



NANYANG
TECHNOLOGICAL
UNIVERSITY

A

Nanyang Technological University

STELLAR

Annual Report 2012

YEAR



QS WORLD'S 50
BEST YOUNG
UNIVERSITIES



TIMES HIGHER
WORLD'S 100
BEST YOUNG
UNIVERSITIES



QS TOP 700
UNIVERSITIES



TIMES HIGHER
TOP 400
UNIVERSITIES

VISION & MISSION

A great global university founded on science and technology, nurturing creative and entrepreneurial leaders through a broad education in diverse disciplines.

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Singapore's fastest-moving university

A rising star in global higher education, NTU is ranked 4th by Quacquarelli Symonds (QS) and 16th by *Times Higher Education* among the world's young elite universities under 50 years old.

In 2012, NTU was also the fastest-rising university in the global top 50 of QS' ranking of 700 universities, leaping 27 places in two years. In another ranking of global varsities by *Times Higher Education*, NTU shot into the top 100 after making a phenomenal jump of 83 places to be ranked 86th.

The university will continue to build on its excellence in education and research, attract top international scientists, invest in a new generation of talented faculty and students, and buttress its interdisciplinary strengths – in engineering, science, business, education, humanities, arts and social sciences, and soon medicine – to seize fresh opportunities for growth and rise above new challenges.

AT A GLANCE



“To become an exceptional home for scholarship, creativity and learning, NTU must create the best possible environment for education, where our students’ potential can blossom.”

– NTU President
Prof Bertil Andersson

Top 15

most beautiful campus in the world

3

Singapore campuses

16

undergraduate halls spread over 200 hectares at Singapore’s largest campus

5,000

new hostel places by 2015

14

new physical developments over the next three years, including 2 large learning hubs

80

research institutes and centres

100

nationalities on campus

7th

globally for faculty diversity

400

academic and research partnerships

200

partner universities in 30 countries offer student attachment programmes

54

first intake at joint medical school with Imperial College London in 2013

16

joint / dual PhD programmes with overseas universities



23,700
undergraduates

9,500
graduate students

3,850
faculty and researchers

168,100
alumni across 126 countries

97%
of the Class of 2011
received a job offer within
four months of graduation

82%
of the Class of 2012 made
a graduation gift (a record
participation rate)



S\$441 million
in competitive research
grants won in FY2011/12

S\$1 billion
in funding for sustainability
research since 2005

15th
globally for industry income

41
patents granted in FY2011/12

800
technology disclosures
filed since 2007



4th
globally and only Singapore
university in inaugural
QS ranking of young elite
universities

Top 50
fastest-rising in global top
50 of QS World University
Rankings 2012

86th
in *Times Higher Education*
World University Rankings,
up sharply from 2011
ranking of 169

5th
most-cited university in
Engineering by Essential
Science Indicators of
Thomson Reuters

CHAIRMAN'S MESSAGE



“A university must be a place that catalyses intellectual and creative discourse, especially across disciplines, where the next big discoveries lie. Our new campus master plan aims to live up to this challenge, supporting the transformational changes taking place across the entire university.”

MOVING FORWARD

NTU entered an exciting phase of growth in the last academic year. Led by the new management team, we further pushed the boundaries of higher education, enhancing our talent pool, academic and research programmes and the supporting structures of the university.

In the recent Quacquarelli Symonds World University Rankings, NTU was the fastest-rising university among the world's top 50 universities. That is certainly something to be proud of.

In 2010, we launched a strategic plan to make a global impact in five important interdisciplinary areas by 2015. There has been brisk progress on this front, especially in the domains of sustainability, healthcare and new media. With world-acclaimed faculty leading many of these initiatives, and supported by a network of well-funded research centres and esteemed global partners, NTU is rising to the challenges of modern living, addressing issues from sustainable urban growth and public health issues to energy and environmental concerns. In 2012, we reached a milestone in our healthcare thrust when the ground was broken for our joint medical school with Imperial College London at NTU's Novena campus.

A university must be a place that catalyses intellectual and creative discourse, especially across disciplines, where the next big discoveries lie. Our new campus master plan aims to live up to this challenge, supporting the transformational changes taking place across the entire university.

It will bring us closer to our vision of being a modern campus at the leading edge of science and technology. I hope the state-of-the-art buildings and facilities coming up will deepen and widen NTU's research and innovation capacity, as well as spur collaboration among faculty, students and our industry and academic partners. NTU will be a campus infused with the best ideas and the most dynamic possibilities.

I am already sensing a new synergy within the NTU community. It is great to see students and university administrators working closely to further the goals of this university. Students are also being given a bigger say in campus developments. I recently invited some student leaders to participate in a Board retreat. We were all greatly inspired by their dynamism, drive and ambitions to realise their ideals and make a difference in the lives of fellow NTU students. I look forward to watching these young leaders and others like them at NTU make their mark in the coming years as confident, socially-conscious individuals who can ably serve the nation and wider community.

As part of the renewal process in the governance of NTU, we welcomed three new Board members – Ms Chan Lai Fung, Permanent Secretary (Education Policy); Mr Goh Sin Teck, Editor of *Lianhe Zaobao*; and BG (NS) Tan Meng Dui, Deputy Secretary (Technology). Mrs Tan Ching Yee and Mr Edmund Cheng left the Board in March 2012 but Mr Cheng has stayed on to chair the newly formed Campus Planning Advisory

Committee. My thanks go to the both of them for their dedicated leadership.

Institutions are only as good as their people and partners. I am therefore grateful to the Board, university leadership, faculty, staff, students and alumni, whose talents and hard work have raised this university. We must also thank our collaborators and benefactors for generously supporting our mission.

On behalf of NTU, I also express my appreciation to former Singapore President Mr S R Nathan, who was NTU's Chancellor for 12 years until his retirement from the presidency in 2011. We are honoured to have Singapore President Dr Tony Tan as our new Chancellor. At the same time, we are glad Mr Nathan will remain very much a part of this university as a Distinguished Senior Fellow of the S Rajaratnam School of International Studies, which he was instrumental in founding in 1996.

By continually investing in our facilities, people, programmes and partnerships, I am confident that NTU will be able to maintain its momentum of rapid growth and transformation to set new benchmarks in higher education and research. We will educate successive generations of young, global citizens who will make the world better than it is today.

Mr Koh Boon Hwee
Chairman, Board of Trustees
Nanyang Technological University

IN CONVERSATION WITH THE NTU PRESIDENT



“Despite stiffer competition in Singapore’s higher education landscape and a growing trend of top students studying overseas, in 2012, we saw a 43% spike in the number of top A-level students joining NTU.”

GAINING MOMENTUM

Looking back at the year, what were some highlights for you?

2012 was the year we moved up global varsity rankings – as the fastest-rising university in the world's top 50, according to Quacquarelli Symonds (QS), which also ranked NTU fourth in the world among young varsities. We rocketed up the *Times Higher Education* ranking by 83 places to be among the world's top 100 universities. Of course, as QS and Times Higher use different methodologies in their rankings, there is no basis for comparing the two. Notably, in terms of the international diversity of our faculty, NTU was ranked seventh by QS – a reflection of the cosmopolitan nature of our campus with some 100 nationalities.

The Economist rated NTU's MBA programme as Singapore's best for nine straight years. Our MBA is also in the world's top 35 for the fourth year running, according to the *Financial Times*. Our Accounting research was once again ranked first in Asia and seventh worldwide by Brigham Young University. The School of Electrical & Electronic Engineering and School of Computer Engineering were both ranked number one in Singapore and fourth in the world (after MIT, University of California, Berkeley, and Stanford University) by the Higher Education Evaluation & Accreditation Council of Taiwan.

NTU students, faculty and staff won international honours, from prizes for eco-cars, communication and design to awards for sports, academics and scientific achievements. We are flying the Singapore flag across the globe.

What is NTU's strategy for success?

The four key ingredients to me are good students, world-class faculty, great research and top partners. As the NTU President, I am proud that we have attracted the best and brightest students to NTU and that employers appreciate the quality of our graduates. Our faculty have done research published in leading journals and are rated highly by students for their teaching effectiveness. Industry and academic partners recognise our strengths and want to work with us. With the solid support of the Singapore Government, NTU will continue to make good progress. I would like to thank NTU's Board of Trustees, management, faculty, staff, students and alumni for their support, dedication and hard work.

NTU welcomed a bumper crop of top students in 2012. Can you tell us more?

Despite stiffer competition in Singapore's higher education landscape and a growing trend of top students studying overseas, in 2012, we saw a 43% spike in the number of top A-level students joining NTU. The Accountancy & Business double degree programme was the second most popular programme in Singapore among these top students. Despite being just a year old, the dual-degree Renaissance Engineering Programme was the sixth most popular programme. With growing awareness of our rising international standing, first-rate facilities and special programmes, such as the new University Scholars Programme, we have been successful in attracting more high-calibre students from Singapore. Our pool of top students

will grow further when our joint medical school with Imperial College London enrolls its first batch of students in August 2013.

What challenges will students face when they go out to work?

They will enter a fast-paced, international environment, where they will be part of global, cross-cultural teams. The issues they handle will be borderless and complex, such as climate change, global epidemics and cyber security. To thrive in this challenging environment, they need to be conversant with world issues, innovative, versatile, creative, and at ease with different cultures, as well as adopt an interdisciplinary approach in whatever they do.

Even today, many of the world's problems cannot be solved by people from a single discipline. In fact, I see the need to prepare our students for careers that have not yet been born. We may even need to prepare them to be the leaders who invent those new professions.

How can our students' learning needs be met?

We give them state-of-the-art disciplinary knowledge across different fields, while emphasising the development of soft skills as well as entrepreneurial and leadership qualities. In a curriculum makeover rolled out last year, NTU's undergraduates are being stretched, both in terms of depth and breadth. They spend more time on group-based projects and self-learning, and more students are benefiting from overseas exposure that helps them develop a global mindset. At NTU, 7 in 10 undergraduates will go abroad at least once during their studies.

IN CONVERSATION WITH THE NTU PRESIDENT

What other new initiatives support this educational goal?

In 2012, the Interdisciplinary Graduate School was launched to pioneer a new approach to PhD education that combines two or more disciplines. This trains future leaders and researchers to think at an advanced level from a multidisciplinary perspective, which could lead to fresh ways of tackling old and new problems.

In this digital age, we have embraced the inevitability of technology transforming higher education. Tutorial rooms have been converted into IT-enabled classrooms retrofitted for interactive, group learning, as that's the way students learn today. The new learning hub on campus will provide a modern, technology-enhanced environment and it has the larger mission of bringing people and their ideas together, as that is how humanity can be best served.

How employable are NTU graduates?

Employers tell us our graduates are well-prepared for the workplace and have integrity and a positive work attitude. They go on to perform well in their careers. Each graduating class has enjoyed high employment, with fresh graduates getting multiple job offers, being offered jobs while on internships, taking on careers overseas, and some becoming entrepreneurs and creating jobs for others. We hear many stories of NTU graduates landing plum overseas posts and their employers returning to hire more of our graduates.

Two in three graduates from the Class of 2012 secured a job before graduation. The inaugural batch of graduates from the Double Degree in Accountancy & Business programme achieved full employment, with the top

10 per cent of the highest-paid in this cohort drawing \$7,145 on average.

What are the most exciting developments at the new medical school?

The Lee Kong Chian School of Medicine, our joint medical school with Imperial College London, broke ground last year. The school's dual campus is being developed to provide the best environment for advanced medical learning and research. With an undergraduate curriculum that reflects the realities of modern medicine, a research strategy that draws on the strengths of its parent universities, and some of the top medical minds to lead the way, the school will push the frontiers of future healthcare.

It will also cultivate a progressive scientific culture where experts from different fields can come together to think of solutions that improve healthcare. I am certain the school's first intake will benefit from this interdisciplinary outlook on medicine and healthcare.

Who are some of your recent top hires?

We take pride in our world-class faculty, and in 2012, we welcomed more of such world-acclaimed academics such as Prof Dermot Kelleher, a leading immunology and infectious diseases expert, who heads the medical school. Prof Bernd Schmitt came on board to steer NTU's Institute on Asian Consumer Insight. He is one of the world's foremost experts in Asian consumer insight, customer experience, branding and innovation. Molecular biologist Prof Daniela Rhodes FRS, who is internationally recognised for her contributions to chromosome biology, also joined us from the MRC Laboratory of Molecular Biology in Cambridge. They are just a few examples of the leading lights here at NTU.

I am also proud that NTU is the institution of choice for outstanding young researchers globally, including National Research Foundation (NRF) Fellows. Our own premier young faculty recruitment programme, the Nanyang Assistant Professorship, which we launched five years ago, is now one of the most rigorous young scientist schemes in the world. It has risen in prestige, with over 58% of the applicants in 2012 coming from QS Top 100 universities. To date, NTU has appointed 26 Nanyang Assistant Professors who, together with the NRF Fellows, have secured external funding amounting to S\$51.5 million since their appointments.

How well-regarded is NTU's research?

One measure of research calibre is the amount of competitive funding we receive from external organisations. In FY2011, we secured about S\$441 million in such funding, a large increase from S\$92 million in FY2005. These funding awards are a clear indication of the impact and relevance of our projects to industry and economic development. In the latest *Times Higher Education* university rankings, NTU scored 99.5 in industry income, the 15th highest in the world. There has also been a significant improvement in NTU's average citations per paper. Our rapid rise as a research-intensive university shows we are reaping the results of our focused efforts.

How will research at NTU prepare us for a better future?

We have been concentrating our strengths in five important areas – sustainability, healthcare, new media, the best of East-West research, and innovation. We are already a world leader in sustainability, with over S\$1 billion in competitive funding in this area and several multi-million dollar

institutes and centres, including the Singapore Centre on Environmental Life Sciences Engineering, which we officially opened in 2011 as the second national Research Centre of Excellence at NTU after the Earth Observatory of Singapore.

We have launched new projects with partners like Rolls-Royce, BMW, Siemens, Robert Bosch, Thales, Airbus and Carl Zeiss. Several of these industry leaders have joint laboratories with NTU on our campus and the solutions being worked on are immediately applicable to real-world problems. The impact of our work extends far beyond the borders of Singapore. And because our five strategic thrusts are interdisciplinary in nature, exciting developments are brewing at the interface between critical fields of research.

Could you share examples of recent projects under each of the five strategic areas of research?

Not many universities can match our level of expertise in sustainability. Through the new Cambridge Centre for Carbon Reduction in Chemical Technology, for example, we are working with the University of Cambridge in Singapore to minimise the carbon footprint of industrial-scale chemical processes. We started the Advanced Biofilm Imaging Facility at NTU with Carl Zeiss to boost used water treatment and environmental life sciences engineering research. With the Austrian Institute of Technology, we are studying how to design innovative buildings and cities that make effective use of energy, water and materials.

In healthcare, we have exciting projects in areas such as neuroscience, metabolic disease, bioengineering and health services outcomes. One healthcare innovation we helped develop is an eye gel that releases a drug

over time to combat post-surgical scarring in glaucoma patients.

In new media, the BeingThere Centre is blazing a trail in next-generation 3D communication for work, education and leisure, in close partnership with the Swiss Federal Institute of Technology Zurich and the University of North Carolina at Chapel Hill. Newsplex Asia at NTU, set up with the World Association of Newspapers and News Publishers, will revolutionise the training and operations of newsrooms.

NTU bridges the best of the East and West, and our presence is strong in China, where we train many of the country's top administrators and are involved in large innovation projects. In 2012, we enhanced the "Mayors' Programme" to help China's top-tier officials better address urban management and economic restructuring issues in their home country. Through our fellowship programme with University College Cork, promising Irish leaders head here to get a leg up in Asian business. We are also making headway with the world's first national research institute focused on Asian consumer markets.

In innovation, we co-hosted Asia's first World Entrepreneurship Forum, where participants from 56 countries exchanged strategies for building successful businesses.

What are some key initiatives coming up?

NTU is undergoing its biggest physical transformation since 1991, with the first-phase implementation of a Campus Master Plan that will turn our park-like campus into a sustainable mini-city. The futuristic facilities and social spaces coming up will promote cross-campus vibrancy and support new pedagogies and research.

Some of the major facilities will be ready as early as the middle of 2014, such as the seven-storey learning hub at the South Spine, set to become the next physical icon at NTU after the School of Art, Design & Media building. The first two of eight new undergraduate halls are being built and will be eco-friendly residences set in lush greenery. Our Novena campus, the headquarters of the new medical school, will house a high-rise Clinical Sciences Building by 2015.

Last year, we started the makeover of our undergraduate education and we will continue to transform our programmes and pedagogy to prepare our students for the new global workplace. There will be more ICT-based learning as well as other initiatives to help students enhance their communication and interpersonal skills.

Our engineering programmes will be reviewed and updated to better meet the needs of industry. The new Division of Earth Sciences will offer a minor in Environmental Sustainability in AY2013 and a degree in Earth and Environmental Sciences in AY2014. We will also set up a new division to offer programmes in Environmental Sciences in the future.

Our new medical school, which has done extensive outreach activities, will enrol its first students in August 2013, and we are brimming with optimism that it will be a huge success.

In research, we are implementing international best practices to achieve research standards comparable to other leading universities. To support this momentum of rapid growth, we will continue with campus-wide administrative reforms to improve efficiencies and inculcate a service mindset.

BOARD OF TRUSTEES

(As at 31 July 2012)



Mr Koh Boon Hwee (Chairman)
Chairman
Sunningdale Tech Ltd
Yeo Hiap Seng Ltd
Appointed on 28 March 2006



Mr Alwi Bin Abdul Hafiz
Managing Director, ASEAN
BSI Group Singapore Pte Ltd
Appointed on 28 March 2006



Ms Chan Lai Fung
Permanent Secretary
(Education Policy)
Ministry of Education
Appointed on 1 April 2012



Mr Chia Ban Seng
Managing Director
Indocement Singapore Pte Ltd
Appointed on 28 March 2006



Ms Jennie Chua
Chief Corporate Officer
CapitaLand Ltd
Appointed on 28 March 2006



Mr Goh Geok Ling
Chairman
SembCorp Marine Ltd
Appointed on 28 March 2006



Mr Goh Sin Teck
Editor, *Lianhe Zaobao*
Consulting Editor, *MyPaper*
Appointed on 1 June 2012



Mr Kwek Leng Joo
Managing Director
City Developments Ltd
Appointed on 28 March 2006



Mrs Lee Suet Fern
Chairman and Managing Partner
Stamford Law Corporation
Appointed on 15 July 2006



Ms Lien Siaou-Sze
Senior Executive Coach
Mobley Group Pacific
Appointed on 28 March 2006



Mr Lim Chee Onn
Senior International Adviser
Singbridge Pte Ltd
Appointed on 25 August 2009



Mr Lim Chuan Poh
Chairman
Agency for Science, Technology
and Research
Appointed on 28 March 2006



Sir Keith O'Nions
President and Rector
Imperial College London
Appointed on 17 March 2011



Prof Haresh Shah
Professor (Emeritus)
Stanford University
Appointed on 28 March 2006



Mr Inderjit Singh
Chief Executive Officer
Infiniti Solutions Pte Ltd
Appointed on 28 March 2006



BG (NS) Tan Meng Dui
Deputy Secretary (Technology)
Ministry of Defence
Appointed on 1 July 2012



Mr Wong Yew Meng
Board Member
People's Association
Appointed on 1 August 2010



Mr Ernest Wong
Chairman
Fullerton Financial Holdings Pte Ltd
Appointed on 28 March 2006



Prof Alexander JB Zehnder
Chairman
Triple Z Ltd
Appointed on 25 August 2009



Prof Bertil Andersson
President
Nanyang Technological University
Appointed on 1 July 2011

UNIVERSITY LEADERSHIP

(As at 31 July 2012)

SENIOR MANAGEMENT TEAM



Prof Bertil Andersson

President

Appointed on 1 July 2011

Prof Andersson first became Provost in 2007, where he helped to strengthen NTU's reputation as one of the fastest-growing research-intensive universities in the world. He was installed as NTU's third President on 1 July 2011. He was formerly President of Linköping University, Sweden, from 1999 to 2003, and the Chief Executive of the European Science Foundation from 2004 to 2007. As the man at the helm of the European Science Foundation in Strasbourg, France, his last post before joining NTU, he consolidated research efforts across 30 European countries. A world-renowned plant biochemist with a longstanding association with the Nobel Foundation, where he had also chaired its Chemistry Committee, Prof Andersson has pioneered research on the artificial leaf, a promising area of sustainable energy research that uses sunlight to produce clean, low-cost sources of energy. He is part of a global league of leading scientists, joining 16 Nobel Prize winners among others since 1921 who have been awarded the Wilhelm Exner Medal for shaping the world through research.



