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The future of further education

The presidents of Singapore's six universities discuss the country's evolving higher education landscape over the years, the challenges in recruiting the best students and faculty, and what they hope to see in the Republic's university education scene in the coming decade

Roundtable participants:
- **Professor Tan Chorh Chuan, President, National University of Singapore**
- **Professor Bertil Andersson, President, Nanyang Technological University**
- **Professor Arnoud De Meyer, President, Singapore Management University**
- **Professor Tan Thiam Soon, President, Singapore Institute of Technology**
- **Professor Thomas Magnanti, President, Singapore University of Technology and Design**
- **Professor Cheong Hee Kiat, President, SIM University**

Moderator: Lee U-Wen, Correspondent, The Business Times

Q: *How would you describe the current state of Singapore's university education landscape, and how has it evolved over the last 50 years since independence?*

Tan Chorh Chuan: The development of Singapore's university education landscape over the past 50 years has been dramatic.

Today, about 30 per cent of students in a primary one school cohort will be able to study in a local university, rising to 40 per cent by 2020. In 1965, the figure was only 3 per cent.

The number of institutions has also increased to the current six publicly-funded universities which offer very diverse education pathways and articulations to employment and careers.

This massification of higher education is a very notable achievement but what is even more important is that it has been accompanied by rapid and striking advances in the quality and reputation of our universities.

For example, NUS started out as a humble medical college with 23 students in 1905, had a solid local reputation since 1965, but in recent years, has been widely recognised as one of the leading universities in Asia and the world.

I feel that a big part of the credit for the remarkable transformation of the Singapore university sector must go to the strong proactive leadership and sustained support of the Singapore government, together with the dedication and commitment to quality and excellence by generations of university leadership, academics, students and alumni.

Bertil Andersson: In Singapore's first three decades of independence, university education was relatively in reaction to the economy's needs, namely to equip graduates with requisite skills of the time.

By implementing a bilingual policy, Singapore created for itself a strong competitive advantage with English as the language of education and learning.

English is also the language of the global economy, science and technology, and having a strong command of the language has enabled Singapore to link up with the developed world and leapfrog the region in economic development.

From the late 1990s as Singapore developed into a knowledge-based economy, university education evolved in tandem to equip students with key attributes such as creative thinking and having an innovative and enterprising mindset.

Universities redesigned their curriculum and programmes, and introduced pedagogical innovations and useful technological tools so that tech-savvy students can get the most out of learning. This shift from passive to active learning has also empowered students today to take ownership of their learning.

Singapore now has one of the best education and research environments in the world, with two universities in the global top 40 and Asia's top 10.

Thanks to the high standing and quality of the higher education system, Singapore has created a valuable brand name for itself in education worldwide, especially in mathematics and science. It's not surprising that Singapore's small size and supportive environment have created what some have called a "scientific oasis".

With strong funding and manpower support, especially over the last 10 years, Singapore has built strong foundations for research and education excellence that go hand-in-hand to benefit the whole of society.

"This year, NUS celebrates its 110th year of founding together with Singapore's 50th year of independence. We are truly privileged to have among our alumni, distinguished men and women who have made – and are still making – meaningful contributions to the country and beyond, in diverse areas that include business, civil society, design, engineering, law, medicine, politics, public policy, the sciences, as well as the arts. This tradition of service and contribution to Singapore and to society is something that we treasure dearly."
– Professor Tan Chorh Chuan, President, NUS

"Singapore now has one of the best education and research environments in the world. Today, Singapore is top in the world, with two universities in the global top 40 and Asia's top 10. Thanks to the high standing and quality of the country's higher education system, Singapore has created a valuable brand name for itself in education worldwide, especially in the areas of mathematics and science."
– Professor Bertil Andersson, President, NTU

"Vision 2025 is an aspiration and a road map for SMU over the next 10 years. We will continue to meet the challenges to stay relevant in our research and to Singapore, and to be excellent at everything we do. We have built SMU into a complete, specialised university, and built up a reputation regionally and internationally for being a centre of Asian knowledge. We have launched many new programmes. Now, we need to make sure our students receive the best education they can get, and land good jobs at the end of it."
– Professor Arnoud De Meyer, President, SMU

