

The future of Research Universities in Asia:

Reading the water well AND creating exciting new streams

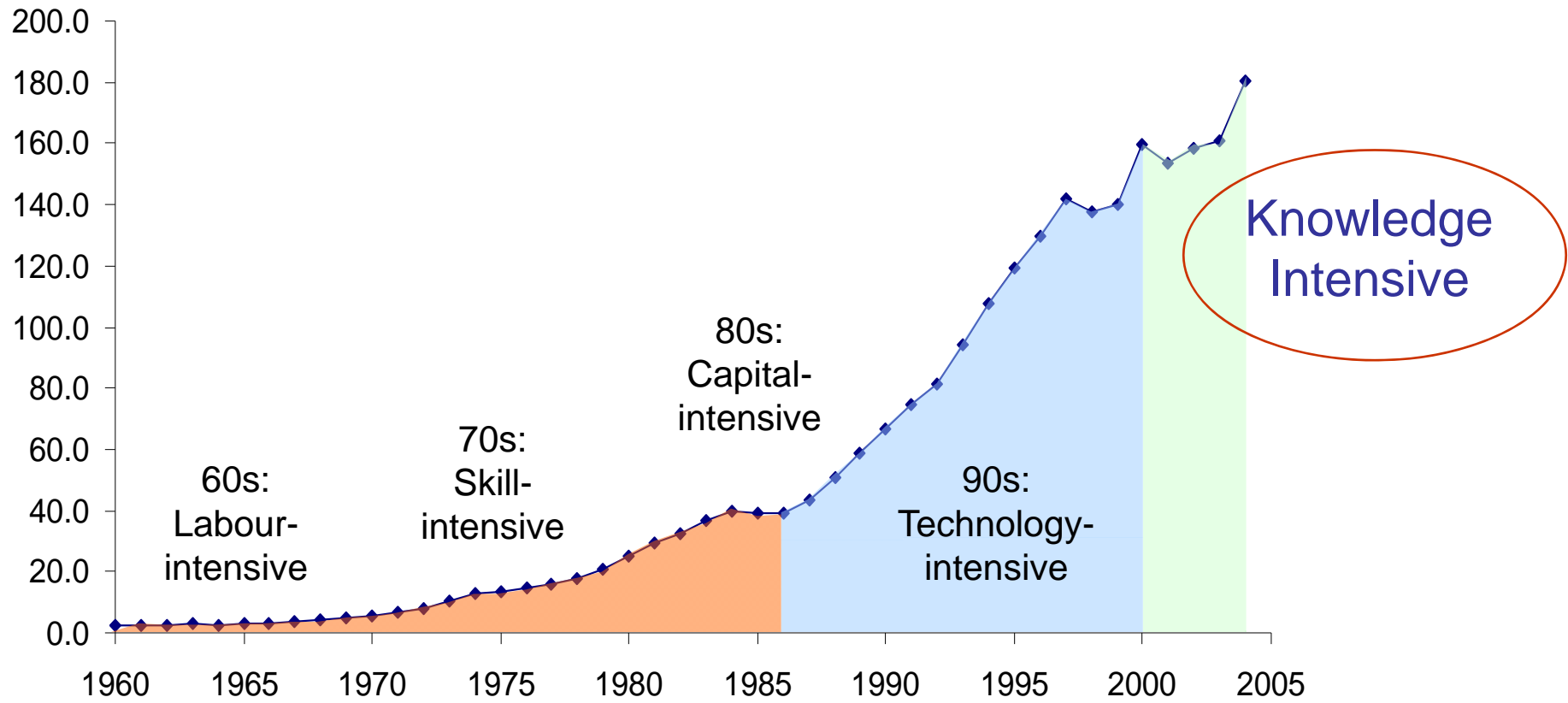
TAN Chorh-Chuan
President, National University of Singapore



The future of research universities in Asia

- **Why the research university is so critical for knowledge societies**
- Key elements of the research university of the future
- How research universities in Asia can create new streams for / of the future?