Prof Freddy Boey

Deputy President and Provost

Appointed on 1 July 2011

Before assuming the role of Provost, Prof Boey served as the Chair of NTU's School of Materials Science & Engineering from 2005 to 2010, leading its transformation into one of the world's largest materials engineering institutions. A dedicated educator and administrator, he also has a sterling track record of breakthrough commercial applications that have given the "made in Singapore" label pride of place on the global stage. In the three years before he became NTU's Provost, he had won about S\$36 million in competitive research funding, including a S\$10 million individual grant to develop fully biodegradable cardiovascular implants for hole-in-the-heart conditions. Prof Boey has filed 25 original patents with NTU, the majority of which have been licensed. These patents have resulted in five spin-off companies, formed to license his various life-giving biomedical solutions. His newest invention, a customisable hernia mesh, is the first such surgical mesh approved for sale by the US Food and Drug Administration. NTU's role model for research, education and enterprise, Prof Boey actively champions the marriage of all three aspects on campus.

The other members of the senior management team are:

Prof Lam Khin Yong

Chief of Staff

Appointed on 1 July 2011

Chief of Staff-Designate (1 April – 30 June 2011)

*Associate Provost (Graduate Education & Special Projects)
(1 April 2008 – 30 June 2011)*

*Chair, School of Mechanical & Aerospace Engineering
(1 January 2006 – 30 April 2008)*

Prof Er Meng Hwa

Vice President (International Affairs)

Appointed on 1 July 2011

*Vice President-Designate (International Affairs)
(1 April – 30 June 2011)*

Senior Associate Provost (1 April 2008 – 30 June 2011)

*Acting Dean, Graduate Studies Office
(1 September 2007 – 31 March 2008)*

Prof Stephen Kevin Smith

Vice President (Research)

Appointed on 1 October 2011

*Founding Dean, Lee Kong Chian School of Medicine
(1 October 2011 – 31 July 2012)*

Prof Angela Goh

Associate Provost (Faculty Affairs)

Appointed on 1 July 2011

*Associate Provost-Designate (Faculty Affairs)
(1 April – 30 June 2011)*

*Acting Chair, School of Computer Engineering
(15 October 2007 – 31 January 2010)*

*Associate Chair (Academic), School of Computer Engineering
(1 August 2006 – 30 November 2007)*

Prof Peter Rainer Preiser

Associate Provost (Graduate Education)

Appointed on 1 July 2011

*Director, CN Yang Scholars Programme
(1 October 2010 – 30 September 2013)*

*Deputy Director, BioSciences Research Centre
(1 August 2004 – 31 July 2010)*

Assoc Prof Kwok Kian Woon

Associate Provost (Student Life)

Appointed on 1 July 2011

*Associate Provost-Designate (Student Life)
(1 April – 30 June 2011)*

*Associate Chair (Academic), School of Humanities & Social Sciences
(1 July 2010 – 30 June 2011)*

*Associate Chair (Academic Services), School of Humanities & Social
Sciences (1 August 2006 – 30 June 2010)*

Prof Kam Chan Hin

Associate Provost (Undergraduate Education)

Appointed on 1 July 2011

*Associate Provost-Designate (Undergraduate Education)
(1 April – 30 June 2011)*

*Chair, School of Electrical & Electronic Engineering
(1 August 2006 – 31 March 2011)*

*Dean, School of Electrical & Electronic Engineering
(1 June 2005 – 31 July 2006)*

UNIVERSITY LEADERSHIP

DEANS OF COLLEGES

Prof Gillian Yeo

Interim Dean, Nanyang Business School

Appointed on 1 May 2009

Acting Dean, College of Business

(1 February – 30 April 2009)

*Executive Associate Dean & Dean (Degree Programmes),
College of Business (1 August 2006 – 30 June 2011)*

*Executive Vice-Dean & Dean (Degree Programmes),
Nanyang Business School (1 July 2004 – 31 July 2006)*

Prof Janie Fouke

Dean, College of Engineering

Appointed on 1 July 2011

Dean-Designate, College of Engineering

(1 February – 30 June 2011)

Prof Alan Chan

Dean, College of Humanities, Arts, & Social Sciences

Appointed on 1 October 2009

*Committee Vice-Chair, New Silk Road Peak of Excellence,
President's Office (from 24 August 2011)*

Prof Ling San

Dean, College of Science

Appointed on 1 August 2011

Chair, School of Physical & Mathematical Sciences

(1 April 2008 – 31 December 2010)

*Head, Division of Mathematical Sciences, School of Physical &
Mathematical Sciences (1 July 2005 – 31 March 2008)*

*Head-Designate, Division of Mathematical Sciences, School of
Physical & Mathematical Sciences (1 April – 30 June 2005)*

Prof Dermot Kelleher

Dean, Lee Kong Chian School of Medicine

Appointed on 1 August 2012

HEADS OF AUTONOMOUS INSTITUTES

Prof Lee Sing Kong

Director, National Institute of Education

Appointed on 1 November 2006

Managing Director, National Institute of Education International

(from 1 July 2009)

Acting Director, National Institute of Education

(16 January – 28 February 2006)

*Dean, External Programmes (Knowledge Horizon),
National Institute of Education (1 October 2005 – 30 June 2009)*

Ambassador Barry Desker

Dean, S Rajaratnam School of International Studies

Appointed on 1 January 2007

Director, Institute of Defence & Strategic Studies

(1 October 2000 – 2 October 2008)

Prof Kerry Sieh

Director, Earth Observatory of Singapore

Appointed on 1 July 2008

Prof Staffan Kjelleberg

Director, Singapore Centre on Environmental Life
Sciences Engineering

Appointed on 1 January 2011

HIGHLIGHTS



from Singapore, May, over 17,

“I love the design of the learning hub – it looks so cool and modern. Facilities like the café and rooftop garden will be a huge draw to students as we can chill out over coffee or study into the wee hours of the night.”

– Aretha Poh, NTU undergraduate, on the iconic 24-hour facility coming up for students (seen on screen)

HIGHLIGHTS



“We have modernised our teaching to give students the knowledge they need tomorrow, and not the knowledge that was needed yesterday.”

– NTU President Prof Bertil Andersson

Under the revamped CN Yang Scholars Programme, high-calibre students with a deep passion for science and engineering can accelerate their PhD aspirations with a top scholarship.

EDUCATION

Undergraduate

- NTU begins rolling out a **revamped curriculum** with at least 30% of courses outside the student’s main discipline.
- Amidst intense competition in the higher education sector, there is a 43% increase in the number of top A-level students accepting NTU offers in AY2012. The **Accountancy & Business double degree programme** is the second most popular programme among these top students. Despite being just a year old, the dual-degree **Renaissance Engineering Programme**, aimed at grooming future global leaders, is the sixth most popular programme amongst top A-level students.
- The new **University Scholars Programme** offers cross-disciplinary courses and experiences that stretch the intellectual limits of top students. It is offered to a select group of 66 students.
- Other new programmes include the **Bachelor of Arts (Honours) in History** and **minors in Philosophy** and **Film Studies**.
- The **CN Yang Scholars Programme** is revamped to offer an accelerated PhD pathway for high-calibre science and engineering students.
- The **NTU International Summer School in China Programme** is launched in Tianjin, China. NTU students, together with their counterparts from American and Chinese universities, take courses in subjects such as urban sustainable development and East-West comparative culture, and go on field visits.
- The **teaching appraisal scheme for faculty** is restructured to include teaching portfolio, peer review and academic advising and mentoring. Focus is also given to strengthening pedagogical skills through seminars and courses.



NTU's graduate programmes help to develop new competencies for new realities. In 2012, the Interdisciplinary Graduate School was launched to pioneer a fresh approach to PhD education that combines disciplines.



NTU students were involved in the building of X-SAT, Singapore's first locally-made micro-satellite, now in space. They have been working on Velox-I, which will be the nation's first student-made nanosatellite in orbit.

Graduate and Executive

- **PhD student enrolment** increases from 3,009 in AY2010 to 3,307 in AY2011. NTU is on track to reach its target of 3,500 PhD students by 2015.
- The **Interdisciplinary Graduate School**, the first of its kind in Asia, opens its doors to the first batch of 25 PhD students, who can combine two or more disciplines in their research. The school will initially focus on sustainability, healthcare and new media. It will recruit another 75 PhD students in AY2012.
- More **joint PhD programmes** are set up with universities around the world such as the Medical University of Vienna.
- The **Mayors' Programme** is further customised to enable China's top-tier officials to better address urban management and economic restructuring issues in their home country.
- Senior business executives complete the new **Future China Advanced Leaders Programme**, jointly run by NTU and Business China.
- A new "**Train-the-Trainer**" programme is started with Temasek Foundation to help senior Vietnamese officials gain expertise in public administration, policy and governance.
- A **three-week winter school**, led by the Institute of Advanced Studies and involving the European Organisation for Nuclear Research, brings the latest in particle physics and cosmology to Singapore and Asia.

HIGHLIGHTS



The architectural plans of these two new undergraduate halls were adjusted based on the feedback of NTU students to better meet their needs.

CAMPUS LIFE

- NTU undergoes its biggest physical transformation since 1991, with the first-phase implementation of a **Campus Master Plan** that will turn NTU's park-like campus into a sustainable mini-city. Students are given a say in the design of facilities for them.
- Work begins on a S\$45 million **learning hub** at the South Spine. To be completed in 2014, it will promote interactive learning and recreation in a futuristic environment. Planning is underway for a similar facility at the North Spine.
- Construction begins on **two new undergraduate halls** offering accommodation for 1,250 students. Another six halls will be built by 2015. NTU's **new graduate hall** reaches the final stage of construction.
- **New informal learning spaces**, offering 1,000 more seats, are provided throughout the North and South Spines, and **more tutorial rooms are reconfigured** to support collaborative learning.
- The NTU Students' Union hosts the inaugural **ASEAN Student Leaders' Forum** on student governance. It draws students from 18 universities in the region.
- Spearheading a campaign to make campus life more vibrant, NTU President Prof Bertil Andersson launches **HEY!**, a **new student-centred magazine** with digital platforms. **HEY!** is the first university magazine in Singapore to have an iPad edition.
- NTU students actively engage in the sporting life, emerging as the **top performing institution** in the **Institute Varsity Polytechnic Games** with five Gold and seven Silver medals.



The ground-breaking ceremony of the Lee Kong Chian School of Medicine at the Novena campus, a historical site where a hostel for medical students built in 1924 is being restored as the school's headquarters.

LEE KONG CHIAN SCHOOL OF MEDICINE

- Set up jointly with Imperial College London in Singapore, the school holds its **ground-breaking ceremony** at the Novena campus on 28 May 2012.
- Plans for a **dual campus** are unveiled. The Novena campus in Singapore's medical district will house the **school's headquarters** (to be ready for the first intake of 54 students in 2013) and a **clinical sciences building**. An **experimental medicine complex** will be built at the Yunnan Garden campus within NTU's biomedical-engineering cluster.
- Leveraging the strengths of its parent universities, the school's **research foci** will include neuroscience, mental health, metabolic and infectious diseases, and bioengineering.
- **Prof Dermot Kelleher**, the Principal of the Faculty of Medicine at Imperial College London, is appointed the **new Dean** of the Singapore school.
- The school's admission requirements include the **BioMedical Admissions Test** and a series of **multiple mini-interviews** to identify students who have the best chance of becoming competent patient-centred doctors who can meet Singapore's healthcare needs.
- Students will be **tutored by leading clinicians and researchers** and will undergo an **integrated curriculum** with early clinical exposure that will offer a wide experience of healthcare, allowing specialisation in a range of fields later on.
- At a **"live" presentation of trauma surgery** by Visiting Professor Roger Kneebone from Imperial College London, 600 prospective students sample the **simulation technology** that will be used in the school's teaching of surgery and medicine.
- Two **new fellowships** are established to develop a cadre of outstanding biomedical and clinical research scientists at the school.

HIGHLIGHTS

State-of-the-art facilities for medical education and research – the experimental medicine building at the Yunnan Garden campus (right) and clinical sciences building at the Novena campus (bottom).



The new campus facilities that await students of the Lee Kong Chian School of Medicine include academic and social spaces such as learning studios, alcove clusters, seminar rooms, clinical laboratories and student lounges. The environment was carefully designed after visits to leading medical schools abroad.



“We have ambitious goals to redefine both medical education and research. NTU, Imperial College London and our healthcare partners are all working hard to form a curriculum and learning environment that will offer students an outstanding medical education.”

– Prof Dermot Kelleher, Dean, Lee Kong Chian School of Medicine and Principal of the Faculty of Medicine at Imperial College London



The quality and impact of NTU's research output has increased significantly.

RESEARCH

- The number of **publications** co-authored by NTU faculty in international refereed journals with an impact factor of ≥ 10 in 2011 increases about **fivefold** compared to 2007.
- NTU's share of **competitive research funding awards** rises to **S\$441 million**, surpassing the high level of S\$436 million achieved in FY2010. Major funding awards include:
 - The first **Ministry of Education Academic Research Fund Tier 3 Grant**, valued at S\$10 million, for a project on disruptive photonics technology led by Prof Nikolay Zheludev from the School of Physical & Mathematical Sciences
 - Nearly half the **Tier 2 Grants** awarded nationally by the Ministry of Education (NTU's success rate rises from 8.8% in February 2010 to 20% in February 2012)
 - Two research grants worth S\$10 million each under the 8th call of the National Research Foundation's **Competitive Research Programme** scheme
 - S\$50 million from the **Agency for Science, Technology & Research**, twice the amount received in 2010
 - S\$10 million from the **Media Development Authority** for Active Living for the ElderLY (LILY), a research collaboration with University of British Columbia in elderly-friendly technologies
 - S\$6 million from Singapore's **National Medical Research Council**
 - S\$56 million from the **Economic Development Board** to fund the Institute for Sports Research, a collaboration between NTU and Loughborough University; the Institute on Asian Consumer Insight; the Centre for Optical & Laser Engineering; and the Naval Architecture & Marine Engineering Professorship
 - S\$20 million from various **industry partners**, including Rolls-Royce, Royal Philips Electronics and Panasonic, for joint research projects
- NTU is the major university partner for four new CREATE projects worth S\$85 million, funded by the **National Research Foundation**. They include the **Singapore-Berkeley Initiative for Sustainable Energy** and the **Cambridge Centre for Carbon Reduction in Chemical Technology**, both focused on clean technologies. CREATE brings together world-class international research universities and Singapore-based universities and research institutions.

HIGHLIGHTS



Newsplex Asia is a high-tech newsroom of the future that brings together various media platforms to help students learn about integrated digital media. Set up with the World Association of Newspapers and News Publishers, it is the third of its kind in the world and the first in Asia.

- A permanent **Chair in Natural Hazards** is set up with €3 million (about S\$5 million) from the **AXA Research Fund**. It is held by renowned geologist Prof Kerry Sieh, the first AXA Chair in Asia.
 - NTU begins **benchmarking its research productivity** and future research priorities using bibliometric analytical tools.
 - A university-wide initiative, the **Research Administrators' Network**, is started for research administrators to share best practices and international standards in research administration.
 - The **NTU Research Integrity Policy** is updated to include the Singapore Statement on Research Integrity.
 - The **Network of Research Integrity Points of Contact** is established as a formal structure for discussions and issues related to research integrity within the university.
 - **Centre for Optical & Laser Engineering**, to extend the field of optical engineering and industrial R&D in the areas of optical design, manufacturing and testing
 - **Joint Research Lab in Ubiquitous Commerce**, with Lushang Group, to pioneer ubiquitous commerce technologies and services for the elderly and society at large
 - **Maritime Institute @ NTU**, to advance maritime R&D and education, leveraging NTU's established interdisciplinary strengths in this area
 - **Meinhardt Water Training Centre**, with Meinhardt Group, to enhance competence in water management and promote Singapore as a centre of excellence for the water industry
 - **Nanyang Institute of Technology in Health & Medicine**, to synergise research activities related to health and medicine
 - **Newsplex Asia at NTU**, with the World Association of Newspapers and News Publishers, to revolutionise the training of media professionals and operations of newsrooms
- New Centres and Institutes**
- **Advanced Biofilm Imaging Facility**, with Carl Zeiss, to boost used water treatment and environmental life sciences engineering research in Singapore
 - **Advanced Remanufacturing & Technology Centre**, with the Agency for Science, Technology & Research and industry partners, to drive value-added remanufacturing activities that can be readily adopted by the industry
 - **Cambridge Centre for Carbon Reduction in Chemical Technology**, a CREATE partnership involving University of Cambridge that aims to minimise the carbon footprint of industrial-scale chemical processes



A satellite image of western Singapore taken by X-SAT. Images like this one can be used to track environmental changes such as soil erosion and sea pollution.

- **NTU-JTC Industrial Infrastructure Innovation Centre**, with JTC Corporation, to develop sustainable solutions in areas such as reclamation, underground construction, and water and energy recycling

Research Spotlight

A showcase of the university's diverse strengths in its five broad areas of focus:

Sustainable Earth

- The S\$120 million **Singapore Centre on Environmental Life Sciences Engineering**, a national Research Centre of Excellence, marks its official launch with two flagship programmes that will help to reshape the waterways of Singapore.
- Singapore's first locally-made satellite **X-SAT**, designed for earth monitoring missions, completes more than 200 imaging missions in its first year in orbit. It beams back over 1,200 images captured across all continents.
- The **No-Mix Vacuum Toilet** turns human waste into electricity and fertilisers, in addition to reducing the amount of water needed for flushing by up to 90%.
- **Memshield**, a 3-in-1 water quality monitoring system pioneered by an NTU start-up, reduces operational costs at water treatment plants by up to two-thirds.
- A **superefficient "inexact" computer chip** developed by NTU and Rice University wins best-paper honours at the ACM International Conference on Computing Frontiers in Cagliari, Italy.