"As a university of applied learning, our mission is to produce graduates who will be in high demand and who can continually adapt to a changing economy. Our students will be taught deep, specialist skills through our applied pedagogy. In the long run, SIT aims to produce thinking tinkerers who will graduate as best-in-class specialists. To succeed in their careers and in life, our students must be able to learn, unlearn and relearn to adapt to the ebb and flow of a changing economy through time."
– Professor Tan Thiam Soon, President, SIT

"We need to establish a vibrant, passionate, innovative university culture, a culture in which talented students are bursting with enthusiasm to change the world, in which they feel an obligation to tackle society's most significant and most exciting challenges. At the Singapore University of Technology and Design, we have taken it upon ourselves to create that culture – through our curriculum structure, the way we teach, our focus on research, and our deep collaboration with the Massachusetts Institute of Technology."
– Professor Thomas Magnanti, President, SUTD

"We have grown from just one publicly-funded university to six, and many thousands more each year have access to good quality university education. We have a more comprehensive university system now with places for both pre-employment education provided mostly by the five existing Autonomous Universities and post-employment degree upgrading provided primarily by SIM University, which is privately-funded. There is greater inclusivity and a variety of pathways for our citizens to obtain a degree."
– Professor Cheong Hee Kiat, President, UniSIM

Here is where students learn in an international environment, gaining insights from professors who hail from multiple corners of the globe, and having the opportunity to study and work in some of the world's most dynamic countries. This better prepares them for the global workplace.

Our universities benefit from having good support from both the government and industry. Singapore's public and private sectors clearly understand the importance of science, technology and innovation in bringing the nation forward in the coming decades.

Singapore is also one of the few places where you can form a truly multi-disciplinary team to work on complex research questions and anticipate future challenges.

There are also few other countries in the world for young academics to receive the kind of opportunities they get here.

In the next lap of development, Singapore needs to build up its own indigenous base of scientific and technological know-how at its universities. Inter-disciplinary research is what will enable us to achieve breakthroughs at the forefront of science, engineering and innovation.

To succeed in the future, Singapore will need talents that are well trained in inter-disciplinary problem solving, teamwork and social skills. Another challenge is to promote continuous lifelong learning.

Arnoud De Meyer: Singapore's university education landscape has grown in tandem with the country's economic development and aspirations of the people. What was only one university 50 years ago to train and produce manpower for a country that had just gained independence has now expanded to six universities to nurture talent for Singapore and beyond.

Singapore's move from low value manufacturing and service activities to producing high-value goods and services has created a critical mindset change in the way we educate the people, especially in universities.

We now promote and value greater creativity and innovation, and provide more opportunities for entrepreneurship. Having six universities – which are quite distinct from each other – means that there is a lot of diversity, and thus a greater choice for Singapore students.

Tan Thiam Soon: Over the last 50 years, the university education landscape has grown from two universities to today's six, offering a diversity of educational approaches.

This growth has been in response to the changes in Singapore's economy, the forces of globalisation, and the growing need for skilled manpower in an increasingly complex advanced economy.

This growth must be placed in the larger context of the evolution of the overall education landscape where today, more students are going to the polytechnics than the A-level or equivalent, often as a matter of choice.

Thomas Magnanti: It would be difficult for me to comment on the past 50 years, but in the last 20 years that I've been deeply engaged in Singapore, the university system has made a remarkable transition.

NUS and NTU have become world-class research universities. SMU and SUTD, in keeping with this trajectory, have created new pathways in their particular areas of focus, as well as being additional research intensive universities.

SIT and UniSIM have added even more options to the system. Undergraduate education has become less linked to – and reliant upon – the British system, and the university sector generally has become much more international, enriched by partnerships with a number of foreign universities including such powerhouses as Imperial College, Massachusetts Institute of Technology (MIT) and Yale.

Cheong Hee Kiat: We have grown from just one publicly-funded university to six, and many thousands more students each year have access to good quality university education.

We have a more comprehensive university system now with places for both pre-employment education provided mostly by the five existing autonomous universities and post-employment degree upgrading provided primarily by UniSIM, which is privately-funded.

There is greater inclusivity and a variety of pathways for our citizens to obtain a degree. We have a more diverse university landscape with a good mix of high-quality universities, some very strong in research and others which specialise in applied programmes, and still others which are in niche areas.

