves academically. In my view, this is crucial.
We are all familiar with the image of the condor in flight, soaring majestically, ranging far and wide on outspread wings. It wasn’t quite like that. The first time I actually saw one, in a village in Chile in 1994. Here is a picture of it – she’s called Connie the Condor. Connie was raised from young by the villagers, who molly coddled her so much that she prefers to hop around rather than fly.

NUS students have talent and potential. But to help them take off and many to soar, we must not only educate them well, BUT we must also challenge each to try to rise above his- or herself, and others.

Our University Scholars’ Programme or USP is a successful example of a university-level thrust that does this well. The students in USP are enrolled in specific disciplines in one of 6 NUS Faculties. However, what USP gives them is the opportunity to be challenged by a broad-based core curriculum, equivalent to a year of study, with a strong emphasis on writing and critical thinking. USP students move between this and disciplinary studies in their home Faculties which span a further 3 years. Students also have access to a range of USP global and academic options.

Next year, USP will start on an exciting new phase of its development, when it moves into one of the residential colleges in University Town, or UTown for short.
U Town itself will offer another type of university-level programme that will challenge a broader base of students, through residential college learning. Students living in the U Town Colleges will take a number of new, specially designed academic modules while enjoying a rich on-campus residential experience.

I won’t be saying more about this as Provost Tan Eng Chye will be giving us an update on UTown shortly. Eng Chye is the ultimate mastermind for the U Town academic concept and programmes, and has worked effectively to bring them to fruition.

The cumulative impact of these substantial enhancements is already apparent and growing. But we can and must do more if we are to anticipate and meet the educational needs of the future.

In 2006, my wife Evelyn and I travelled 3-days upriver by boat from Kamarata in Venezuela to see the Angel Falls. The Angel Falls are a truly impressive sight, plunging more than 900m straight off the edge of a massive flat-topped mountain, the highest waterfalls on earth.
Our boat man was highly skilled picking the right passages up the rapids, avoiding the rocks and driving the boat up against the fierce current. I asked him what was the most important thing he had to focus on. He replied without hesitation: “Reading the water well”

Like the boatmen of Kamarata, we need to constantly look forward, to “read the water well”, to discern the main currents from the eddies, and to chart the best course that will take us swiftly and safely ahead.

Peering into the future, we can see that the issues facing Asia and the world are global, complex and interconnected. To help address these challenges, there is a compelling need for new educational models which have a primary focus on nurturing graduates who can think deeply about issues, while having a broad intellectual base which allows them to see connections and solutions across different disciplines in more original ways.

We must also be alive to the intensifying competition for talent in our region. We have to ensure that further into the future, NUS continues to be the preferred university for top students from Singapore and Asia, even as other universities in Asia become more attractive for such students.

How best should we deal with these new currents which impinge on the education of the future?
One response could be to go the way of the Potoo. If you don’t know what a Potoo is, see if you can spot it in this photo.

The Potoo is a bird found in North Brazil, a relative of the owl. Its response to the external world is to stay absolutely still, hoping not to be noticed. I am not sure what it does for a living, but it certainly is very good at not moving.

Charming though the Potoo is, I don’t think NUS should emulate its strategy. Indeed, we should be distinctly anti-Potoo in our approach.

The best way for us to respond to the educational challenges of the future, is to drive ourselves forward, to stay well ahead of the curve. The many enhancements we are already making to NUS education will help us in this regard. And the proposed establishment of a liberal arts college in partnership with Yale University, will be of great strategic value.

Together, these will allow us to leap-frog ahead, to make significant contributions to higher education globally, and to move to a position of even greater influence and leadership.

The full liberal arts education model is found mainly in the United States, either in standalone Colleges, or embedded as undergraduate Colleges within research universities like Yale.
The key focus is the nurturing of curiosity, thinking from first principles, reasoning, communication, and quantitative skills. This is achieved through an intense, broad-based multi-disciplinary programme covering the natural and social sciences, mathematics and the humanities.

US liberal arts students also pursue a major, which typically makes up less than a third of the curriculum. In comparison, our 4-year NUS programme has a different emphasis: here, the major comprises two-thirds or more of the course of study.

A key feature of Liberal arts education is residential living, which builds vibrant learning communities, spanning formal learning and co-curricular activities.

This Liberal Arts education model is new to Asia. Yet, we strongly believe that it will become increasingly valued in the future, by high-potential students, and by employers and society. Even today, there are initiatives in East Asia to broaden the specialized approaches to education which are the norm there. There are also nascent liberal arts education programmes in China and Korea.

For NUS, setting up a new Liberal Arts College would enable us to take a leadership position in a key form of education for the future, and to attract even more of the brightest students.

In this exciting enterprise, we are delighted at the prospect of partnering Yale University to set up the proposed Yale-NUS College.

We all know Yale as one of the finest universities in the world. Perhaps, less known here, is Yale’s long-standing and pivotal impact on the development of liberal education, and the founding of liberal arts colleges throughout the US. Yale’s deep influence continues to the present, under the visionary leadership of its President, Richard Levin, one of the foremost leaders in global higher education.
In Yale, NUS will have a partner with rich and leading-edge expertise and experience with liberal arts education.