Photo: Silke Baron

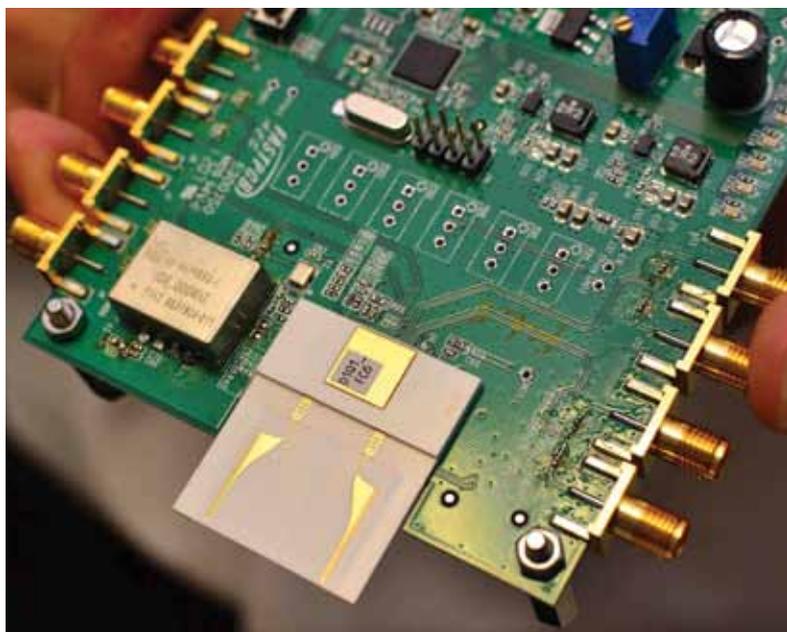
NTU researchers are trying to replicate the damage-resistant property of the mantis shrimp's club-like "arms".

- Wetland plants are harnessed to lower the cost of **removing pollutants from Kandy Lake** in Sri Lanka, a UNESCO World Heritage site.

Future Healthcare

- An **anti-bacterial coating** that attracts bacteria and kills them is shown as a possible replacement for antibiotics as the standard treatment for bacterial infections.
- **Studying the mantis shrimp**, researchers discover how the damage-resistant nature of its claws could be used to create medical implants that are lighter and don't suffer wear and damage.
- The **Parasitometer**, a device that manipulates light, successfully detects contaminants in treated water within an hour instead of days.
- An **eye gel that releases a drug over time**, jointly developed with the Singapore Eye Research Institute, prevents post-operation scarring in glaucoma patients.
- A **blood test kit** detects proteins associated with cardiovascular diseases and accurately predicts the chances of a person having a heart attack before it happens.
- A pair of **crab-like robotic pincers** that removes stomach tumours without open surgery.

HIGHLIGHTS



NTU's new superfast microchip lets you send someone a two-hour movie in just half a minute. More than 10 multinational companies have shown interest in manufacturing the chip or using it in their mobile products.

New Media

- The S\$23 million **BeingThere Centre** at the Institute for Media Innovation is officially launched to drive the next evolution in virtual communication. Its key partners are ETH Zürich and the University of North Carolina at Chapel Hill.
- The new **Immersive Room** at the Institute for Media Innovation allows interaction with virtual environments in a life-like fashion. Other 3D research projects include prototypes of **advanced 3D communication technologies** such as a virtual receptionist and an animatronic avatar.
- **Social Cloud TV**, invented at NTU, "pulls" TV shows onto mobile devices so users can continue watching them on the go.

New Silk Road

- The **Institute on Asian Consumer Insight** holds its flagship event, the Asia Consumer Summit, a global platform for exploring the latest consumer trends in Asia.
- The **NTU Complexity Programme** is officially inaugurated to spearhead complexity science research in Asia to tackle issues such as governance, urbanisation and ecosystem change.

- The **Chinese Heritage Centre** becomes an autonomous research centre of NTU, focusing on the study of the overseas Chinese.
- NTU strengthens its presence in China by setting up its **South China office** in the Sino-Singapore Guangzhou Knowledge City to help develop expertise for knowledge-based industries.
- The NTU-Rice Institute for Sustainable & Applied Infodynamics unveils plans to distribute 50,000 **I-slate tablets** as low-cost learning aids for schoolchildren in rural Indian communities.

Innovation Asia

- NTU collaborates with the Agency for Science, Technology & Research to develop a **microchip that is 1,000 times faster** than current Bluetooth technology, as well as the **nano-structured solar cell**, which is a cheaper alternative to traditional silicon solar cells.
- A groundbreaking "**invisibility cloak**" constructed from calcite crystals successfully shields small objects from visible light, making them "disappear".
- Research inspired by photonic crystal nanostructures in the wings of butterflies gives rise to **smart windows** that can change colour and block UV light and sunlight.
- A **blink-tracking software** detects fatigue and warns motorists if they are impaired in their ability to drive.
- NTU and the Action Community for Entrepreneurship host the **World Entrepreneurship Forum** in Asia for the first time. It draws more than 600 participants from 56 countries.

“Life here is busy but fun. I like the five research pillars by Bertil Andersson, the NTU President, as there is a lot of innovation coming out of it. It is a great time to be at NTU.”

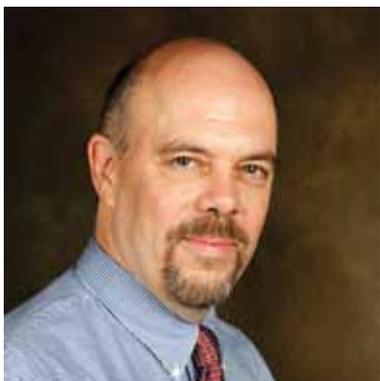
– Prof Bernd Schmitt



Branding and marketing expert Prof Bernd Schmitt from Columbia Business School.



Structural biologist Prof Daniela Rhodes FRS from University of Cambridge.



Public relations and communications specialist Prof Charles Thomas Salmon from Michigan State University.



Prof Bo Gunnar Liedberg, a leader in biological and chemical sensing, from Linköping University.

TOP FACULTY

- NTU's top faculty hires in AY2011 include: **Prof Bernd Schmitt** (Executive Director, Institute on Asian Consumer Insight), **Prof Daniela Rhodes FRS** (School of Biological Sciences), **Prof Bo Gunnar Liedberg** (School of Materials Science & Engineering), **Prof Charles Thomas Salmon** (Wee Kim Wee School of Communication & Information), **Prof Michael Givskov** (School of Biological Sciences), **Prof Nikolay Zheludev** (School of Physical & Mathematical Sciences) and **Prof Michael Grätzel** (Energy Research Institute @ NTU).
- Four out of ten of the brightest young international faculty awarded the globally-competitive **National Research Foundation (NRF) Fellowship** choose NTU as their host institution. A fifth NRF Fellow opts for a joint appointment with NTU.
- NTU's own young faculty recruitment programme, the elite **Nanyang Assistant Professorship**, draws 358 applications (with 91.3% qualified to be considered for the award). Four appointments are made.

HIGHLIGHTS

INTERNATIONAL STANDING

- NTU is ranked **47th** in the QS World University Rankings 2012, **up 27 places** in two years. In the *Times Higher Education* World University Rankings, NTU is placed **86th**, **up 83 spots** from the previous year's ranking.
- One of the world's top elite young universities under the age of 50, NTU is ranked **fourth globally** by QS and **16th** by *Times Higher Education*.
- *The Economist* rates the **Nanyang MBA** as **Singapore's best** for nine straight years. The programme is also in the world's top 35 for the fourth year running, according to the *Financial Times*. NTU's MBA holders earn **the highest salaries** among all Singapore university MBA graduates three years after graduation, with an average pay of US\$102,350 a year.
- The **Actuarial Science** programme is the first in Singapore to be accredited by the Institute and Faculty of Actuaries in the United Kingdom, the world's oldest professional actuarial body.
- NTU's **Accounting** research is once again ranked first in Asia and seventh worldwide by Brigham Young University.
- Two engineering schools – **Electrical & Electronic Engineering** and **Computer Engineering** – are ranked number one in Singapore and fourth in the world (after Massachusetts Institute of Technology, University of California, Berkeley, and Stanford University) by the Higher Education Evaluation & Accreditation Council of Taiwan.

“We have been on an up-and-up momentum in the last year. As the NTU President, I am proud that our faculty members have done research that is recognised globally. We have attracted the best and brightest students to NTU, and employers appreciate the quality of our graduates.”

– NTU President Prof Bertil Andersson





NTU hosts the first meeting of the SATURN network, attended by the Presidents of established research-intensive universities.

STRATEGIC ALLIANCES

- NTU partners **University of British Columbia** to conduct research on active living for the elderly and to develop high-tech elderly-friendly services.
- Sustainability research agreements are signed with **four new partners from Austria** – University of Vienna, Austrian Institute of Technology, Medical University of Vienna and crystalsol GmbH.
- The **Energy Research Institute @ NTU (ERI@N)**, **Royal Philips Electronics** and **JTC Corporation** join forces to test-bed and fine-tune a smart lighting system that achieves energy savings of up to 45%. ERI@N is also collaborating with **Dyesol Limited** to develop low-cost Dye Solar Cell technologies.
- Under the **Joint Industry Programme in Offshore Renewables** – the first such programme in the local offshore renewable energy sector – NTU is working with partners such as Rolls-Royce, DNV and Keppel Offshore & Marine to develop efficient offshore power systems around the world.
- The **Molecular Frontiers Foundation**, inaugurated through the auspices of the Nobel Foundation, establishes its Asian headquarters at NTU.
- Officially launched at NTU in 2009, the **Global Alliance of Technological Universities (GlobalTech)** continues to address societal issues related to science and technology through events such as the **4th GlobalTech workshop** and a summer camp with a water sustainability theme.
- Co-chaired by NTU and University of New South Wales, the new **SATURN network** facilitates the sharing of best practices amongst research-intensive universities. NTU hosts the first meeting attended by several university presidents.

HIGHLIGHTS

ADMINISTRATIVE AND IT ENHANCEMENTS

- **Administrative processes** continue to be **streamlined, automated and integrated** under the second phase of the Administrative Excellence Programme. The projects include the new iNTU intranet portal, NTU mLearn mobile application, Student 360 system and other one-stop services for students, faculty and staff members.
- **“Paperless” work processes** and **optimised print services** are adopted as part of the university’s resource-saving “go green” strategy.
- **Wireless connectivity** is enhanced to support **new mobile services** in NTU’s video-intensive learning environment.
- An **Enterprise Risk Management** system is implemented to help NTU identify and address risks in a timely and holistic manner.

AWARDS AND ACCOLADES

University Entities

The Mayors’ Class

- 2011 Business China Enterprise Award

The X-SAT Microsatellite Team (Satellite Research Centre)

- Defence Technology Prize 2011

Building & Construction Authority Green Mark Awards for innovations in sustainable building design:

- **National Institute of Education** – Platinum
- **Graduate Hall 2** – Gold^{Plus}
- **School of Humanities & Social Sciences** – Gold

Undergraduates

Mechanical & Aerospace Engineering students

- First place, Best Navigational Flight Design and Best Fundamental Design (Motor) categories, 2012 Taiwan Unmanned Aircraft Design Competition

Nanyang Venture III and IV

- Silver, Battery Electric and Diesel Fuel categories, Shell Eco-marathon Asia 2012; Nanyang Venture IV also wins the off-track award for safety

Karen Pooh

- American Psychological Association NIAAA/NIDA Early Career Poster Award

Dipna Lim-Prasad

- Singapore’s first female track athlete at the Olympic Games in 36 years (Women’s 100m Hurdles, London 2012 Olympics)

Victoria Chan

- Singapore’s first medal winner (Silver) at the World University Games (Sailing, Laser Radial)

Graduate Students

Victor Sim

- Singapore-Netherlands Sustainability Award, Holland Water Challenge 2012
- Winner of “Green Talents – The International Forum for High Potentials in Sustainable Development,” Germany

Wan Kong Wah

- Best Paper Award, 18th International Conference on MultiMedia Modelling, Klagenfurt, Austria

Yu Haiyang

- Young Scientist Award, 9th World Biomaterials Congress, Chengdu, China

Yang Fang

- American Psychological Association NIAAA/NIDA Early Career Poster Award

Lu Min

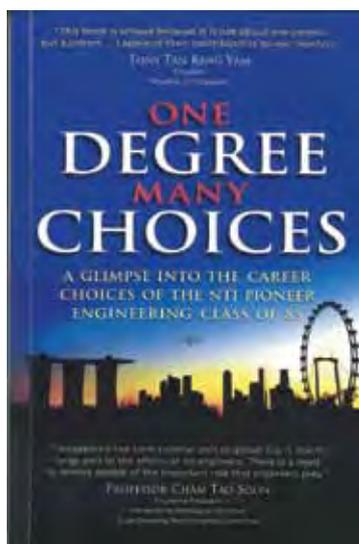
- Finalist, 2012 Reaxys PhD Prize



Nanyang Venture IV wins two awards at the Shell Eco-marathon Asia 2012.

ALUMNI

- NTU now has more than **168,100 alumni** representing 115 nationalities.
- The **global alumni network** expands with three new overseas chapters (in Taiwan, China and Europe) and one new local alumni association, bringing the total number of alumni chapters to 68.
- More than 8,600 alumni take part in about 40 activities that include international alumni gatherings and large reunions. New social media platforms promote **alumni engagement**.
- More than 1,900 alumni volunteer their services as **Class Agents** to help keep fellow alumni connected.
- *One Degree, Many Choices*, a book by the pioneer batch of Engineering graduates (Class of 1985), spurs donations for a new Student Leadership Development Fund at NTU while inspiring the next generation to study engineering.



“One Degree, Many Choices” shares the achievements of the first batch of engineering graduates from Nanyang Technological Institute, NTU’s predecessor institution.

HONORARY DOCTORATE RECIPIENTS

- **Mr S R Nathan**
Former President of Singapore
- **Prof Chad Mirkin**
George B Rathmann Professor of Chemistry, Northwestern University
- **Dr Richard Parker**
Director of Research & Technology, Rolls-Royce

EMINENT VISITORS

Some of the top international dignitaries and world-renowned scientists who visited NTU:

- **His Royal Highness Prince Andrew**
The Duke of York, KG, United Kingdom
- **Prof James Barber FRS**
Ernst Chain Professor of Biochemistry, Imperial College London
- **Prof Sydney Brenner**
Nobel Laureate in Physiology/Medicine (2002)
- **Prof Aaron Ciechanover**
Nobel Laureate in Chemistry (2004)
- **Prof Claude Cohen-Tannoudji**
Nobel Laureate in Physics (1997)
- **Prof Robert Curl**
Nobel Laureate in Chemistry (1996)
- **Prof Alan Heeger**
Nobel Laureate in Chemistry (2000)
- **Prof Kerson Huang**
Professor of Physics Emeritus, MIT
- **Sir Harry Kroto**
Nobel Laureate in Chemistry (1996)
- **Sir Anthony James Leggett**
Nobel Laureate in Physics (2003)
- **Prof Rudolph Marcus**
Nobel Laureate in Chemistry (1992)
- **Prof Ryōji Noyori**
Nobel Laureate in Chemistry (2001)
President, RIKEN
- **Prof Dan Shechtman**
Nobel Laureate in Chemistry (2011)
- **Sir John Walker**
Nobel Laureate in Chemistry (1997)

HIGHLIGHTS



82.08% of the Class of 2012 gave back to NTU, setting a new record in graduation giving.

The participation rate for NTU's Graduating Class Gift has leaped 10 times from 8 per cent in 2005.

GIFTS TO THE UNIVERSITY

NTU makes great strides in its giving programme with the support of students, alumni, partners, faculty and staff members.

- The **iGave Graduation Giving** campaign breaks new ground in both participation rate and gift amount, with 82.08% of the graduating Class of 2012 contributing a total Class Gift of S\$117,703.
- **Alumni Giving** increases with more than 10% of NTU alumni making gifts totalling more than S\$1 million.
- **Jeff Koh Xiankai** (Class of 2005) endows S\$100,000 (\$250,000 after government matching) for the Loyal Reliance-Jeff Koh Xiankai Bursary Fund. Up to two bursaries of S\$5,000 each will be awarded per academic year.
- With more faculty and staff giving back, the 2012 **Faculty and Staff Giving** campaign returns a record participation rate of 61.6%, up from 49% in 2011.
- The **Business and Community Partners** programme, a platform for companies and community organisations to provide financial assistance to needy NTU students, draws 183 donors, up from 135 in 2011.



The Earth Observatory of Singapore (EOS) at NTU is the first organisation in Asia to receive a €3 million endowment from the global AXA Research Fund. The AXA-Nanyang Chair in Natural Hazards is held by EOS Director Prof Kerry Sieh (first from left).

*Gifts of significant impact received in FY2011/2012
(April 2011 to March 2012):*

- S\$5,168,700 (€3 million) from the **AXA Research Fund** to create the endowed AXA-Nanyang Chair in Natural Hazards. This funds research related to major changes and risks in the contemporary world.
- S\$3 million from the **Wee Foundation** to establish the Wee Cho Yaw Master of Science (Finance) Scholarship Fund. Up to four scholarships of S\$60,000 each will be awarded annually to Chinese banking and financial sector regulators pursuing the Master of Science (Finance) programme at the Nanyang Business School.
- S\$1.96 million from **Renee Parrish Trust** for the endowed E I Parrish Trust Bursary Fund, which will be open to undergraduates pursuing a degree at the Lee Kong Chian School of Medicine.
- S\$1.5 million from the **Lien Foundation** to set up an endowment for the Lien Challenge for Sustainable Society. The Challenge provides practice-based learning platforms for Chinese government officials taking NTU's Master of Science in Managerial Economics and Master of Public Administration programmes.
- S\$1.5 million from the **Toh Kian Chui Foundation** to supplement an earlier S\$2 million donation in establishment of the Toh Kian Chui Foundation-NTU Bursary. Up to 62 bursaries, each worth S\$5,000, will be awarded per year.
- S\$637,000 from **Dr Cheung Shing Tai John** to establish three specific endowment funds, namely the Dorothy Cheung Memorial Fund, S K Leung Memorial Fund and John Cheung Endowment Fund.