GDP \$B Singapore's economic transformation



NUS' transformation



In a knowledge society & economy, the research university has a pivotal role:

- Provides the human and intellectual capital that advance economic & societal growth
- Trans-disciplinary research strengths needed to tackle large, complex societal & global challenges
- Novel ideas and research with transformative potential

Research universities provide the human and intellectual capital that advance economic & societal growth



Social & global challenges

Public understanding & discourse

Policy innovation

Societal advancement

University

Human Capital

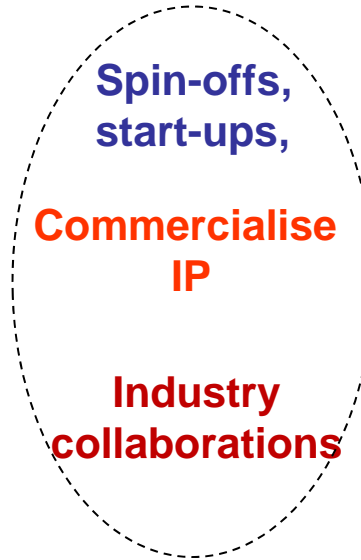
Research & translation

National & global Innovation Systems

New enterprise formation & scale-up

New products, services, innovations

Attract, grow industry & industry clusters



Why the research university is increasingly critical for knowledge societies

Provides human & intellectual capital that advance economic & societal growth, & address large complex societal challenges

Proactively empower graduates and society to ride the waves of the Age of Empowerment

Technology is empowering individuals to do many things not possible before

New business and funding models are empowering start-ups and small businesses to pursue ideas commercially at local or even global scale



A “flying car”

World’s lightest paraglider trike built by NUS Engineering students



NUS Law alumnus, TAN Min-Liang,
CEO of Razer, a global gaming technology
company valued at \$1.5 billion

Why the research university is increasingly critical for knowledge societies

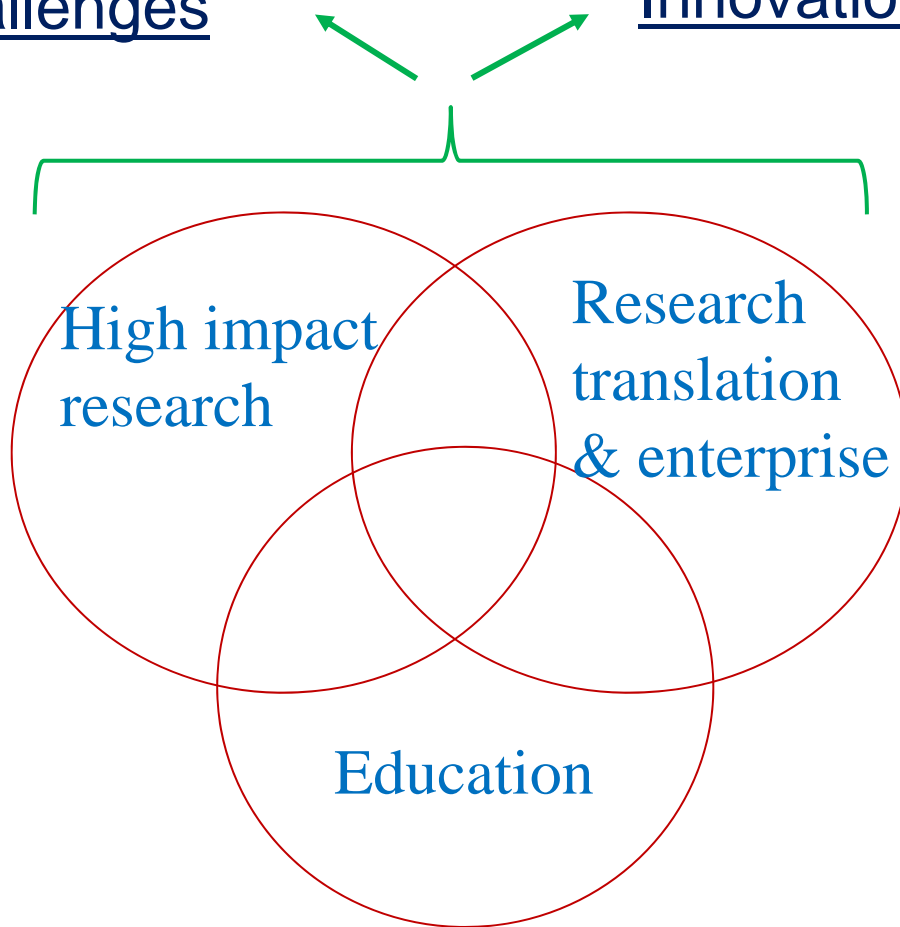
- Provide human & intellectual capital that advance economic & societal growth, & address large, complex societal challenges
- Proactively leverage the Age of empowerment
- **The university as a key place where the future is imagined & shaped, and young people are inspired and empowered**