Q: *What are the challenges for our universities in terms of attracting the best students and faculty?*

Tan Chorh Chuan: The growth and strong progress of higher education here means that both competition and cooperation is increasing among universities in Singapore, which I view as a positive thing. If the entire Singapore university sector is dynamic and exciting, we should be able to attract even larger numbers of talented Singaporeans – including some who are currently living overseas – into local academia, teaching and research, while also recruiting more top talent from abroad. If we can continually grow the size and quality of the overall talent pool, this will be a very positive development for Singapore and for our universities.

NUS has always regarded talent development, retention and attraction as a central priority. We have substantially increased our long-standing investments into nurturing promising young Singaporeans as future academics. We continue to work hard on maintaining a vibrant and fulfilling environment where our faculty, students and staff can excel and do their best work.

However, the competition for talent is fierce and ever-intensifying and hence, we have to be very proactive in our development, retention and recruitment approaches.

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Bertil Andersson: Singapore's universities are highly regarded globally as we compete on the international stage. Both NTU and our older sister, NUS, are ranked in the world's top 40 and are producing top-notch research that is internationally recognised.

NTU is already becoming a magnet for global scientific and academic talent. Excellence attracts excellence, which is why NTU has, in the last few years, successfully attracted a host of world-class scientists and academics. They bring an international and intercultural dimension into the course content, and into teaching and learning methods. More importantly, they inspire our students and enable them to develop broad international perspectives, which better prepares our students for the dynamic global workplace.

To continue remaining attractive to the best professors and faculty, we need to give them opportunities to pursue education and research excellence and the resources to support them. To draw young outstanding researchers and scholars, NTU offers the elite Nanyang Assistant Professorship for both local and international scholars. Under this scheme, successful candidates will receive start-up research grants of up to S$1 million, hold tenure-track appointments and play leading roles in NTU's new wave of interdisciplinary research.

To continue attracting the best students, universities need to offer innovative programmes that foster the right attributes in our students so that they can thrive in the future job landscape that I mentioned earlier.

NTU saw an increase of 83 per cent in top students last year compared to 2011. The quality of students enrolling has grown remarkably since the university revamped its curriculum, initiated more tie-ups with prestigious global universities and offered innovative programmes such as the Renaissance Engineering Programme, the University Scholars' Programme and the joint medical programme with Imperial College London.

At NTU, learning goes beyond the classroom. Our residential campus is a microcosm of the world where more than 100 nationalities study, live and play together. Through the daily interactions and programmes that enhance inter-cultural skills, our students develop cultural sensitivity and learn to appreciate differences and respect others.

To enable our students to gain global exposure, eight in 10 NTU undergraduates will get to go overseas at least once for exchange, internships, field trips, competitions and more. In this way, students get the best of both worlds – to study locally and yet get the global exposure that will give them a competitive advantage in the talent race.

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Arnoud De Meyer: One of the key challenges I see is the ability of universities to focus on their strengths and differentiate themselves. This is important so as to ensure the best use of resources to produce quality programmes for prospective students.

In attracting students, universities have to be constantly ahead of the curve, innovative and agile in redefining learning opportunities. We also have to enhance programme offerings through research, education and practice.

What is also important is the ability to incorporate flexibility for students to customise their own programmes to suit diverse needs, strengths and aspirations as well as to provide them with a wide range of global exposure opportunities.

SMU students enjoy this flexibility with 15 different types of double degree programmes, 41 second majors, and they also gain depth through specialisations which groom them for high performance sectors such as wealth management, international trading, investment banking, information security and assurance, quantitative economics and maritime economics.

In addition, from this new academic year, we will be launching an innovative learning initiative called SMU-X which involves students working on various interdisciplinary projects to solve problems or issues faced by organisations. This will be combined with active mentoring by faculty and the client from the organisation.

Universities will also need to be more student-centric in their approach, to engage and empower students and involve them as co-planners in changes that affect them within the university.

This has been the practice at SMU since its inception in 2000. A recent example is that of our campus development project that involved the participation of student leaders and student focus groups representing all SMU students in the conceptualising and planning stages.

In the case of attracting faculty, we know that quality faculty are mobile and can take up appointments anywhere in the world. There is stiff competition in attracting best global talent and then the task of retaining them. We need to create an eco-system that is conducive for them to do excellent teaching and research, and where they can also connect and work with industry.

Our Centre for Management Practice has the Corporate Immersion Programme that systematically facilitates temporary placements of SMU's faculty in industry for a short duration to develop new skills, understand novel industry problems, and collect data for research. SMU also offers industry experts the opportunity to share their expertise with our students.