In NUS, Yale will find a partner which is global AND Asian, with a strong record of educational innovation, in a dynamic part of the world.

But perhaps the most exciting dimension of this collaboration is the shared vision and strong interest on the part of both Yale and NUS in jointly developing this vital project. By working together, we hope to introduce fundamental innovations in education that could serve as a model for others in Asia, and that may help re-shape approaches to liberal arts education in existing institutions including Yale itself.

In the words of Yale President Levin, the proposed Yale-NUS College will offer:

“an exciting opportunity to develop a novel curriculum spanning Western and Asian cultures, exploring their similarities and differences, and better preparing students for lifelong learning in an interconnected, interdependent global environment.”

The proposed Yale-NUS College would also serve our students and Singapore well by offering our best students, a valuable option of the highest quality, and by nurturing leaders well-equipped to address the complex challenges of our globalised world.
The leadership and hard work of Vice President Lily Kong and Deputy President Joseph Mullinix culminated in the signing of a Memorandum of Understanding last month, between myself and Yale’s President Levin. This paves the way for the details of the partnership to be finalised, and the necessary approvals obtained, we hope by early next year.

Beyond excellent education, our University’s other key mission is high quality research. As we think of how our University can do even better, into the future, we also need to ask ourselves how we can create even greater value through our research.

Under the skilled oversight of Deputy President Barry Halliwell, NUS’ research is going from strength to strength. A satisfying number of our homegrown faculty are leaders in their fields, and we have continued to recruit many world-class faculty. Our researchers are advancing the boundaries of fundamental knowledge in many diverse fields. This is reflected, for example, in the 2010 President’s Science and Technology awards, where NUS faculty featured very prominently including winning all 3 Young Scientist Awards.

The strong focus on fundamental research is crucial because it is very difficult to know beforehand, which areas of inquiry would yield the crucial breakthroughs in practical application.
For example, in the 1950s, the basic research leading to the development of the laser was not perceived to be important. In fact, the early laser was criticized as a “discovery looking for an application”. Now, 50 years on, the revolutionary impact of the laser is beyond dispute.

Hence, we must continue to pursue high quality basic research - in science, technology, humanities and social sciences. In tandem, however, we should also be alert to potentially useful applications of such research, and as an institution, make every effort to facilitate this translation.

If we can do this well, our research will have an even greater and wider societal impact, while advancing knowledge. This impact can take different forms and dimensions. Let me illustrate with 3 examples:

First example: Two Professors - Ding Jeak Ling from Biological Sciences and Ho Bow from Microbiology. They have devoted their lives to studying horseshoe crabs. Some may think this an esoteric pursuit, but their basic science studies over many years, have led to important biomedical applications. An enzyme extracted from horse shoe crab blood is widely used to test for bacterial toxins. Professors Ding and Ho were the first to find a way to produce that enzyme by genetic engineering, hence removing the need to extract it from live crabs.

If crabs can feel grateful, then countless generations of crabs are forever indebted to their discovery. This discovery has been commercialized worldwide as a test-kit, and contributes to the quality assurance of medicines free from bacterial toxins.
Second example: Water is a scarce resource which will become more and more precious in Asia, as it continues to grow rapidly. The Institute of Water Policy at the Lee Kuan Yew School of Public Policy developed and launched the Asian Water Governance Index. This Index aims to help water policy makers in Asia learn from one another in terms of water laws, policies and administration. The Index was one of the 3 finalists in the 2010 Suez International Water Prize. More importantly, we hope that the Index can make a contribution to better water policy and management in Asia.

Third example: For Singapore to thrive as a knowledge-based economy, we need more innovation and entrepreneurship. In line with this, NUS Enterprise under the able leadership of Dr Lily Chan, has pioneered many programmes to nurture and support entrepreneurial students and faculty. I am delighted that one of our start-ups received a big boost recently. Four NUS graduates founded tenCube in 2005. Overcoming many challenges, they developed and launched a comprehensive suite of anti-theft software for mobile platforms. Their company was recently bought over by McAfee Inc, the world’s largest dedicated security provider.
These stories show how strong basic research coupled with useful application, can create significant new value for the wider community.

I would also add that through our research in the arts and humanities, we contribute to the intellectual, social and cultural vibrancy of our society.

HOWEVER, even as we press ahead with these efforts, how do we “read the water” in relation to the future trends for research? Do we need new strategies which would allow us to do even better and create even greater value?

At Manaus, you can take a boat to see the “meeting of the waters”. For many kilometers downstream from where the Solimoes and Negro rivers join to form the Amazon, you can still see 2 separate streams of water, one “white” and the other “black”, flowing side-by-side.

Blackwater rivers have much fewer nutrients than whitewater ones, are more acidic and have different ionic concentrations. They therefore have quite different flora and fauna. Interestingly, the zones where the two waters mix are especially rich in biodiversity and have higher numbers of fish and other animals.

In an analogous way, in research, some of the richest possibilities for interesting work are to be found at the boundaries between different streams of knowledge.