HIGHLIGHTS

BENEFACTORS

(April 2011 to March 2012)

S\$5 Million and Above

AXA Research Fund
Chinese Heritage Centre

S\$1 Million and Above

Choo Chong Ngen
Financial Sector Development Fund
Lien Foundation
Prima Limited
Renee Parrish Trust
Temasek Foundation CLG Limited
Toh Kian Chui Foundation
Wee Foundation

S\$250,000 and Above

Cheung Shing Tai John
Lee Foundation
Lubritrade Trading Pte Ltd
Ng Foundation Limited
Pacific Carriers Limited
United Way International
World Future Foundation Ltd

S\$100,000 and Above

Ang Ah Nui
BMW Asia Pte Ltd
Dyson Operations Pte Ltd
Faith Community Baptist Church
GET International Pte Ltd
Jiangsu Huailong Materials Company Limited
Kerry Riza
KMP Food Industries Pte Ltd
Koh Xiankai
Le Champ (SEA) Pte Ltd
Ong Tiong Tat, Trustee of the Estate of Koh Choon Joo
Prudential Assurance Company Singapore (Pte) Ltd
Singapore Technologies Engineering Ltd
Small World Institute Foundation
Tak Products & Services Pte Ltd
Teambuild Construction Pte Ltd
The University of North Carolina at Chapel Hill
Wilmar International Limited
Two anonymous donors

S\$50,000 and Above

DV Partners Pte Ltd
Far East Organization
Hb Glass and Aluminium Pte Ltd
JTC Corporation
Keppel Corporation Limited
Keppel Offshore & Marine Ltd
Lian Ho Lee Construction Pte Ltd
Materials Research Society of Singapore
Network for Electronic Transfer (S) Pte Ltd
Oversea-Chinese Banking Corporation Ltd
Premium Automobiles Pte Ltd
Tan Chay Bing Education Fund
The Hongkong and Shanghai Banking Corporation Limited
The Late Mr Wong Kwok Leong
Thye Hong Management & Services Pte Ltd
Two anonymous donors

S\$25,000 and Above

Abwin Pte Ltd
DNIV Int'l Pte Ltd
ExxonMobil Chemical Operations Pte Ltd
First Capital Insurance Limited
Hong Leong Finance Limited
Hyflux Ltd
Infocomm Development Authority of Singapore
J Lauritzen Singapore Pte Ltd
Jeffrey Nadison
Lien Lian Sze
Lien Siaou Sze
Lien Wen Sze
Lysaght Marketing (S) Pte Ltd
Mark Joseph Chavez
Markit Asia Pte Ltd
Professional Engineers Board Singapore
Renesas Electronics Singapore Pte Ltd
Saipem Singapore Pte Ltd
Serial System Ltd
Singapore Telecommunications Limited
Tan Joo Kee Scholarship Fund
The Tan Chin Tuan Foundation
Whitford Pte Ltd
Wu Wei

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CORPORATE GOVERNANCE

Introduction

In April 2006 under the Nanyang Technological University (Corporatisation) Act (Cap. 192A) (“NTU Act”), NTU was corporatised from a statutory board to a not-for-profit company limited by guarantee (Reg. No. 200604393R) formed under the Companies Act (Cap. 50) of Singapore. The governance of the University takes place within the NTU Act and its key constitutive document, its Memorandum and Articles of Association.

NTU is committed to high standards of corporate governance, professionalism, integrity and commitment at all levels, underpinned by strong internal controls and risk management systems.

Governance Evaluation Checklist

In addition to the application of good governance practices as a company and registered charity (Reg. No. 01955), we have, as an institution of public character (“IPC”), adopted best practices in key areas of governance that are closely aligned to the principles and guidelines in the Code of Governance for Charities and Institutions of a Public Character (the “Code”). In line with the disclosure requirement by the Charity Council that all IPCs are required to disclose the extent of their compliance with the Code, NTU’s Governance Evaluation Checklist can be found at the Charity Portal website (www.charities.gov.sg).

Board of Trustees

The NTU Board of Trustees is the highest governing organ within the University’s governance framework. The Board comprises 20 members appointed by the Minister for Education, and is chaired by Mr Koh Boon Hwee. Our Board of Trustees includes eminent business leaders, academics, alumni, entrepreneurs and professionals from the public service and private sectors. Each member is appointed on the strength of his/her calibre, experience, stature and ability to contribute to NTU, and brings with him/her independent judgment on issues of strategy, performance, resource allocation and risk and compliance, as well as valuable relationships and networks which are essential for the growth of NTU.

The Board of Trustees is responsible for ensuring that the University acts in the furtherance of its objectives in education and research, and properly accounts for and safeguards the funds and assets of the University. The Board of Trustees works closely with the management and stakeholders of the University to shape the vision, chart the major directions, and develop programmes and initiatives to produce a strong and enduring impact for the University, and for Singapore and beyond. The Board also approves the annual budget, the use of the University’s operating reserves and the annual audited financial statements of NTU, among other responsibilities.

The NTU Board of Trustees has in place a framework with systems and processes for an effective Board based on the following governance principles and practices:

1. Effective recruitment and induction of Trustees. The Nominating Committee is delegated the responsibility of recommending suitable candidates and has in place an induction programme comprising interactive briefing sessions. In addition, a Board Manual is available.
2. Board Committees are structured to assist the Board to fulfil its governance role, tapping each Trustee’s competencies, skills and experience.
3. The Board works with management to set the vision, mission and strategy of NTU.
4. The Board has an executive succession plan tailored to reflect NTU’s current strategy and organisation.
5. The Board has a system for effective consultation and decision-making with executive sessions and board meetings scheduled in advance, professional expertise advice available, internal guidelines and procedures for conduct of board meetings and obtaining board approvals via circulation, and a Trustees’ portal as a secured web-based resource centre for information relevant to the Board.
6. The Board evaluates and reviews its own performance and has appointed an independent third party to collate and analyse the returns of the Trustees.
7. The Board delineates roles and responsibilities between Board and Management. All members of the Board, including the Chairman, are non-executive with the exception of the President of NTU. This ensures Board independence from management.
8. The Board has a rotation plan for continuous self-renewal, with staggering of Trustees’ terms to ensure continuity. There are policy and procedures for nomination and retirement of Trustees to ensure a formal board nomination and election.

Board Committees

Eight Board Committees and one Advisory Committee have been established to support the Board. These are the Academic Affairs Committee, Alumni and Development Committee, Audit and Risk Committee, Enterprise Committee, Finance Committee, Investment Committee, Nominating Committee, Remuneration Committee and Campus Planning Advisory Committee.

The Audit Committee has been renamed Audit and Risk Committee as it has assumed an additional oversight role over the University’s risk management.

With the Campus Master and Implementation Plans in place, the Board has replaced the Campus Planning Committee with a Campus Planning Advisory Committee to oversee the implementation of the campus master plan.

The roles of the Board and Advisory Committees are briefly described below:

- The Academic Affairs Committee provides oversight and policy guidance for and directly supports the academic concerns of the University as well as the management of faculty and related matters.
- The Alumni and Development Committee provides oversight of issues relating to the advancement of the university as a great university founded on science and technology and its relationship with its students, alumni and external communities.
- The Audit and Risk Committee oversees the University's internal controls, financial reporting and enterprise risk management.
- The Enterprise Committee provides oversight and policy guidance for, and directly supports, the University's strategic directions and policies on innovation, technology transfer and entrepreneurship.
- The Finance Committee provides oversight of the financial management of the University.
- The Investment Committee oversees the management and investment of the funds of the University.
- The Nominating Committee nominates suitable persons to serve on the Board and committees.
- The Remuneration Committee provides oversight and policy guidance in employee compensation matters.
- The Campus Planning Advisory Committee provides oversight and advice on the implementation of the campus master plan.

The Committees operate based on the principle of delegated authority from the Board and are required to observe their respective Terms of Reference as set by the Board. The Terms of Reference of each of these Committees set out the role, powers and rules applicable to these Committees. Where necessary, non-Board members who have expertise in their respective fields are also co-opted to enhance the deliberations and decision-making process of some of the Board Committees.

University Leadership

The President is the University's Chief Executive Officer as well as its academic and administrative head. He is accountable to the Board for the conduct, co-ordination and quality of all of NTU's programmes and for their future development. He has the authority to perform all acts which are necessary to give effect to the policies and statutes of the Board.

The Provost is the Chief Academic and Budget Officer of the University appointed by the President with the approval of the Board of Trustees. The Provost is responsible for the University's academic endeavours and development. This includes graduate and undergraduate education, research, faculty development, student life, external academic liaison and coordination of supporting administrative efforts. He deputises for the President in his absence.

Policies to Manage Conflict of Interest

Members of the Board of Trustees and staff are required in their respective capacities to act at all times in the best interest of the University. Clear policies and procedures are designed to prevent and address potential conflict-of-interest situations while promoting ethical business conduct of faculty and staff.

Trustees have a fiduciary duty not to allow themselves to get into a position where there is a conflict between what they ought to do for NTU and what they might do for themselves. The NTU Board of Trustees subscribes to a code of conduct to uphold a high standard of integrity and commitment in serving the University and in the event of a conflict of interest, members of the Board shall recuse themselves from decisions where such a conflict exists.

In addition, NTU's Articles of Association contain provisions for the management and avoidance of conflicts of interest by members of its Board of Trustees. Such provisions include (a) permitting a Board member to be interested in any transaction with NTU provided that the member has declared the nature of the interest to the Board of Trustees and abstains from participating in the Board's decision in respect of the transaction concerned, (b) permitting a Board member, or a firm associated with the member, to act in any professional capacity for the University and to be remunerated for professional services as if the Board member was not a Trustee, and (c) permitting a Board member to be reimbursed for out-of-pocket expenses, travelling and other expenses properly incurred by the Board member in attending and returning from meetings of the Board of Trustees, any of its committees, or any general meeting of the University or otherwise in connection with the affairs of the University. NTU's Articles expressly stipulate that Board members shall not receive any remuneration for services rendered by them as members of the Board of Trustees.

Under the University Code of Conduct, faculty and staff owe their primary professional allegiance to the University. To protect the University and its mission, all faculty and staff must comply with policies on conflict of interest as laid down from time to time. The current Policy requires faculty and staff to ensure that their private activities and interests do not conflict with their professional obligations to the University. They should take care to avoid conflict between their own personal interests and the interests of the University and should avoid or withdraw from situations where there may be a perception of such conflict. Where there is potential violation of the Policy, the faculty or staff shall fully and frankly disclose the nature and extent of their interest to the University as soon as possible.

REPORT OF THE TRUSTEES

The Board of Trustees present their report to the members together with the audited consolidated financial statements of Nanyang Technological University (the “University Company”) and its subsidiaries (collectively the “Group”) and statement of financial position and statement of changes in funds and reserves of the University Company for the financial year ended 31 March 2012.

Trustees

The Trustees of the University Company in office at the date of this report are:

Mr Koh Boon Hwee	(Chairman)
Mr Alwi Bin Abdul Hafiz	
Mr Chia Ban Seng	
Ms Jennie Chua	
Mr Goh Geok Ling	
Mr Kwek Leng Joo	
Mrs Lee Suet Fern	
Ms Lien Siaou-Sze	
Mr Lim Chuan Poh	
Prof Haresh Shah	
Mr Inderjit Singh	
Mr Ernest Wong	
Mr Lim Chee Onn	
Prof Alexander JB Zehnder	
Mr Wong Yew Meng	
Sir Keith O’Nions	
Prof Bertil Andersson	
Ms Chan Lai Fung	(Appointed on 1 April 2012)
Mr Goh Sin Teck	(Appointed on 1 June 2012)
BG (NS) Tan Meng Dui	(Appointed on 1 July 2012)

Mr Edmund Cheng and Mrs Tan Ching Yee resigned as Trustees of the University Company on 31 March 2012.

Arrangements to Enable Trustees to Acquire Shares and Debentures

Neither at the end of nor at any time during the financial year was the University Company a party to any arrangement whose object was to enable the Trustees of the University Company to acquire benefits by means of the acquisition of shares or debentures of the University Company or any other body corporate.

REPORT OF THE TRUSTEES

Trustees' Interests in Shares and Debentures

The Trustees of the University Company at the end of the financial year have no interest in the share capital (including any share options) and debentures of the University Company's related corporations as recorded in the register of the directors' shareholdings kept by the University Company's related corporations under Section 164 of the Singapore Companies Act.

As the University Company is limited by guarantee and not having a share capital, there are no matters to be disclosed under Section 201(6)(g), Section 201(6A)(h), Section 201(11) and Section 201(12) of the Singapore Companies Act, Chapter 50.

Trustee Contractual Benefits

Since the beginning of the financial year, no Trustee has received or become entitled to receive a benefit by reason of a contract made by the University Company or a related corporation with the Trustee or with a firm of which he is a member or with a company in which he has a substantial financial interest, except for remuneration paid to a trustee in respect of his employment with the University Company as well as consultancy fees paid to another trustee as disclosed in Note 28 to the financial statements.

Auditors

The auditors, Deloitte & Touche LLP, have expressed their willingness to accept re-appointment.

ON BEHALF OF THE BOARD OF TRUSTEES



Mr Koh Boon Hwee
Chairman of the Board of Trustees
Trustee



Prof Bertil Andersson
President of Nanyang Technological University
Trustee

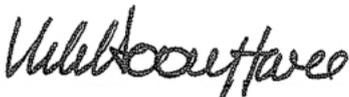
13 August 2012

STATEMENT BY TRUSTEES

In the opinion of the Trustees,

- (a) the consolidated financial statements of the Group and the statements of financial position and statement of changes in funds and reserves of the University Company as set out on pages 41 to 84 are drawn up so as to give a true and fair view of the state of affairs of the Group and of the University Company as at 31 March 2012, and of the results, changes in funds and reserves and cash flows of the Group and of the changes in funds and reserves of the University Company for the financial year from 1 April 2011 to 31 March 2012; and
- (b) at the date of this statement, there are reasonable grounds to believe that the University Company will be able to pay its debts when they fall due.

ON BEHALF OF THE BOARD OF TRUSTEES



Mr Koh Boon Hwee
Chairman of the Board of Trustees
Trustee



Prof Bertil Andersson
President of Nanyang Technological University
Trustee

13 August 2012

INDEPENDENT AUDITORS' REPORT

TO THE BOARD OF TRUSTEES OF NANYANG TECHNOLOGICAL UNIVERSITY

Report on the Financial Statements

We have audited the accompanying financial statements of Nanyang Technological University (the "University Company"), and its subsidiaries ("the Group") which comprise the statements of financial position of the Group and the University Company as at 31 March 2012, and the statement of comprehensive income, statement of changes in funds and reserves and statement of cash flows of the Group and the statement of changes in funds and reserves of the University Company for the financial year then ended, and a summary of significant accounting policies and other explanatory information, as set out on pages 41 to 84.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with the provisions of the Singapore Companies Act, Chapter 50 (the "Act"), the Singapore Charities Act Chapter 37 (the "Charities Act") and Singapore Financial Reporting Standards and for devising and maintaining a system of internal accounting controls sufficient to provide a reasonable assurance that assets are safeguarded against loss from unauthorised use or disposition; and transactions are properly authorised and that they are recorded as necessary to permit the preparation of true and fair profit and loss accounts and balance sheets and to maintain accountability of assets.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Singapore Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

INDEPENDENT AUDITORS' REPORT (CONT'D)

Opinion

In our opinion, the consolidated financial statements of the Group and the statement of financial position and statement of changes in funds and reserves of the University Company are properly drawn up in accordance with the provisions of the Act, the Charities Act and Singapore Financial Reporting Standards so as to give a true and fair view of the state of affairs of the Group and of the University Company as at 31 March 2012 and of the results, changes in funds and reserves and cash flows of the Group and changes in funds and reserves of the University Company for the year ended on that date.

Other Matters

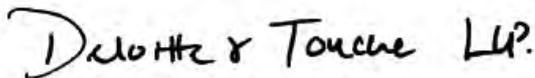
The financial statements of the Group for the financial year ended 31 March 2011 were audited by another auditor who expressed an unmodified opinion on those statements in their report dated 18 July 2011.

Report on Other Legal and Regulatory Requirements

In our opinion, the accounting and other records required by the Act to be kept by the University Company and by those subsidiaries incorporated in Singapore of which we are the auditors have been properly kept in accordance with the provisions of the Act.

During the course of our audit, nothing has come to our attention that causes us to believe that during the year:

- (a) The use of donation moneys was not in accordance with the objectives of the University Company as required under regulation 16 of the Charities (Institutions of a Public Character) Regulations; and
- (b) The University Company has not complied with the requirements of regulation 15 (Fund-raising expenses) of the Charities (Institutions of a Public Character) Regulations.



*Public Accountants and
Certified Public Accountants*

Singapore
13 August 2012

STATEMENTS OF FINANCIAL POSITION

As at 31 March 2012

		Group			University Company		
	Note	2012	2011	1 April	2012	2011	1 April
		\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
ASSETS							
Non-current assets							
Property, plant and equipment	3	1,140,633	1,190,743	1,262,932	1,138,875	1,188,818	1,261,674
Prepaid lease	4	3,433	3,599	3,765	3,433	3,599	3,765
Subsidiaries	5	–	–	–	791	791	791
Available-for-sale financial assets		–	429	1,487	–	–	–
Student loans	6	4,268	4,540	6,274	4,268	4,540	6,274
Finance lease receivables	7	22,358	22,994	23,485	22,358	22,994	23,485
		<u>1,170,692</u>	<u>1,222,305</u>	<u>1,297,943</u>	<u>1,169,725</u>	<u>1,220,742</u>	<u>1,295,989</u>
Current assets							
Derivative financial instruments	8	4,065	5,307	417	4,065	5,307	417
Loan to a subsidiary	9	–	–	–	3,000	3,000	3,000
Student loans	6	3,028	3,941	3,895	3,028	3,941	3,895
Trade and other receivables	10	286,156	253,451	129,209	283,336	249,885	125,067
Financial assets at fair value through profit or loss	11	1,212,845	959,857	678,535	1,212,845	959,857	678,535
Finance lease receivables	7	636	491	479	636	491	479
Cash and cash equivalents	12	1,093,652	986,134	1,075,335	1,074,261	970,682	1,061,800
		<u>2,600,382</u>	<u>2,209,181</u>	<u>1,887,870</u>	<u>2,581,171</u>	<u>2,193,163</u>	<u>1,873,193</u>
Total assets		<u>3,771,074</u>	<u>3,431,486</u>	<u>3,185,813</u>	<u>3,750,896</u>	<u>3,413,905</u>	<u>3,169,182</u>
LIABILITIES							
Current liabilities							
Derivative financial instruments	8	12	–	449	12	–	449
Trade and other payables	13	184,838	179,741	129,943	180,046	174,760	126,031
Grant received in advance							
- Operating grants	14	499	864	541	–	–	–
Grant received in advance							
- Information technology and furniture & equipment ("IT and F&E")	15	35,035	24,899	22,013	35,035	24,899	21,360
Short-term borrowings	16	90,900	129,000	161,900	90,900	129,000	161,900
Deferred tuition and other fees		64,467	58,624	54,303	64,467	58,624	54,303
Research grants received in advance	17	77,441	67,411	60,350	76,881	66,584	60,102
Income tax payable		475	317	977	–	–	–
		<u>453,667</u>	<u>460,856</u>	<u>430,476</u>	<u>447,341</u>	<u>453,867</u>	<u>424,145</u>
Non-current liabilities							
Deferred capital grants	18	821,503	839,347	876,564	820,162	837,819	875,631
Other non-current liabilities		3,324	3,086	2,757	3,324	3,086	2,757
Sinking fund received in advance	15	205,529	170,230	134,931	205,529	170,230	134,931
		<u>1,030,356</u>	<u>1,012,663</u>	<u>1,014,252</u>	<u>1,029,015</u>	<u>1,011,135</u>	<u>1,013,319</u>
Total liabilities		<u>1,484,023</u>	<u>1,473,519</u>	<u>1,444,728</u>	<u>1,476,356</u>	<u>1,465,002</u>	<u>1,437,464</u>
Net assets		<u>2,287,051</u>	<u>1,957,967</u>	<u>1,741,085</u>	<u>2,274,540</u>	<u>1,948,903</u>	<u>1,731,718</u>