We also need to provide faculty with the necessary resources and funding, and give them the opportunity to excel in their chosen area of research be it within or across disciplines. Such an interdisciplinary research project that involves every school in SMU is our Research on the Economics of Ageing which is a longitudinal study over a period of 10 years.

Tan Thiam Soon: The six universities are different in their offerings and educational approach. The challenge lies in helping students and faculty find the right match for their abilities and aspirations.

Students are no longer content with an overly academic approach, as can be seen by the increasing popularity of a polytechnic education. So one other challenge involves providing enough viable pathways for these bright students to pursue degrees which will build on their training, and enable them to obtain degrees which will be relevant in the years to come.

This is why SIT was set up – to address this very real need by focusing on applied learning at the degree level.

Thomas Magnanti: In the past, many of the very best Singaporean students sought education abroad at top foreign universities.

Locally, these students have been attracted to fields such as accounting, business, medicine, and law. While these trends have had enormous benefits to the nation, Singapore also needs to attract its best students to the local universities and to important fields such as computer science, information technology, and engineering. To do so and to attract the best faculty, the government must continue to give education and research the highest priority, and the university sector must continue to develop exciting programmes. We at SUTD are working hard to do our part.

Cheong Hee Kiat: The spectrum of abilities in our students has widened significantly. The greater challenge is not about attracting the best students, which is normally narrowly defined in academic terms, but to deal with the diversity of background, talent, ability, career and life orientation of the students, and enabling each to thrive in his or her strengths.

There is also the need to find faculty who can do this well, and it is not necessarily those who are strong in research. Finding faculty who have the passion for teaching and who are committed to grow the university for the long haul will be a growing challenge as the number and size of our universities expand.

For UniSIM, as we have a more open admission policy, getting the best out of our students and bringing their best experiences into our classrooms for the benefit of the others, rather than getting the "best" students, is our focus.

We look for faculty who are have both academic and practice strengths, and these are relatively harder to find.

Q: *What makes your university a distinctive university in Singapore, in your view?*

Tan Chorh Chuan: Firstly, we are a leading global university and at the same time, we are centred in Asia. NUS students have one of the most global of educational experiences in the world. For example, more than 70 per cent of NUS undergraduates would have at least one overseas educational experience while more than three in 10 undergraduates would have spent a semester or more abroad in one of our 300-plus partner universities.

At the same time, our students would have a strong exposure to Asian-related issues, challenges, perspectives and connections.

Similarly, NUS research is performed to very high global standards, but much of it is also highly relevant to Asia providing fresh insights, analyse, technologies and potential solutions to the pressing issues of Asia.

Secondly, NUS is not just a place in Singapore for rigorous education, but also a major portal and bridge to top-class academic teachers and programmes all around the world. For example, NUS has more than 70 joint, double and concurrent-degree programmes with top overseas university partners.

Thirdly, NUS is one of the global leaders in educational innovation. The NUS University Scholars Programme, NUS Overseas Colleges and University Town are good examples.

In addition, NUS's deep strategic partnerships with Johns Hopkins University, Duke University and Yale University have resulted in the creation of unique new models of education in the form of the Yong Siew Toh Conservatory of Music, Duke-NUS Graduate Medical School and Yale-NUS College. These educational innovations are widely recognised and are often points of reference in global discussions about the future of education.

Bertil Andersson: NTU adopts a clear Humboldtian approach to teaching and research. NTU is not just focused on technology alone, but on "technology plus".

The disciplines are all interconnected, and it is at the intersections of these disciplines that much of the new knowledge and discoveries are being made and where future Nobel Prizes are won.

Interdisciplinary research is what will enable us to achieve breakthroughs at the forefront of science, engineering and innovation. To achieve this, NTU has broken down the walls separating disciplines and we are becoming more interdisciplinary in both research and education.

NTU's research is currently in five interdisciplinary areas, in sustainability, health care, new media, innovation, and as a knowledge hub combining the best of East and West. These provide the interfaces for engineering to interface with other disciplines, such as science, technology, medicine, business and the humanities.

Today, our professors are encouraged to form interdisciplinary teams and do cross-disciplinary research. And in the last few years, NTU has introduced degree programmes that allow students to go beyond their core disciplines, such as offering engineering with a business major, and biological sciences with a psychology major.