At last year’s State of the University Address, I spoke of the need for more integrative research to address the complex and multi-faceted challenges facing Asia and the world today. To do so, we had formed 5 integrative research clusters. I am happy to report, these are making good progress.

For example, the NUS Global-Asia Institute (GAI) has launched its core research programmes with a group of 5 cross-Faculty projects, which explore different aspects of urbanization in Asia, map its technological landscape, and assess holistic approaches to diabetes prevention.
More recently, with GAI coordination, we secured a $17 million grant from GSK-EDB trust to fund the NUS Initiative to improve Health in Asia. This Initiative will be jointly driven by the GAI, Yong Loo Lin School of Medicine, Lee Kuan Yew School of Public Policy, and the NUS Business School. They will lead research on health systems, health policy and financing in Asia, will organise executive education programmes, and a high-profile Forum for policy makers, industry captains and academics in the region, on these same themes.

With the progress we have made with the integrative Research Clusters, NUS is now ready to take the next important step forward.

Last year, I also spoke of seizing opportunities in a rapidly rising Asia. One key strategy was to intensify our efforts to make our university a pre-eminent knowledge centre on Asia, one which provided a NEW AND MORE INTEGRATED UNDERSTANDING of critical issues in Asia particularly China and India;

As part of this strategy, we are in advanced discussions to set up an NUS Research Institute in Suzhou Industrial Park, with the strong support of the authorities there. The proposed Institute will pursue research in key areas linked to NUS Integrative Research Clusters, and which are of interest to the Industrial Park. Some potential areas include finance, water and environmental sustainability.

The Institute will also have an incubator which would support NUS start-ups and help them scale up their businesses in the Chinese market, in collaboration with Chinese partners. In addition, the Institute will offer certificate and executive training programmes for Chinese students in the Industrial Park, Yangtze River Delta region and beyond. It will also offer short-term research opportunities for selected NUS PhD students.

Having a Research Institute in China will strengthen research in NUS, while deepening our expertise and connections in China. It will help contribute to our continued growth as a university in a future where China will play an even more prominent role.
Over the years, our focus on staying relevant has allowed NUS to grow and to thrive. Our rise as a world-class university has been steepened through aggressive nurturing and attracting of talent, by making fundamental shifts in our education, and by driving up our research. Having made such rapid progress, NUS is now moving into less-charted waters.

Like the boat journey from Kamarata, when we started, the river was rough, but the way up it, was easier to discern. There were some tricky bits, navigating the shoals and rapids. There were also many light moments akin to my own river passage. For example, you might not think of sleeping in hammocks at night as being particularly very interesting. But it can be unless you get 2 things right: how to get into the hammock without falling off the other side immediately; and how to get out of the hammock without being strangled by the mosquito net.

Despite such challenges, big and small, our passage up river was swift.

But the later stretches of the river are more turbulent, the currents are fierce, the rocks forbidding and the way forward less clear. Indeed, uncertainty and fear may keep us from pressing forward.
Yet, turbulent conditions also give us unique opportunities to shoot ahead, to gain a leadership position. We can do this if we “read the water well”, build an even stronger team of boatmen energized by the right spirit, and push forward with conviction and self-belief.

In doing so, we are lucky that we have the help and support of many. Our Board Chairman Mr Wong Ngit Liong and our Trustees have not been to Kamarata but yet they are highly skilled in “reading the water”. They have given freely of their time, expertise and wise counsel to help us pick the best routes to our goals. They help us steer a craft which is brimming over with dynamic energy. We have many talented faculty, staff, students and alumni moving us forward with a myriad of novel ideas and initiatives. And this dynamic energy is being amplified by the strong and growing spirit of NUS within our community.

Last week, I was at a meeting in St Louis in the United States, where a dinner was held in the History Museum. The hall we dined in had a replica of the plane, called the Spirit of St Louis, which Lindbergh used to become the first man to fly solo across the Atlantic in 1927.

It made me reflect on the SPIRIT that drove Lindbergh and others like him – the strong desire to excel by “being where others aren’t going to be”.

I believe this spirit is taking root in NUS.

When I talk to colleagues from different departments, I often find them thinking of new ways to do things better; exploring fresh ways to differentiate and to excel. This gives me great optimism for the future of our university.
What has shaped our reputation today are the transformative measures started 10 or more years ago. What will make our reputation soar in a decade hence will be the bold and strategic moves we initiate now. Progressive and incremental changes are essential and important. But we must also do some things that are substantially different, that will help us leap-frog forward, to position for the future.

The proposed Yale-NUS College, and University Town are bold and highly strategic investments in education for the future. Our Research Centres of Excellence, integrative research clusters and the proposed NUS Research Institute in China will help keep us well ahead of the curve in research.

We will face many challenges in all these undertakings, but they will enable us to strongly distinguish ourselves.

To be where others are not going to be.

Colleagues and friends, together we have read the water to the best of our ability, as a team we are picking our paths forward.

We are well-poised to shoot ahead despite turbulent waters. But to succeed, we need your talent, passion and commitment, to bring true excellence to our work and all these endeavours. Make them highly relevant well into the future, and create distinctive new value.

And by so doing, make NUS a leading global university centred in Asia.