STATEMENTS OF FINANCIAL POSITION (CONT'D)

As at 31 March 2012

		Group			University Company		
	Note	2012	2011	1 April	2012	2011	1 April
		\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
FUNDS AND RESERVES							
Capital account	19	200,858	200,858	200,858	200,858	200,858	200,858
Endowment fund	20	1,130,908	893,523	797,088	1,131,283	893,898	797,088
Accumulated surplus							
- General fund		497,394	471,703	411,188	484,040	462,660	401,634
- Other restricted fund		457,891	391,883	331,951	458,359	391,487	332,138
Funds and reserves		2,287,051	1,957,967	1,741,085	2,274,540	1,948,903	1,731,718
Funds managed on behalf of the Government Ministry	21	233,464	225,125	228,440	233,464	225,125	228,440
Represented by:							
Net assets managed on behalf of the Government Ministry	21	233,464	225,125	228,440	233,464	225,125	228,440

The accompanying notes form an integral part of these financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Year ended 31 March 2012

Group	Note	General fund		Endowment fund		Other restricted fund		Total	
		2012	2011	2012	2011	2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
					Restated*				Restated*
Income									
Tuition and other fees		226,910	208,875	–	–	29,303	31,345	256,213	240,220
Rental income		1,444	1,633	–	–	32,195	27,337	33,639	28,970
Research grants	17	206,506	189,740	–	–	–	–	206,506	189,740
Interest income	22	3,503	2,870	16	217	478	507	3,997	3,594
Donations		7	–	–	–	25,438	28,877	25,445	28,877
Other grants		3,592	1,369	–	–	7,076	2,312	10,668	3,681
Sundry income		37,916	28,052	–	–	31,775	35,318	69,691	63,370
Deferred capital grants amortised (non-ministry)	18	7,666	7,611	–	–	5,924	4,487	13,590	12,098
Total income before profit on investments		487,544	440,150	16	217	132,189	130,183	619,749	570,550
Profit on investments	23	4,451	12,822	8,024	58,919	9	141	12,484	71,882
Total income after profit on investments		491,995	452,972	8,040	59,136	132,198	130,324	632,233	642,432
Expenditure									
Expenditure on manpower		631,983	589,540	993	897	73,826	54,166	706,802	644,603
Teaching/research		118,577	117,318	–	–	54,011	51,963	172,588	169,281
Administration		66,107	65,690	–	–	42,088	31,399	108,195	97,089
Maintenance		76,030	68,017	–	–	12,723	10,535	88,753	78,552
Library books and periodicals		5,247	6,007	–	–	–	–	5,247	6,007
Depreciation of property, plant and equipment	3	159,011	163,523	–	–	11,618	8,940	170,629	172,463
Amortisation of prepaid lease	4	166	166	–	–	–	–	166	166
Balance carried forward		1,057,121	1,010,261	993	897	194,266	157,003	1,252,380	1,168,161

* See Note 2.1(e)(ii)

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME (CONT'D)

Year ended 31 March 2012

Group	Note	General fund		Endowment fund		Other restricted fund		Total	
		2012 \$'000	2011 \$'000	2012 \$'000	2011 \$'000	2012 \$'000	2011 \$'000	2012 \$'000	2011 \$'000
					Restated*				Restated*
Balance brought forward		1,057,121	1,010,261	993	897	194,266	157,003	1,252,380	1,168,161
Capital expenditure not capitalised		16,486	19,566	–	–	2,512	1,477	18,998	21,043
Loss on disposal of property, plant and equipment		145	537	–	–	431	29	576	566
Other expenses		–	42	2,190	1,638	70,471	66,856	72,661	68,536
Total expenses		1,073,752	1,030,406	3,183	2,535	267,680	225,365	1,344,615	1,258,306
(Deficit)/Surplus before grants from ministries	24	(581,757)	(577,434)	4,857	56,601	(135,482)	(95,041)	(712,382)	(615,874)
Grants from ministries									
Development grants	15	17,002	26,354	–	–	–	–	17,002	26,354
Operating grants	25	514,975	511,668	–	–	–	–	514,975	511,668
Other grants		2,867	1,739	–	–	102,234	75,371	105,101	77,110
Deferred capital grants amortised	18	146,619	152,385	–	–	3,376	2,395	149,995	154,780
Total grants from ministries		681,463	692,146	–	–	105,610	77,766	787,073	769,912
Surplus/(Deficit) after grants from ministries		99,706	114,712	4,857	56,601	(29,872)	(17,275)	74,691	154,038
Taxation	26	446	291	–	–	–	–	446	291
Surplus/(Deficit) for the year		99,260	114,421	4,857	56,601	(29,872)	(17,275)	74,245	153,747
Other comprehensive income, net of tax		–	–	–	–	–	–	–	–
Total comprehensive income/(loss) for the year		99,260	114,421	4,857	56,601	(29,872)	(17,275)	74,245	153,747

* See Note 2.1(e)(ii)

The accompanying notes form an integral part of these financial statements.

STATEMENTS OF CHANGES IN FUNDS AND RESERVES

Year ended 31 March 2012

	Capital account \$'000	Endowment fund \$'000 Restated*	Accumulated surplus		Total \$'000 Restated*
			General fund \$'000	Other restricted fund \$'000	
Group					
At 1 April 2010	200,858	797,088	411,188	331,951	1,741,085
Total comprehensive income/(loss) for the year (restated)	–	56,601	114,421	(17,275)	153,747
Change in accounting policy:					
Donations	–	36,585	–	–	36,585
Grants from ministries - other grants	–	28,147	–	–	28,147
Transfer from endowment fund	–	(24,898)	13,091	11,807	–
Transfer to research grants received in advance	–	–	(1,394)	–	(1,394)
Transfer to deferred capital grants	–	–	(15)	–	(15)
Utilisation of other restricted fund/general fund	–	–	(160)	(109)	(269)
Transfer to other restricted fund	–	–	(73,387)	73,387	–
Transfer to general fund	–	–	7,968	(7,968)	–
Fair value adjustment	–	–	(9)	90	81
At 31 March 2011	200,858	893,523	471,703	391,883	1,957,967
Total comprehensive income/(loss) for the year	–	4,857	99,260	(29,872)	74,245
Donations	–	54,593	–	–	54,593
Grants from ministries - other grants	–	202,470	–	–	202,470
Transfer from endowment fund	–	(24,535)	11,856	12,679	–
Transfer to research grants received in advance	–	–	(1,962)	–	(1,962)
Transfer to deferred capital grants	–	–	(99)	–	(99)
Utilisation of other restricted fund/general fund	–	–	–	(275)	(275)
Transfer to other restricted fund	–	–	(88,417)	88,417	–
Transfer to general fund	–	–	5,025	(5,025)	–
Fair value adjustment	–	–	28	84	112
At 31 March 2012	200,858	1,130,908	497,394	457,891	2,287,051

* See Note 2.1(e)(ii)

STATEMENTS OF CHANGES IN FUNDS AND RESERVES (CONT'D)

Year ended 31 March 2012

	Capital account \$'000	Endowment fund \$'000 Restated*	Accumulated surplus		Total \$'000 Restated*
			General fund \$'000	Other restricted fund \$'000	
University Company					
At 1 April 2010	200,858	797,088	401,634	332,138	1,731,718
Total comprehensive income/(loss) for the year (restated)	–	56,601	114,932	(17,858)	153,675
Impact of change in accounting policy:					
Donations	–	36,960	–	–	36,960
Grants from ministries - other grants	–	28,147	–	–	28,147
Transfer from endowment fund	–	(24,898)	13,091	11,807	–
Transfer to research grants received in advance	–	–	(1,394)	–	(1,394)
Transfer to deferred capital grants	–	–	(15)	–	(15)
Utilisation of other restricted fund/general fund	–	–	(160)	(109)	(269)
Transfer to other restricted fund	–	–	(73,387)	73,387	–
Transfer to general fund	–	–	7,968	(7,968)	–
Fair value adjustment	–	–	(9)	90	81
At 31 March 2011	200,858	893,898	462,660	391,487	1,948,903
Total comprehensive income/(loss) for the year	–	4,857	94,949	(29,008)	70,798
Change in accounting policy:					
Donations	–	54,593	–	–	54,593
Grants from ministries - other grants	–	202,470	–	–	202,470
Transfer from endowment fund	–	(24,535)	11,856	12,679	–
Transfer to research grants received in advance	–	–	(1,962)	–	(1,962)
Transfer to deferred capital grants	–	–	(99)	–	(99)
Utilisation of other restricted fund/general fund	–	–	–	(275)	(275)
Transfer to other restricted fund	–	–	(88,417)	88,417	–
Transfer to general fund	–	–	5,025	(5,025)	–
Fair value adjustment	–	–	28	84	112
At 31 March 2012	200,858	1,131,283	484,040	458,359	2,274,540

* See Note 2.1(e)(ii)

The accompanying notes form an integral part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

Year ended 31 March 2012

	Note	2012 \$'000	2011 \$'000 Restated
Operating activities			
Deficit before grants from ministries		(712,382)	(615,874)
Adjustments for:			
Research grant income		(206,506)	(189,740)
Depreciation of property, plant and equipment		170,629	172,463
Amortisation of prepaid lease		166	166
Loss on disposal of property, plant and equipment		576	566
Profit on investments		(12,484)	(71,882)
Deferred capital grants amortised (non-ministry)		(13,590)	(12,098)
Interest income		(3,997)	(3,594)
Provision made for undergraduate funding		(10,243)	(21,300)
		<u>(787,831)</u>	<u>(741,293)</u>
Changes in working capital:			
Other payables		13,761	54,085
Trade and other receivables		16,453	(17,746)
Deferred tuition and other fees		5,843	4,321
Loans extended to students		1,297	1,769
Cash generated from operating activities		<u>(750,477)</u>	<u>(698,864)</u>
Donations received for Endowment Fund		54,593	36,585
Income taxes paid		(306)	(951)
Cash flows used in operating activities		<u>(696,190)</u>	<u>(663,230)</u>
Investing activities			
Acquisition of property, plant and equipment		(121,037)	(100,783)
Purchase of other financial assets		(273,277)	(245,222)
Proceeds from sale of other financial assets		51,846	29,048
(Decrease)/Increase in cash held by fund managers	12	(17,390)	2,453
Interest received		4,070	1,984
Cash flows used in investing activities		<u>(355,788)</u>	<u>(312,520)</u>
Financing activities			
Sinking fund received		40,991	29,607
IT and F&E grant received		47,195	36,617
Research grants received		227,743	213,156
Operating grants received, net of payment of goods and service tax expense on tuition fees and tuition grants		623,455	482,763
Development grants and related income received		75,240	56,632
Government ministry grants received		183,247	100,783
Utilisation of other restricted funds		(275)	(109)
Proceeds from borrowings		42,000	35,500
Repayments of borrowings		(80,100)	(68,400)
Cash flows from financing activities		<u>1,159,496</u>	<u>886,549</u>
Net increase/(decrease) in cash and cash equivalents		107,518	(89,201)
Cash and cash equivalents at beginning of the year		986,134	1,075,335
Cash and cash equivalents at end of the year	12	<u>1,093,652</u>	<u>986,134</u>

The accompanying notes form an integral part of these financial statements.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

1 GENERAL

Nanyang Technological University (“NTU” or the “University Company”) established under the Singapore Companies Act, Chapter 50, is domiciled in Singapore. The University Company’s registered office and place of business is located at 50 Nanyang Avenue, Singapore 639798. The financial statements are expressed in Singapore dollars.

The University Company is principally engaged in the advancement and dissemination of knowledge, the promotion of research and scholarships and the conferring and awarding of degrees, diplomas and certificates.

The principal activities of the subsidiaries are set out in Note 5.

As the operations of the University Company is substantially funded by the Ministry of Education (“MOE” or the “Government Ministry”) through government grants, with MOE having the power to appoint and remove members to the Board of Trustees of the University Company, MOE is regarded as the parent entity.

The consolidated financial statements relate to the University Company and its subsidiaries (referred to as the “Group”). The consolidated financial statements of the Group and statement of financial position and statement of changes in funds and reserves of the University Company for the year ended 31 March 2012 were authorised for issue by the Board of Trustees on 13 August 2012.

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

2.1 Basis of preparation

(a) Statement of compliance

The financial statements have been prepared in accordance with the provisions of the Singapore Companies Act, the Charities Act and Singapore Financial Reporting Standards (FRS).

(b) Basis of measurement

The financial statements have been prepared in historical cost basis except otherwise disclosed below.

(c) Functional and presentation currency

The financial statements are presented in Singapore dollars which is the functional currency of the University Company and the presentation currency for the consolidated financial statements. All financial information presented in Singapore dollars has been rounded to the nearest thousand, unless otherwise stated.

(d) Use of estimates and judgements

The preparation of financial statements in conformity with FRS requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenditure. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected.

Management is of the opinion that any instances of application of judgements are not expected to have a significant effect on the amounts recognised in the financial statements.

Key sources of estimation uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities within the next financial year, are discussed below.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.1 Basis of preparation (cont'd)

(d) Use of estimates and judgements (cont'd)

- Note 2.7 - impairment of property, plant and equipment

The Group performs periodic assessment of its property, plant and equipment to determine if any of these assets are impaired. The Group has evaluated the carrying amount of the property, plant and equipment included in the statement of financial position as at 31 March 2012 of \$1,140,633,000 (2011: \$1,190,743,000) for the Group and is of the opinion that no provision for impairment is required.

- Notes 2.8, 8 and 11 - valuation of financial instruments

Derivative financial instruments

The fair value of derivatives (foreign currency forwards) is estimated by discounting the difference between the contractual forward price and the current forward price for the residual period to maturity of the contract.

Financial assets at fair value through profit or loss

The fair values of financial instruments traded in active markets are based on quoted market prices at the end of the reporting period. The Group also holds unquoted equity securities, of which the valuation methodologies are set out in Note 11.

Available-for-sale financial assets

The fair values of available-for-sale financial assets traded in active markets are based on quoted market prices at the end of the reporting period.

- Note 2.10 - measurement of provisions

Provision for attrition

Provision for undergraduate funding relates to the adjustment to the undergraduate output funding from MOE in the event the University achieves fewer undergraduates than MOE's output target. The provision is based on the University's actual and projected number of undergraduates.

(e) Changes in accounting policies

(i) **Adoption of new and revised standards**

In the current financial year, the Group has adopted all the new and revised FRSs and Interpretations of FRS ("INT FRS") that are relevant to its operations and effective for annual periods beginning on or after 1 April 2011. The adoption of these new/revised FRSs does not result in changes to the Group's and University Company's accounting policies and has no material effect on the amounts reported for the current or prior years except as disclosed below:

FRS 24 (Revised) Related Party Disclosures

FRS 24 (Revised) *Related Party Disclosures* has been adopted beginning 1 April 2011. The additional disclosures on application of the revised Standard can be found in Note 28 to the financial statements.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.1 Basis of preparation (cont'd)

(e) Changes in accounting policies (cont'd)

(ii) Accounting for Endowment Fund

The Group has changed its accounting policy on the treatment of donations and grants received under the Endowment Fund from the income approach to the capital approach, where they are taken directly to the statement of funds and reserves instead of to the consolidated statement of comprehensive income. The Group believes that the change in the treatment provides more relevant information on the nature of the Endowment Fund as the donations and grants received have to be kept intact as capital.

The change in accounting policy was applied retrospectively. There are no changes in the opening and ending balances of the statement of funds and reserves. The effect on the consolidated statement of comprehensive income is as follows:

	Endowment Fund 2011	Total 2011
Group	\$'000	\$'000
Surplus for the year ended 31 March 2011 (previously reported)	121,333	218,479
Effects of change in accounting policy:		
- Donations	(36,585)	(36,585)
- Grants from ministries - other grants	(28,147)	(28,147)
Surplus for the year ended 31 March 2011 (restated)	<u>56,601</u>	<u>153,747</u>
	Endowment Fund 2012	Total 2012
Group	\$'000	\$'000
Surplus for the year ended 31 March 2012	261,920	331,308
Effects of change in accounting policy:		
- Donations	(54,593)	(54,593)
- Grants from ministries - other grants	(202,470)	(202,470)
Surplus for the year ended 31 March 2012	<u>4,857</u>	<u>74,245</u>

The accounting policies set out below have been applied consistently to all periods presented in these financial statements, and have been applied consistently by the Group, except as explained in this note, which addresses changes in accounting policies.

2.2 Consolidation

Business combinations

Business combinations are accounted for using the acquisition method as at the acquisition date, which is the date on which control is transferred to the Group. Control is the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities.

The consideration transferred does not include amounts related to the settlement of pre-existing relationships. Such amounts are generally recognised in the profit or loss.

Costs related to the acquisition, other than those associated with the issue of debt or equity securities, that the Group incurs in connection with a business combination are expensed as incurred.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.2 Consolidation (cont'd)

Business combinations (cont'd)

Any contingent consideration payable is recognised at fair value at the acquisition date. If the contingent consideration is classified as funds and reserves, it is not remeasured and settlement is accounted for within funds and reserves. Otherwise, subsequent changes to the fair value of the contingent consideration are recognised in the statement of comprehensive income.

Subsidiaries

Subsidiaries are entities controlled by the Group. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

The accounting policies of subsidiaries have been changed where necessary to align them with the policies adopted by the Group.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements.

Accounting for subsidiaries

Investments in subsidiaries are stated in the University Company's statement of financial position at cost less accumulated impairment losses.

2.3 Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at the exchange rate at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the exchange rate at the reporting date. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined.

Foreign currency differences arising on retranslation are recognised in the profit or loss.

Foreign operations

The assets and liabilities of foreign operations are translated to the functional currency of the University Company and the presentation currency for the consolidated financial statements at exchange rates prevailing at the reporting date. The income and expenses of foreign operations are translated to Singapore dollars at exchange rates ruling at the dates of the transactions.

Foreign currency differences are recognised in the foreign currency translation reserve. When a foreign operation is disposed of, in part or in full, the relevant amount in the foreign exchange translation reserves is transferred to the profit or loss as part of the gain or loss on disposal.

2.4 Funds

Assets and liabilities of all funds are pooled in the statements of financial position.

General and other restricted funds

Income and expenditure are generally accounted for under the "General Fund" in the statement of comprehensive income. The use of these reserves are subject to the approval of the Board of Trustees.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.4 Funds (cont'd)

General and other restricted funds (cont'd)

The income and expenditure relating to funds that are set up for specific purposes are accounted for under "Other Restricted Fund" in the statement of comprehensive income.

The following funds termed as "Other Restricted Fund" are set up and disclosed separately from the University Company's general fund:

- (i) funds created from donations from external bodies for special purposes;
- (ii) funds created from grants received for carrying out activities under special arrangements; and
- (iii) funds maintained separately to account for the self-financing activities carried out by the University Company.

The use of these funds are governed by the terms and conditions set out by the respective funds.

The income and expenditure of General Fund and Other Restricted Fund are included in the consolidated statement of comprehensive income.