The university - where the future is imagined & shaped



Social & global challenges

National & global Innovation Eco-systems



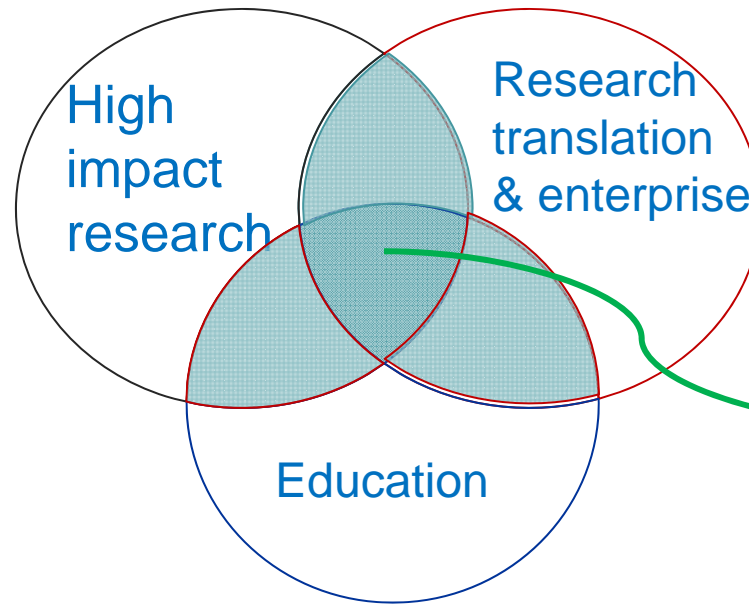
Research University

The university - where the future is imagined & shaped, & young people are inspired & empowered