NTU has also launched the Interdisciplinary Graduate School and several interdisciplinary research centres such as Nanyang Institute of Technology in Health and Medicine and Ocular Therapeutic Engineering Centre.

With the new Lee Kong Chian School of Medicine, NTU is pushing the frontiers of future health care by cultivating an interdisciplinary culture that allows experts from different fields to come together to think of cutting-edge solutions, such as innovative medical devices.

We also work closely with industry players in various R&D areas to develop new applications or products to achieve objectives for both parties. For our industrial partners, collaboration means access to university expertise, world class facilities and resources. While for our faculty, the interaction with industrial partners ensures that their research remains relevant.

Arnoud De Meyer: When the idea of establishing Singapore's third university was first discussed in the 1990s, it was clear that it needed to be different to the two existing universities, NUS and NTU.

While they were based on the British university model, it was decided that the new university would emulate the American model. So when it was launched in 2000, SMU was the pioneer in Singapore providing an interactive, broad-based and multidisciplinary pedagogical approach to learning.

We are also unusual in the emphasis we put on encouraging our students to experience global exposure and by making it compulsory for all students to complete internships and a minimum of 80 hours of community service before graduation.

Since then, several aspects of our pedagogy and curriculum have been adopted by the other universities, but we remain distinctive in the degree of our commitment to these fundamentals. We are convinced that the bulk of the learning actually happens outside the classroom, in the projects, discussion groups, internships.

Finally, we have always been and probably will always remain Singapore's only university in the city – in terms of both our location and in how we interact with the city's business and legal institutions, the arts and heritage district and other city centre communities.

Tan Thiam Soon: At SIT, the majority of our intake comes from the polytechnics. Our pedagogy is therefore centred on applied learning, where students are given a "deep dive" in their area of specialisation. At the same time, we make sure that they are also given the broader, soft skills that will enable them to adapt to an ever-changing and evolving economic landscape.

We want to "future-proof" our students by imbuing in them the distinctive traits of our SIT-DNA – Thinking Tinkerers, Able to Learn, Unlearn & Relearn, Catalysts for Transformation and Grounded in the Community.

Our SIT-conferred degree programmes feature the Integrated Work-Study Programme (IWSP), where students are placed for a substantive period in companies to integrate what they learn in the classroom with the real working environment and to help their host companies with challenges relating to innovation, productivity and change management.

Thomas Magnanti: A research-intensive global university, SUTD is focused on technology and all elements of technology-based design.

It will educate technically-grounded leaders who are steeped in the fundamentals of mathematics, science, and technology; are creative and entrepreneurial; have broad perspectives informed by the humanities, arts and social sciences; to serve societal needs.

Only a small fraction of the world's leading universities have this mission. Even among them, we are distinctive. Through SUTD's collaboration with MIT and partnership with Zhejiang University, it embraces the best of the East and West.

SUTD students are immersed in a unique cohort-based, collaborative learning environment through which theories are brought to life and they learn by experiencing them.

All students have the opportunity to conduct research right from day one through the university's Undergraduate Research Opportunities Programme. With dedicated time for SUTD's so-called "Fifth Row" co-curricular activities – two afternoons each week are reserved for students to pursue their passions – they take some control over their own education and experience a collective vibrant student life.

Cheong Hee Kiat: I would say we are the university for lifelong learning. We are a privately-funded university providing our programmes principally to give upgrading opportunities for working adults and adult learners.

Though we are not funded by the government, our students get fee subsidies of up to 55 per cent from the Ministry of Education.

We are unique in the Singapore university education system, complementing the other publicly-funded universities, which cater almost totally to fresh school leavers and some polytechnic graduates on a full-time study basis.

We have a good understanding of the learning needs of our adult students, and have a strong practice focus and a modular course structure to fit their work orientation.

We are quick to meet market needs, have a flexible system, leveraging on online and mobile delivery on a pervasive scale. Our students are special in themselves, coming with varied work and life experiences that enrich class discussions with tutors, many of whom also come with work experience.

We are now taking in full-time students, who are subsidised like those in the other autonomous universities, but they receive an applied education like our part-time adult students, and the curriculum is designed to develop a unique "Head, Heart, Habit" disposition. So, our graduates, and indeed the university, will have a more social orientation, and actively promote lifelong learning.