Endowment fund

Grants from ministries and statutory boards and donations from external sources are taken directly to the statement of funds and reserves in the year in which such grants and donations are received. Income and expenditure arising from the management of the Endowment Fund are taken to the statement of comprehensive income of the Endowment Fund.

2.5 Grants and sinking fund

Grants and sinking fund from the Government Ministry, other ministries and statutory boards and contributions received/receivable from other organisations for the purchase of depreciable assets or to finance research or capital projects are taken to the grants received in advance account in the first instance. They are taken to the deferred capital grants account upon the utilisation of the grants for purchase of assets, which are capitalised, or to the profit or loss for purchase of assets which are written off in the year of purchase.

Deferred capital grants are recognised in the profit or loss over the periods necessary to match the depreciation, write off and/or impairment loss of the assets purchased with the related grants. Upon the disposal of property, plant and equipment, the balance of the related deferred capital grants is recognised in the profit or loss to match the net book value of the property, plant and equipment written off.

Development grant is recognised when there is reasonable assurance that the University Company will comply with the conditions attaching to them and that the grants will be received.

Information Technology and Furniture and Equipment ("IT and F&E") grants received from the Government Ministry are for the purchase of information technology appliances and furniture and equipment to support teaching and administrative function of the University Company. These grants are taken to the grants received in advance account in the first instance. They are taken to deferred capital grants account upon the utilisation of the grants for purchase of assets, which are capitalised, or to the profit or loss for purchase of assets which are written off in the year of purchase.

Grants from the Government Ministry and other ministries to meet the current year's operating expenses are recognised as income in the same year these operating expenses were incurred.

All grants and contributions are accounted for on the accrual basis.

Special Employment Credit scheme

Cash grants received from the government in relation to the Special Employment Credit scheme are recognised upon receipt. The Special Employment Credit scheme was introduced as a 2011 Budget Initiative to support employers as well as to raise the employability of older low-wage Singaporeans.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.6 Property, plant and equipment

Recognition and measurement

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses except for land alienated to the Group and University Company which are stated at values provided by the Government. Donated assets are stated at valuation at initial recognition.

The freehold land of the Group and the University Company were stated at valuation carried out in December 1987 based on values in a valuation report from the Commissioner of Lands. The revaluation was done on a one-off basis and accordingly, the transitional provision in FRS 16 - *Property, Plant and Equipment* was adopted to continue with its existing policy of stating the freehold land at deemed cost. This revaluation surplus was credited directly to the Capital Account. Upon disposal, any related revaluation surplus is transferred from the Capital Account to accumulated surplus and is not taken into account in arriving at the gain or loss on disposal.

Cost includes expenditures that are directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labour, any other costs directly attributable to bringing the asset to a working condition for its intended use, and the costs of dismantling and removing the items and restoring the site on which they are located. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Property, plant and equipment costing less than \$2,000 each, renovation costing below \$100,000 and library books are generally charged to the profit or loss in the year of purchase.

The gain or loss on disposal of an item of property, plant and equipment recognised in the profit or loss is derived from the proceeds from disposal and the carrying amount of property, plant and equipment.

Subsequent cost

The cost of replacing part of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group and its cost can be measured reliably. The costs of the day-to-day servicing of property, plant and equipment are recognised in the profit or loss as incurred.

Depreciation

Depreciation is based on the cost of an asset less its residual value. Significant components of individual assets are assessed and if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately.

Depreciation is recognised in the profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment.

Except for freehold land and buildings under construction which are not depreciated, depreciation on other property, plant and equipment is recognised in the statement of comprehensive income on a straight-line basis over the estimated useful lives (or lease term, if shorter) of each part of an item of property, plant and equipment.

The estimated useful lives are as follows:

Buildings and infrastructure	5 to 20 years
Renovation	5 years
Machinery, laboratory and workshop equipment	6 years
Furniture and office equipment	3 to 5 years
Transportation equipment	8 years
Others	8 years

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.6 Property, plant and equipment (cont'd)

Depreciation (cont'd)

Depreciation methods, useful lives and residual values are reviewed and adjusted as appropriate, at each reporting date.

Buildings under construction are stated at cost. Expenditure relating to the construction of projects are capitalised when incurred. No depreciation is charged on a building under construction until the building under construction is completed and the related property, plant and equipment are transferred to the respective property, plant and equipment categories and depreciated accordingly.

Assets held under finance leases are depreciated over their expected useful lives on the same basis as owned assets or, if there is no certainty that the lessee will obtain ownership by the end of the lease term, the assets shall be fully depreciated over the shorter of the lease term and their useful lives.

2.7 Impairment – non-financial assets

The carrying amounts of the Group's non-financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amounts are estimated.

An impairment loss is recognised if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. A cash-generating unit is the smallest identifiable asset group that generates cash flows that largely are independent from other assets and groups. Impairment losses are recognised in the statement of comprehensive income unless it reverses a previous revaluation, credited to equity, in which case it is charged to equity. Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the units and then to reduce the carrying amount of the other assets in the unit (group of units) on a pro rata basis.

The recoverable amount of an asset or cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or cash-generating unit. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or cash generating unit.

Impairment losses recognised in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

2.8 Financial instruments

Non-derivative financial assets

The Group initially recognises loans and receivables and deposits on the date that they originated. All other financial assets (including assets designated at fair value through profit or loss) are recognised initially on the trade date, which is the date that the Group becomes a party to the contractual provisions of the instrument.

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial assets are transferred. Any interest in transferred financial assets that is created or retained by the Group is recognised as a separate asset or liability.

Financial assets and liabilities are offset and the net amount presented in the statement of financial position, when, and only when, the Group has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

The Group classifies non-derivative assets into the following categories: financial assets at fair value through profit or loss, available-for-sale financial assets and loans and receivables.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.8 Financial instruments (cont'd)

Financial assets at fair value through profit or loss

An instrument is classified at fair value through profit or loss if it is acquired principally for the purpose of selling in the short term or is designated as such upon initial recognition. Financial instruments are designated at fair value through profit or loss if the Group manages such investments and makes purchase and sale decisions based on their fair value in accordance with the Group's documented risk management and investment strategies. Upon initial recognition, attributable transaction costs are recognised in the profit or loss when incurred. Financial instruments at fair value through profit or loss are measured at fair value, and changes therein are recognised in the profit or loss.

Financial assets designated at fair value through profit or loss comprise fixed income, quoted equity, unquoted equity and other investments.

Loans and receivables

Loans and receivables are financial assets with fixed or determinable payments that are not quoted in an active market. Such assets are recognised initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, loans and receivables are measured at amortised cost using the effective interest method, less any impairment losses.

Loans and receivables comprise trade and other receivables, student loans, grant receivables and cash and cash equivalents.

Cash and cash equivalents comprise cash balances and bank deposits.

Available-for-sale financial assets

The Group's investments in certain equity securities are classified as available-for-sale financial assets if they are not classified in any of the other categories. Subsequent to initial recognition, they are measured at fair value and changes therein, other than for impairment losses, are recognised in other comprehensive income. When an investment is derecognised, the cumulative gain or loss in equity is transferred to the statement of comprehensive income.

Impairment of financial assets

A financial asset is assessed at each reporting date to determine whether there is any objective evidence that it is impaired. A financial asset is considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of that asset.

An impairment loss in respect of a financial asset measured at amortised cost is calculated as the difference between its carrying amount, and the present value of the estimated future cash flows discounted at the original effective interest rate. An impairment loss in respect of an available-for-sale financial asset is calculated by reference to its current fair value.

Individually significant financial assets are tested for impairment on an individual basis. The remaining financial assets are assessed collectively in groups that share similar credit risk characteristics.

All impairment losses are recognised in the profit or loss. Any accumulated loss in respect of an available-for-sale financial asset recognised previously in equity is transferred to the statement of comprehensive income.

Impairment losses once recognised in the profit or loss in respect of available-for-sale equity securities are not reversed through the profit or loss. Any subsequent increase in fair value of such assets is recognised directly in the statement of changes in funds and reserves.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.8 Financial instruments (cont'd)

Non-derivative financial liabilities

The Group recognises financial liabilities when the Group becomes a party to the contractual provisions of the instrument.

The Group derecognises a financial liability when its contractual obligations are discharged or cancelled or expire.

Financial assets and liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

The Group classifies non-derivative financial liabilities into the other financial liabilities category. Such financial liabilities are recognised initially at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, these financial liabilities are measured at amortised cost using the effective interest method.

Non-derivative financial liabilities comprise loans and borrowings, and trade and other payables.

Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are included as a component of cash and cash equivalents for the purpose of the consolidated statement of cash flows.

Derivative financial instruments and hedging instruments

The Group holds derivative financial instruments, through its professional fund managers, to hedge its foreign currency exposure. Further details of derivative financial instruments are disclosed in Note 8 to the financial statements.

Embedded derivatives are separated from the host contract and accounted for separately if the economic characteristics and risks of the host contract and the embedded derivative are not closely related, a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative, and the combined instrument is not measured at fair value through profit or loss.

Derivatives are recognised initially at fair value; attributable transaction costs are recognised in the profit or loss when incurred. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein accounted for in the profit or loss.

2.9 Employee benefits

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which an entity pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an employee benefit expense in the profit or loss in the periods during which services are rendered by employees.

Short-term employee benefits

Short-term employee benefit obligations, including accumulated compensated absences, are measured on an undiscounted basis and are expensed as the related services are provided.

2.10 Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.11 Income tax

Income tax expense comprises current and deferred tax. Income tax expense is recognised in the profit or loss except to the extent that it relates to items recognised directly in equity or in other comprehensive income, in which case it is recognised in equity or in other comprehensive income.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable income and expenditure; temporary differences related to investments in subsidiaries and jointly controlled entities to the extent that it is probable that they will not reverse in the foreseeable future; and taxable temporary differences arising on the initial recognition of goodwill.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, based on the laws that have been enacted or substantively enacted by the reporting date.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised for unused tax losses, tax credits and deductible temporary differences, to the extent that it is probable that future taxable profits will be available against which they can be utilised. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

2.12 Income recognition

Student fees

Income from tuition and other fees are recognised in the period in which the services are rendered.

Management fees

Management fees are recognised upon services rendered.

Donations

Unconditional donations are recognised upon receipt.

Licence fees

Licence fees are recognised in accordance with terms of licensing agreement.

Royalties

Royalties are recognised on sale, by licensor, of products using the technology granted.

Dividends

Dividends are recognised in the financial year in which the right to receive payment is established.

Rental Income

Rental income receivable under operating leases is recognised in the profit or loss on a straight-line basis over the term of the lease.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

2.13 Finance income and finance costs

Finance income comprises interest income generated from fixed deposits, bank deposits and finance leases. Interest income is recognised as it accrues in the profit or loss, using the effective interest method. Interest income on the finance lease is recognised in the profit or loss over the period of the lease so as to earn an approximately constant periodic rate of return on the remaining balance of the finance lease receivables for each reporting period.

Finance costs comprise interest expense on borrowings. Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognised in the profit or loss using the effective interest method.

2.14 Lease Payments

Payments made under operating leases are recognised in the profit or loss on a straight-line basis over the term of the lease. Lease incentives received are recognised as an integral part of the total lease expense, over the term of the lease.

Determining whether an arrangement contains a lease

At inception of an arrangement, the Group determines whether such an arrangement is or contains a lease. A specific asset is the subject of a lease if fulfilment of the arrangement is dependent on the use of that specified asset. An arrangement conveys the right to use the asset if the arrangement conveys to the Group the right to control the use of the underlying asset.

At inception or upon reassessment of the arrangement, the Group separates payments and other consideration required by such an arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Group concludes for a finance lease that it is impracticable to separate the payments reliably, then an asset and a liability are recognised at an amount equal to the fair value of the underlying asset. Subsequently, the liability is reduced as payments are made and an imputed finance charge on the liability is recognised using the Group's incremental borrowing rate.

2.15 Finance lease receivables

Assets held under finance lease are recognised in the statement of financial position and presented as receivables net of unearned interest and after deduction of allowance for possible losses.

2.16 Key management personnel

Key management personnel of the Group are those persons having the authority and responsibility for planning, directing and controlling the activities of the entity. The Board of Trustees and senior management team are considered as key management personnel of the Group.

2.17 New standards and on interpretations not yet adopted

At the date of authorisation of these financial statements, the following FRSs and amendments to FRS that are relevant to the Group and the University Company were issued but not effective:

- Amendments to FRS 1 *Presentation of Financial Statements - Amendments relating to Presentation of Items of Other Comprehensive Income*
- FRS 113 *Fair Value Measurement*

The management anticipates that the adoption of the above FRSs and amendments to FRS in future periods will not have a material impact on the financial statements of the Group and of the University Company in the period of their adoption.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

3 PROPERTY, PLANT AND EQUIPMENT

	Freehold land	Buildings and infrastructure	Buildings under construction	Renovation	Machinery, laboratory and workshop equipment	Furniture and office equipment	Transportation equipment	Others	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Group									
Cost									
At 1 April, 2010	200,858	1,785,726	9,786	75,143	650,031	256,032	6,604	4,092	2,988,272
Additions	–	1,470	5,743	14,944	59,592	18,473	182	379	100,783
Adjustments	–	–	–	–	45	12	–	–	57
Disposals	–	(625)	–	(160)	(13,295)	(13,749)	(82)	(137)	(28,048)
Reclassifications	–	(292)	(4,271)	1,783	710	2,070	–	–	–
At 31 March 2011	200,858	1,786,279	11,258	91,710	697,083	262,838	6,704	4,334	3,061,064
Additions	–	4,278	35,768	10,146	57,178	13,390	152	125	121,037
Adjustments	–	–	–	–	50	8	–	–	58
Disposals	–	(4,461)	–	(56)	(15,260)	(21,943)	(304)	(41)	(42,065)
Reclassifications	–	(1)	(7,622)	5,525	1,834	264	–	–	–
At 31 March 2012	200,858	1,786,095	39,404	107,325	740,885	254,557	6,552	4,418	3,140,094
Accumulated depreciation									
At 1 April, 2010	–	1,036,114	–	29,085	455,240	200,245	2,194	2,462	1,725,340
Depreciation for the year	–	74,444	–	13,903	61,786	21,370	771	189	172,463
Disposals	–	(583)	–	(155)	(13,078)	(13,464)	(82)	(120)	(27,482)
Reclassifications	–	(131)	–	(24)	(114)	269	–	–	–
At 31 March 2011	–	1,109,844	–	42,809	503,834	208,420	2,883	2,531	1,870,321
Depreciation for the year	–	71,146	–	16,069	61,995	20,443	778	198	170,629
Disposals	–	(4,417)	–	(63)	(14,855)	(21,809)	(304)	(41)	(41,489)
Reclassifications	–	(1)	–	–	10	(9)	–	–	–
At 31 March 2012	–	1,176,572	–	58,815	550,984	207,045	3,357	2,688	1,999,461
Carrying amount									
At 1 April 2010	200,858	749,612	9,786	46,058	194,791	55,787	4,410	1,630	1,262,932
At 31 March 2011	200,858	676,435	11,258	48,901	193,249	54,418	3,821	1,803	1,190,743
At 31 March 2012	200,858	609,523	39,404	48,510	189,901	47,512	3,195	1,730	1,140,633

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

3 PROPERTY, PLANT AND EQUIPMENT (CONT'D)

	Freehold land	Buildings and infrastructure	Buildings under construction	Renovation	Machinery, laboratory and workshop equipment	Furniture and office equipment	Transportation equipment	Others	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
University Company									
Cost									
At 1 April, 2010	200,858	1,785,726	9,786	74,204	649,646	255,198	6,604	4,092	2,986,114
Additions	–	1,470	5,743	14,227	59,529	18,076	182	379	99,606
Adjustments	–	–	–	–	45	12	–	–	57
Disposals	–	(625)	–	(6)	(13,269)	(13,582)	(82)	(137)	(27,701)
Reclassifications	–	(292)	(4,271)	1,783	710	2,070	–	–	–
At 31 March 2011	200,858	1,786,279	11,258	90,208	696,661	261,774	6,704	4,334	3,058,076
Additions	–	4,278	35,768	10,112	57,123	12,997	152	125	120,555
Adjustments	–	–	–	–	50	8	–	–	58
Disposals	–	(4,461)	–	–	(15,245)	(21,901)	(304)	(41)	(41,952)
Reclassifications	–	(1)	(7,622)	5,525	1,834	264	–	–	–
At 31 March 2012	200,858	1,786,095	39,404	105,845	740,423	253,142	6,552	4,418	3,136,737
Accumulated depreciation									
At 1 April, 2010	–	1,036,114	–	28,789	455,013	199,868	2,194	2,462	1,724,440
Depreciation for the year	–	74,444	–	13,709	61,724	21,150	771	189	171,987
Disposals	–	(583)	–	(1)	(13,065)	(13,318)	(82)	(120)	(27,169)
Reclassifications	–	(131)	–	(24)	(114)	269	–	–	–
At 31 March 2011	–	1,109,844	–	42,473	503,558	207,969	2,883	2,531	1,869,258
Depreciation for the year	–	71,146	–	15,785	61,956	20,120	778	198	169,983
Disposals	–	(4,417)	–	–	(14,840)	(21,777)	(304)	(41)	(41,379)
Reclassifications	–	(1)	–	–	10	(9)	–	–	–
At 31 March 2012	–	1,176,572	–	58,258	550,684	206,303	3,357	2,688	1,997,862
Carrying amount									
At 1 April 2010	200,858	749,612	9,786	45,415	194,633	55,330	4,410	1,630	1,261,674
At 31 March 2011	200,858	676,435	11,258	47,735	193,103	53,805	3,821	1,803	1,188,818
At 31 March 2012	200,858	609,523	39,404	47,587	189,739	46,839	3,195	1,730	1,138,875

The freehold land of the Group and the University Company were stated at valuation carried out in December 1987 based on values in a valuation report from the Commissioner of Lands. The revaluation was done on a one-off basis and accordingly, the transitional provision in FRS 16 - *Property, Plant and Equipment* was adopted to continue with its existing policy of stating the freehold land at deemed cost.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

4 PREPAID LEASE

	Group and University Company	
	2012	2011
	\$'000	\$'000
Cost		
At 31 March	4,982	4,982
Accumulated amortisation		
At 1 April	1,383	1,217
Amortisation charge for the year	166	166
At 31 March	1,549	1,383
Carrying amount		
At 1 April	3,599	3,765
At 31 March	3,433	3,599

5 SUBSIDIARIES

	University Company	
	2012	2011
	\$'000	\$'000
Equity investments at cost	500	500
Loans to subsidiaries	291	291
	791	791

The loans to subsidiaries are unsecured and interest-free. The settlement of the amounts are neither planned nor likely to occur in the foreseeable future. As the amounts are, in substance, a part of the University Company's net investment in the subsidiaries, they are stated at cost less impairment losses.

Details of subsidiaries are as follows:

<u>Name of subsidiary</u>	Country of incorporation	Ownership interest	
		2012	2011
		%	%
Held by the University Company			
@ NTU Ventures Private Limited	Singapore	100	100
@ Singapore Centre for Chinese Language Limited	Singapore	100	100
@ NIE International Private Limited	Singapore	100	100
# Friends of NTU	United States	100	100
Held by NTU Ventures Private Limited			
@ Confucius Institute, NTU Pte Ltd	Singapore	100	100
@ TechBiz Xccelerator Pte Ltd	Singapore	100	100
@ Institute of Environmental Science and Engineering (IESE) Pte Ltd	Singapore	100	100
@ Systemed Pte Ltd	Singapore	100	100
@ NTUV International Pte Ltd	Singapore	100	100
@ Interactive Digital Media Ltd	Singapore	100	100

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

5 SUBSIDIARIES (CONT'D)

<u>Name of subsidiary</u>	Country of incorporation	Ownership interest	
		2012	2011
		%	%
Held by NTUV International Pte Ltd			
* Nanyang Venture Consulting (Shanghai) Co., Ltd	China	100	100
Held by Nanyang Venture Consulting (Shanghai) Co., Ltd			
^ Nanyang Venture Consulting (Beijing) Co., Ltd	China	100	–

* Audited by overseas practices of Deloitte & Touche Tohmatsu Limited (with effect from the financial year ended 31 March 2012)

@ Audited by Deloitte & Touche LLP, Singapore (with effect from the financial year ended 31 March 2012)

Not required to be audited in the country of incorporation

^ This subsidiary was newly incorporated on 15 March 2012 and there were no material transactions from date of incorporation to the end of the reporting period.

6 STUDENT LOANS

	Group and University Company	
	2012	2011
	\$'000	\$'000
Student loans	7,296	8,481
Represented by:		
Amount repayable within 12 months	3,028	3,941
Amount repayable after 12 months	4,268	4,540
	7,296	8,481

Included in student loans are personal computer loans of \$2,157,000 (2011: \$3,275,000), which are interest-free and are repayable by monthly instalments within a period of 3 years after the borrowers' graduation. The fair value at inception was determined based on expected future principal repayment cash flows, discounted at the average interest rate of 6.50% (2011: 6.50%) per annum. These loans are subsequently measured at amortised cost, using the effective interest method.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

7 FINANCE LEASE RECEIVABLES

	Minimum lease payments		Present value of minimum lease payments	
	2012	2011	2012	2011
Group	\$'000	\$'000	\$'000	\$'000
Amounts receivable under finance leases:				
Within one year	1,190	1,058	636	491
In the second to fifth year inclusive	5,259	5,009	3,218	2,893
After fifth year	23,099	24,539	19,140	20,101
	29,548	30,606	22,994	23,485
Less: unearned finance income	(6,554)	(7,121)		
Present value of minimum lease payments receivable	22,994	23,485		
Allowance for uncollectible lease payments	–	–		
Present value of minimum lease payments receivable	22,994	23,485		

The net investment in finance lease receivables are analysed as follows:

	Group and University Company	
	2012	2011
	\$'000	\$'000
Current finance lease receivables (recoverable within 12 months)	636	491
Non-current finance lease receivables (recoverable after 12 months)	22,358	22,994
	22,994	23,485

This relates to the lease of land and building to NTU Alumni Club over a lease period of 26 years.

8 DERIVATIVE FINANCIAL INSTRUMENTS

The table below sets out the notional principal amounts and the positive and negative fair values of the Group's and University Company's outstanding derivative financial instruments at the end of the reporting period. Positive and negative fair values represent the mark-to-market values of the derivative contracts and are termed as derivative assets and derivative liabilities respectively. Notional principal amounts are the amount of principal underlying the contract at the end of reporting date.

	Contractual maturity		Carrying amount	
	Within 1 year	Total	Derivative asset	Derivative liabilities
Group and University Company	\$'000	\$'000	\$'000	\$'000
<u>2012</u>				
Foreign currency forwards	498,162	498,162	4,065	12
<u>2011</u>				
Foreign currency forwards	388,734	388,734	5,307	–

The fair value of forward exchange contracts is estimated by discounting the difference between the contractual forward price and the forward price at the end of the reporting period for the residual period to maturity of the contract.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

9 LOAN TO A SUBSIDIARY

The loan to a subsidiary is unsecured, interest-free and repayable on demand.

10 TRADE AND OTHER RECEIVABLES

	Note	Group		University Company	
		2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000
Trade receivables		21,551	16,476	19,601	14,167
Interest receivables		2,944	3,017	2,944	3,017
Operating grant receivables		–	72,267	–	72,267
Research grant receivables		45,028	36,602	45,028	36,602
Endowment matching grant receivables		152,471	28,147	152,471	28,147
Grants receivables	15	362	19,272	362	19,272
Other receivables		60,535	75,022	59,794	73,887
Allowance for doubtful receivables		(531)	(628)	(531)	(628)
		60,004	74,394	59,263	73,259
Amounts due from subsidiaries (trade)		–	–	168	168
Allowance for doubtful receivables		–	–	(147)	(147)
		–	–	21	21
Amounts due from subsidiaries (non-trade)		–	–	1,015	1,015
Allowance for doubtful receivables		–	–	(1,015)	(1,015)
		–	–	–	–
Loans and receivables		282,360	250,175	279,690	246,752
Prepayments		3,796	3,276	3,646	3,133
		286,156	253,451	283,336	249,885

The amounts due from subsidiaries are unsecured, interest-free and repayable on demand.

Concentration of credit risk relating to trade receivables is limited due to the Group's varied customers. These customers are mainly statutory boards, ministries and companies who provided funding for research activities. The Group's historical experience in the collection of accounts receivables falls within the recorded allowances. Due to these factors, management believes that no additional credit risk beyond amounts provided for collection losses is inherent in the Group's trade receivables.

Credit risk for other receivables including the various grant receivables is limited as these relate mainly to receivables from the Government Ministry.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

11 FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS

	Group and University Company	
	2012	2011
	\$'000	\$'000
Fixed income investments	173,121	144,607
Quoted equity investments	355,436	306,992
Unquoted equity investments	606,559	443,963
Other investments	77,729	64,295
	<u>1,212,845</u>	<u>959,857</u>

The Group's and University Company's investments are managed by professional fund managers. The fair values of the financial instruments traded in active markets are based on quoted market prices at the end of the reporting period. The investments in unquoted equities represent investments in private equity funds, hedge funds and limited partnerships. The fair values of these unquoted equity investments are based on net asset values provided by fund managers and external valuations.

The Group's and University Company's investments comprise financial instruments (fixed income, quoted equity, unquoted equity and other investments) managed by professional fund managers and cash balances and bank deposits as follows:

	Note	Group and University Company	
		2012	2011
		\$'000	\$'000
Financial assets at fair value through profit or loss		1,212,845	959,857
Cash balances and bank deposits	12	47,840	102,265
		<u>1,260,685</u>	<u>1,062,122</u>

The cash balances and bank deposits are included as a component in the cash and cash equivalents in Note 12 for the purpose of disclosure.

The weighted average interest rates of fixed income securities at the end of the reporting period and the periods in which they mature are as follows:

	Effective interest rate per annum %	Fixed interest rate maturing			Total \$'000
		Within 1 year \$'000	In 1 to 5 years \$'000	After 5 years \$'000	
<u>Group and University Company</u>					
2012	0.2 – 3.9	–	80,967	91,977	172,944
2011	0.3 – 4.4	–	70,688	74,242	144,930

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

12 CASH AND CASH EQUIVALENTS

	Note	Group		University Company	
		2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000
Investments					
Cash at bank and in hand		3,945	2,180	3,945	2,180
Deposit with financial institutions		–	38,800	–	38,800
		3,945	40,980	3,945	40,980
Add: Cash held by fund managers		43,895	61,285	43,895	61,285
	11	47,840	102,265	47,840	102,265
Others					
Cash at bank and in hand		60,158	31,206	42,395	17,379
Deposit with financial institutions		985,654	852,663	984,026	851,038
		1,045,812	883,869	1,026,421	868,417
Cash and cash equivalents		1,093,652	986,134	1,074,261	970,682

The University Company manages 2 bank accounts on behalf of the NTU Students' Union. As at end of the reporting period, the bank balance of \$4,761,000 (2011: \$4,797,000) has not been included in the cash and cash equivalents of the University Company.

13 TRADE AND OTHER PAYABLES

	Note	Group		University Company	
		2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000
Provision for unutilised compensated leave	13(a)	41,317	37,271	41,180	37,148
Other payables and accruals	13(b)	143,521	142,470	138,866	137,612
		184,838	179,741	180,046	174,760

(a) The movement in the provision for unutilised compensated leave is as follows:

	Group		University Company	
	2012	2011	2012	2011
	\$'000	\$'000	\$'000	\$'000
At 1 April	37,271	35,708	37,148	35,639
Provision made during the year	4,046	1,563	4,032	1,509
At 31 March	41,317	37,271	41,180	37,148

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

13 TRADE AND OTHER PAYABLES (CONT'D)

- (b) This amount includes the provision for undergraduate funding of \$33,753,000 (2011: \$25,401,000). Provision for undergraduate funding relates to the adjustment to the undergraduate output funding from MOE in the event the University Company achieves fewer undergraduates than MOE's output target. The provision is based on the University Company's actual and projected number of undergraduates.

The movement in the provision for undergraduate funding is as follows:

	Group		University Company	
	2012	2011	2012	2011
	\$'000	\$'000	\$'000	\$'000
At 1 April	25,401	4,101	25,401	4,101
Provision made during the year	10,243	21,300	10,243	21,300
Provision utilised	(1,891)	–	(1,891)	–
At 31 March	33,753	25,401	33,753	25,401

14 GRANT RECEIVED IN ADVANCE - OPERATING GRANTS

	Group	
	2012	2011
	\$'000	\$'000
At 1 April	864	541
Grants received during the year	4,046	4,003
	4,910	4,544
Less:		
Amounts taken to profit or loss	4,258	3,276
Amounts transferred to deferred capital grants	153	404
At 31 March	499	864

This relates to grants received from the Government Ministry to finance the subsidiary's operations. The balance in this account represents grant received but not utilised at the end of the financial year.

15 GRANTS RECEIVABLE/IT AND F&E GRANTS/SINKING FUND RECEIVED IN ADVANCE

	Note	Group		University Company	
		2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000
Grants receivable within 12 months					
- Development grant		362	8,194	362	8,194
- IT and F&E grant		–	5,386	–	5,386
- Sinking fund		–	5,692	–	5,692
	10	362	19,272	362	19,272
Grants received in advance - IT and F&E	15(a)	(35,035)	(24,899)	(35,035)	(24,899)
Sinking fund received in advance	15(b)	(205,529)	(170,230)	(205,529)	(170,230)
		(240,202)	(175,857)	(240,202)	(175,857)

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

15 GRANTS RECEIVABLE/IT AND F&E GRANTS/SINKING FUND RECEIVED IN ADVANCE (CONT'D)

Movements in grants (received in advance)/receivable:

	Note	Group		University Company	
		2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000
At 1 April		(175,857)	(155,484)	(175,857)	(154,831)
Grants received during the year		(163,426)	(122,856)	(163,426)	(122,856)
		<u>(339,283)</u>	<u>(278,340)</u>	<u>(339,283)</u>	<u>(277,687)</u>
Less:					
Amounts transferred to deferred capital grants	18	82,079	76,129	82,079	75,743
Amounts taken to profit or loss		17,002	26,354	17,002	26,087
At 31 March		<u>(240,202)</u>	<u>(175,857)</u>	<u>(240,202)</u>	<u>(175,857)</u>

These are grants from the Government Ministry for financing development projects.

- (a) This amount relates to grants received in advance for the purchase of IT and F&E items to support teaching and administrative functions.
- (b) This amount relates to a sinking fund received in advance from the Government Ministry for the purpose of maintenance and replacement of property, plant and equipment.

16 SHORT-TERM BORROWINGS

The borrowings are unsecured, bear interest at 0.88% (2011: 0.86%) per annum and are repayable within the next twelve months from the financial year end.

17 RESEARCH GRANTS RECEIVED IN ADVANCE

	Note	Group		University Company	
		2012	2011	2012	2011
		\$'000	\$'000	\$'000	\$'000
At 1 April		67,411	60,350	66,584	60,102
Grants received during the year		227,743	213,156	227,227	212,222
		<u>295,154</u>	<u>273,506</u>	<u>293,811</u>	<u>272,324</u>
Less:					
Amounts transferred to deferred capital grants	18	19,633	20,313	19,633	20,313
Amounts taken to profit or loss		206,506	189,740	205,723	189,385
Amounts refunded to the Government Ministry, other ministries and statutory boards		–	–	–	–
Amounts transferred to grant receivables		(8,426)	(3,958)	(8,426)	(3,958)
At 31 March		<u>77,441</u>	<u>67,411</u>	<u>76,881</u>	<u>66,584</u>

These are grants received from the Government Ministry, other ministries, statutory boards, Agency for Science, Technology & Research (“A*Star”) and other sources for research activities. The balance in this account represents grants received but not utilised at the end of the financial year. These grants are repayable on demand.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

18 DEFERRED CAPITAL GRANTS

	Ministries		Statutory boards		Others		Total	
	2012	2011	2012	2011	2012	2011	2012	2011
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Group								
At 1 April	782,008	823,725	50,218	46,612	7,121	6,227	839,347	876,564
Add:								
Grants received for capital expenditure and development project transferred from:								
- Operating grants (note 25)	26,335	21,739	-	-	-	-	26,335	21,739
- Research grants (note 17)	15,861	13,989	3,198	6,053	574	271	19,633	20,313
- Development grants (note 15)	82,079	76,129	-	-	-	-	82,079	76,129
- Accumulated surplus	25	-	60	15	14	-	99	15
- Other grants	9,236	1,146	4,997	8,805	3,215	885	17,448	10,836
Assets donated by various organisations	-	-	-	-	89	572	89	572
Adjustments/Reclassifications	56	57	2	-	-	-	58	57
	133,592	113,060	8,257	14,873	3,892	1,728	145,741	129,661
Less:								
Grants taken to profit or loss								
Amortisation charge for the year	149,836	154,341	12,321	11,191	1,260	847	163,417	166,379
On disposal of fixed assets	159	439	6	58	3	2	168	499
	149,995	154,780	12,327	11,249	1,263	849	163,585	166,878
Adjustments/Reclassifications	(353)	(3)	372	18	(19)	(15)	-	-
At 31 March	765,958	782,008	45,776	50,218	9,769	7,121	821,503	839,347

Deferred capital grants amortised (non-ministry) refers to amortisation of grants received from statutory boards and other organisations.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

18 DEFERRED CAPITAL GRANTS (CONT'D)

	Ministries		Statutory boards		Others		Total	
	2012	2011	2012	2011	2012	2011	2012	2011
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
University Company								
At 1 April	780,480	822,792	50,218	46,612	7,121	6,227	837,819	875,631
Add:								
Grants received for capital expenditure and development project transferred from:								
- Operating grants	26,182	21,335	-	-	-	-	26,182	21,335
- Research grants (note 17)	15,861	13,989	3,198	6,053	574	271	19,633	20,313
- Development grants (note 15)	82,079	75,743	-	-	-	-	82,079	75,743
- Accumulated surplus	25	-	60	15	14	-	99	15
- Other grants	9,236	1,016	4,817	8,805	3,215	885	17,268	10,706
Assets donated by various organisations	-	-	-	-	89	572	89	572
Adjustments/Reclassifications	56	57	2	-	-	-	58	57
	133,439	112,140	8,077	14,873	3,892	1,728	145,408	128,741
Less:								
Grants taken to profit or loss								
Amortisation charge for the year	149,344	154,016	12,294	11,191	1,260	847	162,898	166,054
On disposal of fixed assets	158	439	6	58	3	2	167	499
	149,502	154,455	12,300	11,249	1,263	849	163,065	166,553
Adjustments/Reclassifications	(353)	(3)	372	18	(19)	(15)	-	-
At 31 March	764,770	780,480	45,623	50,218	9,769	7,121	820,162	837,819

19 CAPITAL ACCOUNT

The capital account represents the revaluation of the freehold land alienated to Nanyang Technological University (details are set out in note 3).

20 ENDOWMENT FUND

The fund comprises donations, grants, gifts, testamentary disposition and proceeds from gifts of movable or immovable properties. The objectives of this fund include the provision of facilities for teaching, training and research, the advancement and dissemination of knowledge and the promotion of research.

The Government has undertaken to match all donations to the Nanyang Technological University Endowment Fund. Such government grants are accounted for on an accrual basis.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

21 FUNDS MANAGED ON BEHALF OF THE GOVERNMENT MINISTRY

Pursuant to the Tuition Fee Loan (TFL), Study Loan (SL) and Overseas Student Program Loan - 50% funded by MOE (OSP) schemes, the University Company acts as agent for these loans schemes and the Government Ministry as the financier providing the advances.

	Group and University Company	
	2012	2011
	\$'000	\$'000
Advances from the Government Ministry:		
At 1 April	225,125	228,440
Advances received	9,569	25,488
Interest income	4,248	4,231
Advances repaid	–	(28,700)
Bad debts (incurred)/recovered	(1,230)	(103)
Interest expense	(4,248)	(4,231)
	<u>233,464</u>	<u>225,125</u>
Represented by:		
Cash and bank balances held on/(paid on) behalf TFL, SL and OSP	12,525	4,181
Net assets	<u>220,939</u>	<u>220,944</u>
	<u>233,464</u>	<u>225,125</u>

Cash and bank balances of \$12,525,000 (2011: \$4,181,000) are held on behalf of the Government Ministry for the purpose of extending study loans to students.

Students on TFL, SL and OSP are to commence repayment upon graduation. Students are given an option to repay by monthly instalments of minimum amount of \$100 over a period of up to 20 years (for TFL and SL) and 5 years (for OSP) after the borrowers' graduation. Interest is charged at the average prime rates of three local banks prevailing on the first day of each quarter, or such other rates as may be determined from time to time. Interest charged in 2012 is 4.75% (2011: 4.75%) per annum.

The interest on the TFL, SL and OSP is remitted in full to the Government Ministry on half yearly basis.

22 INTEREST INCOME

	Group	
	2012	2011
	\$'000	\$'000
Interest received/receivable:		
- fixed deposits (placed with financial institutions)	3,392	2,989
- bank balances	38	26
- finance leases	567	579
	<u>3,997</u>	<u>3,594</u>

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

23 PROFIT ON INVESTMENTS

	Group	
	2012	2011
	\$'000	\$'000
Interest income	3,702	3,560
Dividend income	3,930	2,428
Fair value gain on financial assets through profit or loss	4,555	32,031
Fair value gain on derivative financial instruments	297	33,863
	<u>12,484</u>	<u>71,882</u>

24 DEFICIT BEFORE GRANTS FROM MINISTRIES

The following items have been included in arriving at deficit before grants from ministries:

	Group	
	2012	2011
	\$'000	\$'000
Allowance for doubtful receivables	(97)	(100)
Exchange (gain)/loss	(255)	522
Operating lease expense	2,014	1,498
Contribution to defined contribution plans included in expenditure on manpower	41,148	36,368
Government grants - Special Employment Credit/Job credit scheme, offset against manpower costs	(13)	(1,005)
	<u>(13)</u>	<u>(1,005)</u>

25 OPERATING GRANTS FROM GOVERNMENT MINISTRY

		Group	
	Note	2012	2011
		\$'000	\$'000
Operating grants received and receivable during the year		602,323	601,267
Payment for goods and services tax on tuition fees and tuition grants		(51,135)	(46,237)
Amounts transferred (to)/from			
- deferred capital grants	18	(26,335)	(21,739)
- grant received in advance	14	365	(323)
Provision for attrition		(10,243)	(21,300)
Operating grants taken to profit or loss		<u>514,975</u>	<u>511,668</u>

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

26 TAXATION

The University Company is registered as a charitable institution by virtue of Section 13M(2)(b) of the Income Tax Act, Chapter 134.