Q: *What is your vision and aspirations for Singapore's university education in the next decade?*

Tan Chorh Chuan: Our vision and aspiration is for our graduates to be truly "future ready". We have invested substantially in new programmes that help our students develop the critical thinking skills, academic foundations and powers of analysis and problem solving that will enable them to take on challenging jobs and issues.

In parallel, we have also focused on initiatives that hone personal qualities such as imagination, initiative, inner resilience, integrity and teamwork, as well as an entrepreneurial spirit. We believe that all these will be critical to prepare our students well for a lifetime of careers where they can make a strong impact in whatever role or job they may take on in the future. It's a holistic, future-ready approach to higher education.

Beyond NUS, I believe that the university sector should encompass a diversity of different strategies and approaches which can allow students with different inclinations and strengths to grow their potential and to continually skill and re-skill themselves based on new job opportunities and changing work demands that may emerge.

Bertil Andersson: University education must evolve to ensure that students are equipped with attributes that will enable them to remain relevant in tomorrow's job landscape in which leaders and workers will need to continuously acquire new knowledge and skills throughout their careers. It has been said that today's new graduate will undergo about six cycles of learning, unlearning and relearning during his lifetime. So we need to train our students to become self-directed lifelong learners.

We have introduced a strategic blueprint called NTU Education, to prepare students with the attributes and skills needed in the 21st century workplace. A new initiative in this blueprint is the "flipped classroom" where students can learn at their own pace even before attending classes, typically through online materials. This will enable them to make better use of tutorial time for questions and discussions.

Through face-to-face interaction in class, students will learn more deeply, benefit from hearing each other's diverse viewpoints and learn to work with their classmates to solve complex problems. Professors can then reinforce concepts and address students' questions during classroom time. This new mode of learning is already in place for NTU medical students at the Lee Kong Chian School of Medicine. The medicine students have all their lessons on their iPad so they can learn the course content before face time with their course mates and professors in class.

Class time is then used for team-based learning where they discuss and debate the solutions to problems in what we call team-based learning. The experience of the medical students has been very positive and we have now also introduced team-based learning for students under NTU's signature Renaissance Engineering Programme.

NTU Education will nurture important life-skills in leadership, cultural competence and entrepreneurial thinking. These are all highly useful skills that will place them in good stead for future career success in a global workplace where they will lead multicultural teams.

Arnoud De Meyer: My hope for Singapore's university education in the next decade is for more people to embrace lifelong learning and for it to be commonplace for them to come back to university on a regular basis to upgrade their knowledge with short-term courses, and over a period of time to do part-time study and, for some, full-time study.

This can be further encouraged by the value placed by employers on such learning. I also hope that we are able to develop seamless linkages between the university sector and industry so as to continually build and enhance Singapore's talent pipeline.

At the same time that we become internationally recognised for the quality of our research, I hope that we will be leaders in pioneering new approaches to learning.

Tan Thiam Soon: My hope is that Singapore will become a leader in innovative university education, addressing the challenges of increasing demand for tertiary education while producing students who can meet the needs of an increasingly competitive global economy.

Also, that all of us work together towards "future-proofing" our students so that, whatever degree they receive, they are all able to adapt to a future which cannot be yet imagined. But all this needs to be achieved while keeping costs affordable so that all Singaporeans continue to enjoy access to university education without worry.

Thomas Magnanti: If I might make an analogy with the American system, although clearly smaller in scale, higher education in Singapore would become a vibrant ecosystem with:

- NUS and NTU as world leading comprehensive public universities such as Berkeley, Michigan, and Texas;
- SUTD as a more focused world-class technical-based institution such as MIT, Caltech, or Carnegie Mellon;
- SMU as among the most prestigious business schools such as its founding partner Wharton;
- SIT and UniSIM, although with different foci, would be great institutions anchored on applied learning in the spirit of such US institutions as Worcester Polytechnic Institute or the military academies.

Cheong Hee Kiat: A stronger differentiation as we go along is good, in how each university will be very good in its own right. It is not good for all our universities to look the same. But then, it is important that our population and employers have a change in mindset – to value the different variety of education and the different graduate outcomes arising from the varied paths of development that the universities take.

Perhaps we can have one more university or university-level institution, one which specialises in the arts. I hope that learning at the university level will be a more broad-based social activity, with more getting a chance to taste what learning can be acquired from the universities.

I hope the universities will be a bigger force for social and economic improvement in the future, reaching out to, and being integrated more with, our industry and community.