The subsidiaries of the Group have unutilised capital allowances and unabsorbed tax losses of approximately \$181,539 (2011: \$27,000) and \$1,398,602 (2011: \$1,501,830) respectively which are available for offset against future taxable income. Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profit will be available against which the subsidiaries can utilise the benefit.

The unabsorbed tax losses and unutilised capital allowances of the subsidiaries are subject to agreement by the tax authorities and compliance with the tax regulations in the respective countries in which certain subsidiaries operate. These temporary differences do not expire under current tax legislation.

	Group	
	2012	2011
	\$'000	\$'000
Current tax expense		
Current year	446	291
Reconciliation of effective tax		
Surplus before income tax	74,691	154,038
Income tax using Singapore tax rates of 17%	12,697	26,186
Income not subject to tax	(12,251)	(25,895)
	446	291

27 COMMITMENTS

Operating lease commitments

The future lease payments contracted at the reporting date but not recognised as liabilities are analysed as follows:

	2012	2011
	\$'000	\$'000
Not later than one year	2,500	1,906
Later than one year but not later than five years	2,990	3,371

The Group and the University Company leases personal computer, printers and servers under operating leases. The leases typically run for a period of 3 to 5 years. On 1 February 2012, the Group and University Company also leased both land and a building to be used by the Lee Kong Chian School of Medicine as administrative office and interim teaching facilities for 2 years.

Capital commitments

	2012	2011
	\$'000	\$'000
Contracted but not provided for	65,170	55,338
Authorised but not contracted for	718,837	735,285

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

27 COMMITMENTS (CONT'D)

Capital commitments (cont'd)

The capital commitments are funded from grants from the Government Ministry and other ministries, subject to satisfying certain terms and conditions.

	2012	2011
	\$'000	\$'000
Purchase of unquoted equity investments		
- contracted but not provided for	56,899	25,937

Joint Program in Hospitality Management with Cornell University

Under the agreement with Cornell University, NTU will establish a joint program in hospitality management with Cornell University through the Cornell-Nanyang Institute of Hospitality Management (CNI). The CNI programs include degree and non-degree programs, short courses, research and other related academic activities. NTU has provided a Standby Letter of Credit of USD1.1 million (\$1.4 million) renewable up to 30 June 2012 to cover tuition fees and reimbursable expenses due to Cornell University.

Agreements entered into with Massachusetts Institute of Technology (MIT) and the National University of Singapore (NUS)

NTU has entered into a Singapore-MIT Alliance (SMA) agreement with MIT and NUS to establish collaborative efforts in research and education in engineering, science and technology, including interface with business and industry. The agreement was effective from 17 September 2004 and as at 31 March 2012, NTU's outstanding commitment under SMA-2 is estimated at USD2.7 million (\$3.4 million) (2011: USD6.9 million (\$8.8 million)) till the expiry of the agreement.

Collaboration with Stanford University

NTU and Stanford University have entered into a collaborative Singapore Stanford Partnership (SSP) program for the development of postgraduate education and research in environmental science and engineering. The SSP program will offer Master of Science and Doctor of Philosophy degrees in environmental science and engineering whereby students will be integrated into the Stanford experience. As at 31 March 2012, NTU's outstanding commitments under the program are estimated at USD nil million (2011: USD0.1 million (\$0.1 million)).

Collaboration with Imperial College of Science, Technology and Medicine

On 27 August 2010, NTU and Imperial College of Science, Technology and Medicine entered into an agreement in relation to a collaboration for the establishment and operation of a medical school in Singapore. As at 31 March 2012, NTU's outstanding commitment under the collaboration is estimated at £43.5 million (\$89.0 million) (2011: £51.6 million (\$106.1 million)) till the expiry of the agreement.

28 SIGNIFICANT RELATED PARTY INFORMATION

Related party transactions

The Government of Singapore has control over the Group as the operations of the University Company is substantially funded through Government grants, with MOE having the power to appoint and remove members to the Board of Trustees of the University Company. Consequently, the Group has invoked the exemption from disclosure requirements of FRS 24 in relation to related party transactions and outstanding balances (including commitments) with the Government of Singapore.

The Group has significant transactions with the Government of Singapore in the form of purchase of goods and services and sale of services. Such purchases and sales are made to various Government agencies in Singapore and collectively approximate \$9 million (2011: \$10 million) and \$18 million (2011: \$18 million).

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

28 SIGNIFICANT RELATED PARTY INFORMATION (CONT'D)

Related party transactions (cont'd)

Other than disclosed elsewhere in the financial statements, the Group had the following significant transactions with related parties during the year on terms agreed between the parties as follows:

	2012	2011
	\$'000	\$'000
(a) Key management personnel compensation		
Short-term employee benefits (includes the remuneration of an executive trustee)	3,663	4,098
(b) Services rendered		
Consultancy fees paid to a Trustee	152	16

29 FINANCIAL INSTRUMENTS

Categories of financial instruments

The following table sets out the financial instruments as at the end of the reporting period:

	Group		University Company	
	2012	2011	2012	2011
	\$'000	\$'000	\$'000	\$'000
Financial Assets				
Loans and receivables (including cash and cash equivalents)	1,406,302	1,268,275	1,387,532	1,252,691
Fair value through profit or loss	1,212,845	959,857	1,212,845	959,857
Available-for-sale financial assets	–	429	–	–
Derivative instruments	4,065	5,307	4,065	5,307
	<u>2,623,212</u>	<u>2,233,868</u>	<u>2,604,442</u>	<u>2,217,855</u>
Financial Liabilities				
Amortised cost	200,668	246,069	196,013	241,211
Derivative instruments	12	–	12	–
	<u>200,680</u>	<u>246,069</u>	<u>196,025</u>	<u>241,211</u>

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Credit risk

The carrying amount of financial assets, grossed up for any provision, represents the maximum credit exposure. At the end of the reporting period, there is no significant concentration of credit risk other than grant receivables.

The aging of loans and receivables at the reporting date is:

	2012		2011	
	Gross \$'000	Allowance for doubtful receivables \$'000	Gross \$'000	Allowance for doubtful receivables \$'000
Group				
Not past due	271,096	–	245,732	–
Past due 1 to 30 days	4,784	–	2,144	–
Past due 31 to 150 days	4,792	–	1,090	–
More than 151 days	2,219	531	1,837	628
	<u>282,891</u>	<u>531</u>	<u>250,803</u>	<u>628</u>
University Company				
Not past due	268,780	–	243,024	–
Past due 1 to 30 days	4,674	–	1,724	–
Past due 31 to 150 days	4,527	–	996	–
More than 151 days	3,402	1,693	2,798	1,790
	<u>281,383</u>	<u>1,693</u>	<u>248,542</u>	<u>1,790</u>

The movement in the allowance for doubtful receivables in respect of loans and receivables during the year is as follows:

	Group		University Company	
	2012 \$'000	2011 \$'000	2012 \$'000	2011 \$'000
At 1 April	628	728	1,790	1,836
Allowance reversed	(97)	(100)	(97)	(46)
At 31 March	<u>531</u>	<u>628</u>	<u>1,693</u>	<u>1,790</u>

Liquidity risk

The contracted undiscounted cash outflows on financial liabilities approximate their carrying amounts and are generally settled within one year.

Interest risk

Surplus funds from the Group's operations are invested in bank deposits and with fund managers. The Group has no material exposure to interest rate risk from fixed deposits and borrowings as the interest rates are on fixed rate basis. The Group's investments in fixed income securities that are managed by fund managers (classified as financial assets at fair value through profit or loss) are exposed to interest rate risk.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Interest risk (cont'd)

Sensitivity analysis for interest risk

If movements in interest rates result in a 3% (2011: 3%) appreciation/depreciation in the value of the fixed income investments, all other variables being held constant, the Group's surplus would have been higher/lower by \$5,194,000 (2011: \$4,338,000).

Price risk

The Group is exposed to equity securities price risk from investments classified as financial assets at fair value through profit or loss and available-for-sale financial assets. The market values of these investments are affected by, amongst others, changes in market prices as a result of changes in the global economic conditions, macro and micro economic factors affecting the country where the investments are quoted, and factors specific to the investee corporations.

To manage the price risk arising from investment in equity securities, the Group diversifies its portfolio across different markets and industries whenever it is appropriate.

Sensitivity analysis for price risk

If movements in financial markets result in a 5% (2011: 5%) appreciation/depreciation in the value of the quoted equity and other investments, all other variables being held constant, the Group's surplus would have been higher/lower by \$21,658,000 (2011: \$18,564,000).

If movements in financial markets result in a 5% (2011: 5%) appreciation/depreciation in the value of the unquoted equity investments, all other variables being held constant, the Group's surplus would have been higher/lower by \$30,328,000 (2011: \$22,198,000).

Foreign currency risk

The Group's investments which are managed by fund managers may be in instruments denominated in foreign currencies. Currency exposure arising from such investments is managed by fund managers. Additional information is set out in Note 8.

The main foreign currency exposure of investments (net of foreign currency forwards) based on information provided to management is as follows:

	US Dollar	Euro	Japanese Yen	Pound Sterling	Others
	\$'000	\$'000	\$'000	\$'000	\$'000
2012	257,737	31,737	23,168	17,683	160,211
2011	127,149	39,792	27,567	19,621	180,038

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Foreign currency risk (cont'd)

Sensitivity analysis for currency risk

If the relevant foreign currency changes against the Singapore dollar by 5% (2011: 5%), all other variables being held constant, the effects will be as follows:

Increase/(Decrease)	Profit or Loss	
	2012	2011
	\$'000	\$'000
<i>US Dollar against Singapore Dollar</i>		
Strengthened	12,887	6,357
Weakened	(12,887)	(6,357)
<i>Euro against Singapore Dollar</i>		
Strengthened	1,587	1,990
Weakened	(1,587)	(1,990)
<i>Japanese Yen against Singapore Dollar</i>		
Strengthened	1,158	1,378
Weakened	(1,158)	(1,378)
<i>Pound Sterling against Singapore Dollar</i>		
Strengthened	884	981
Weakened	(884)	(981)

Estimating the fair values

Financial assets at fair value through profit or loss

The fair values of financial instruments traded in active markets are based on quoted market prices at the end of the reporting period. The fair values of unquoted equity investments are based on net asset values provided by fund managers and external valuations.

Available-for-sale financial assets

The fair values of available-for-sale financial assets are based on quoted market prices at the end of the reporting period.

Non-derivative financial liabilities

Fair value, which is determined for disclosure purposes, is calculated based on the present value of future principal and interest cash flows, discounted at the market rate of interest at reporting date.

Other financial assets and liabilities

The carrying amounts of financial assets and liabilities with a maturity of less than one year (including loan to a subsidiary, trade and other receivables, cash and cash equivalents, trade and other payables, and short-term borrowings) are assumed to approximate their fair values. The fair values of other classes of financial assets and liabilities are disclosed in the respective notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Interest rates used in determining fair values

The Group uses the government yield curve as of 31 March 2012 plus an adequate constant credit spread to discount financial instruments. The interest rates used are as follows:

	2012	2011
	% p.a.	% p.a.
Finance lease receivables	2.44	2.44
Receivables	6.50	6.50

Fair value hierarchy

The table below analyses financial instruments carried at fair value, by valuation method. The different levels have been defined as follows:

- *Level 1*: quoted prices (unadjusted) in active markets for identical assets or liabilities
- *Level 2*: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices)
- *Level 3*: inputs for the asset or liability that are not based on observable market data (unobservable inputs)

	Level 1	Level 2	Level 3	Total
	\$'000	\$'000	\$'000	\$'000
Group				
31 March 2012				
Available-for-sale financial assets				
- Quoted equities	-	-	-	-
Financial assets at fair value through profit or loss	606,285	311,226	295,334	1,212,845
Derivative financial assets	-	4,065	-	4,065
	606,285	315,291	295,334	1,216,910
Derivative financial liabilities	-	12	-	12

31 March 2011

Available-for-sale financial assets				
- Quoted equities	429	-	-	429
Financial assets at fair value through profit or loss	515,894	161,503	282,460	959,857
Derivative financial assets	-	5,307	-	5,307
	516,323	166,810	282,460	965,593
Derivative financial liabilities	-	-	-	-

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Fair value hierarchy (cont'd)

There were no transfers between Level 1 and Level 2 of the fair value hierarchy in 2011 and 2012.

	Level 1 \$'000	Level 2 \$'000	Level 3 \$'000	Total \$'000
University Company				
31 March 2012				
Available-for-sale financial assets				
- Quoted equities	-	-	-	-
Financial assets at fair value through profit or loss	606,285	311,226	295,334	1,212,845
Derivative financial assets	-	4,065	-	4,065
	<u>606,285</u>	<u>315,291</u>	<u>295,334</u>	<u>1,216,910</u>
Derivative financial liabilities	-	12	-	12
31 March 2011				
Available-for-sale financial assets				
- Quoted equities	-	-	-	-
Financial assets at fair value through profit or loss	515,894	161,503	282,460	959,857
Derivative financial assets	-	5,307	-	5,307
	<u>515,894</u>	<u>166,810</u>	<u>282,460</u>	<u>965,164</u>
Derivative financial liabilities	-	-	-	-

Assets measured at fair value based on Level 3:

	Financial assets designated at fair value through profit or loss	Available- for-sale financial assets	Total
	Unquoted equity investments \$'000	Unquoted equity investments \$'000	\$'000
Group			
At 1 April 2011	282,460	-	282,460
Total gains or losses in profit or loss	11,403	-	11,403
Subscriptions/Contributions	10,839	-	10,839
Redemptions/Distributions	(9,368)	-	(9,368)
At 31 March 2012	<u>295,334</u>	<u>-</u>	<u>295,334</u>
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period	<u>11,403</u>	<u>-</u>	<u>11,403</u>
Gains or losses included in profit or loss for the period (above) are presented as follows:			
Total gains or losses included in profit or loss for the period			<u>11,403</u>
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period			<u>11,403</u>

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Fair value hierarchy (cont'd)

Assets measured at fair value based on Level 3: (cont'd)

	Financial assets		Total
	designated at fair value through profit or loss	Available-for-sale financial assets	
	Unquoted equity investments	Unquoted equity investments	
	\$'000	\$'000	\$'000
Group			
At 1 April 2010	259,690	32	259,722
Total gains or losses in profit or loss	14,860	(32)	14,828
Subscriptions/Contributions	18,696	–	18,696
Redemptions/Distributions	(10,786)	–	(10,786)
At 31 March 2011	<u>282,460</u>	<u>–</u>	<u>282,460</u>
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period	<u>14,860</u>	<u>–</u>	<u>14,860</u>
Gains or losses included in profit or loss for the period (above) are presented as follows:			
Total gains or losses included in profit or loss for the period			<u>14,828</u>
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period			<u>14,860</u>

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Fair value hierarchy (cont'd)

Assets measured at fair value based on Level 3: (cont'd)

	Financial assets designated at fair value through profit or loss	Available- for-sale financial assets	
	Unquoted equity investments	Unquoted equity investments	Total
	\$'000	\$'000	\$'000
University Company			
At 1 April 2011	282,460	–	282,460
Total gains or losses in profit or loss	11,403	–	11,403
Subscriptions/Contributions	10,839	–	10,839
Redemptions/Distributions	(9,368)	–	(9,368)
At 31 March 2012	<u>295,334</u>	<u>–</u>	<u>295,334</u>
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period	<u>11,403</u>	<u>–</u>	<u>11,403</u>
Gains or losses included in profit or loss for the period (above) are presented as follows:			
Total gains or losses included in profit or loss for the period			<u>11,403</u>
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period			<u>11,403</u>

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

29 FINANCIAL INSTRUMENTS (CONT'D)

Fair value hierarchy (cont'd)

Assets measured at fair value based on Level 3: (cont'd)

	Financial assets		Total
	designated at fair value through profit or loss	Available-for-sale financial assets	
	Unquoted equity investments	Unquoted equity investments	
	\$'000	\$'000	\$'000
University Company			
At 1 April 2010	259,690	–	259,690
Total gains or losses in profit or loss	14,860	–	14,860
Subscriptions/Contributions	18,696	–	18,696
Redemptions/Distributions	(10,786)	–	(10,786)
At 31 March 2011	282,460	–	282,460
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period	14,860	–	14,860
Gains or losses included in profit or loss for the period (above) are presented as follows:			
Total gains or losses included in profit or loss for the period			14,860
Total gains or losses for the period included in profit or loss for assets held at the end of the reporting period			14,860

30 FINANCIAL INSTRUMENTS, FINANCIAL RISKS AND CAPITAL RISKS MANAGEMENT

Overview

The Group has exposure to the following risks from its use of financial instruments:

- credit risk
- liquidity risk
- market risk

This note presents information about the Group's exposure to each of the above risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital. Further quantitative disclosures are included throughout these financial statements.

Capital risk management policies and objectives

Risk management is integral to the activities of the Group. The Group has controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. Management continually monitors its risk management processes to ensure that an appropriate balance between risk and control is achieved. Risk management processes are reviewed regularly to reflect changes in the Group's activities. The Group's overall strategy remains unchanged from 2011.

NOTES TO FINANCIAL STATEMENTS

For the financial year ended 31 March 2012

30 FINANCIAL INSTRUMENTS, FINANCIAL RISKS AND CAPITAL RISKS MANAGEMENT (CONT'D)

Credit risk

Trade and other receivables

Credit risk is the potential loss resulting from the failure of a customer or a counterparty to settle its financial and contractual obligations to the Group, as and when they fall due.

The Group manages its credit risk with regular monitoring and following up actions for the debts outstanding from debtors. Additional information is set out in Notes 10 and 29.

Investments

Cash and deposits are placed with reputable financial institutions. Investment portfolios are managed by professional fund managers.

The maximum exposure to credit risk in the event that the counterparties fail to perform their obligations in relation to each class of recognised financial asset is the carrying amount of those assets as stated in the statements of financial position.

The credit risk is diversified over a range of institutions.

Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group's reputation.

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate to finance the Group's operations and to mitigate the effects of fluctuations in cash flow. Typically the Group ensures that it has sufficient cash on demand to meet expected operational expenses including the servicing of financial obligations; this excludes the potential impact of extreme circumstances that cannot be reasonably predicted.

In addition, the Group maintains the following lines of credit:

- \$10 million bankers' guarantee facility that is unsecured.
- \$220 million that can be drawn down to meet short-term financing needs.

Market risk – Price risk

The Group is exposed to price risk arising from investments invested through funds managed by professional managers in the various asset classes. The Group manages its price risk through portfolio diversification across asset classes to manage exposure risk.

31 CHARITY ACT AND REGULATIONS

As required for disclosure under Section 17(1) of the Charities (Institutions of a Public Character) Regulations, the University Company has received total tax deductible donations of \$67,694,000 (2011: \$50,065,000) in the current financial year.



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