Social & Global Challenges

National & Global Innovation Eco-systems



Future-Ready Graduates with transformative impact

Research University

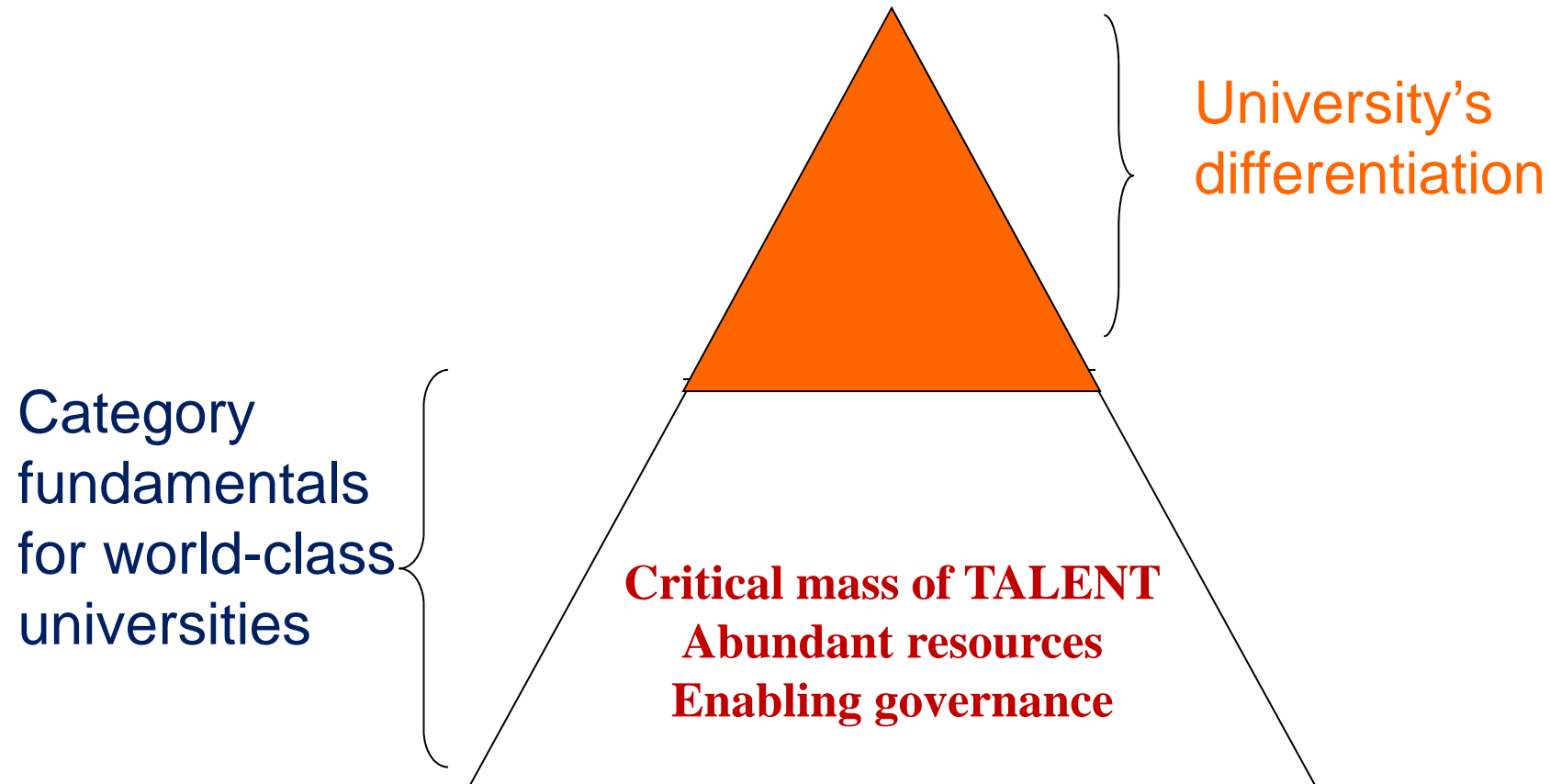
The future of research universities in Asia

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How to make the university a key
place where the future is imagined
& shaped.....

and young people are inspired and
empowered?

Three ideas that expand on the conceptual framework for world-class universities*



*Adapted from Salmi

Making the university a key place where the future is imagined & shaped – **category fundamentals**

PEOPLE

CULTURE

PURPOSE

Making the university a key place where the future is imagined & shaped:
category fundamentals



PEOPLE 

CULTURE

PURPOSE

Quality

Diversity (& its able management)
backgrounds, expertise, countries



Talent with transformative impact
– sufficient critical mass,
– broader definition eg academic
entrepreneurs / innovators
(even administrators!)

Making the university a key place where the future is imagined & shaped:
category fundamentals; #1



PEOPLE

CULTURE →

PURPOSE

Excellence

Entrepreneurial mindset
that creates and/or seizes
new opportunities

**Empowering environment
& infrastructure**
that enables talent to excel
& innovate

Making the university a key place where the future is imagined & shaped:
category fundamentals; #2



PEOPLE

CULTURE

PURPOSE 

University “leadership”

**Strategic positioning &
distinctive value**

Superior execution

Making the university a key place where the future is imagined & shaped: category fundamentals, #3

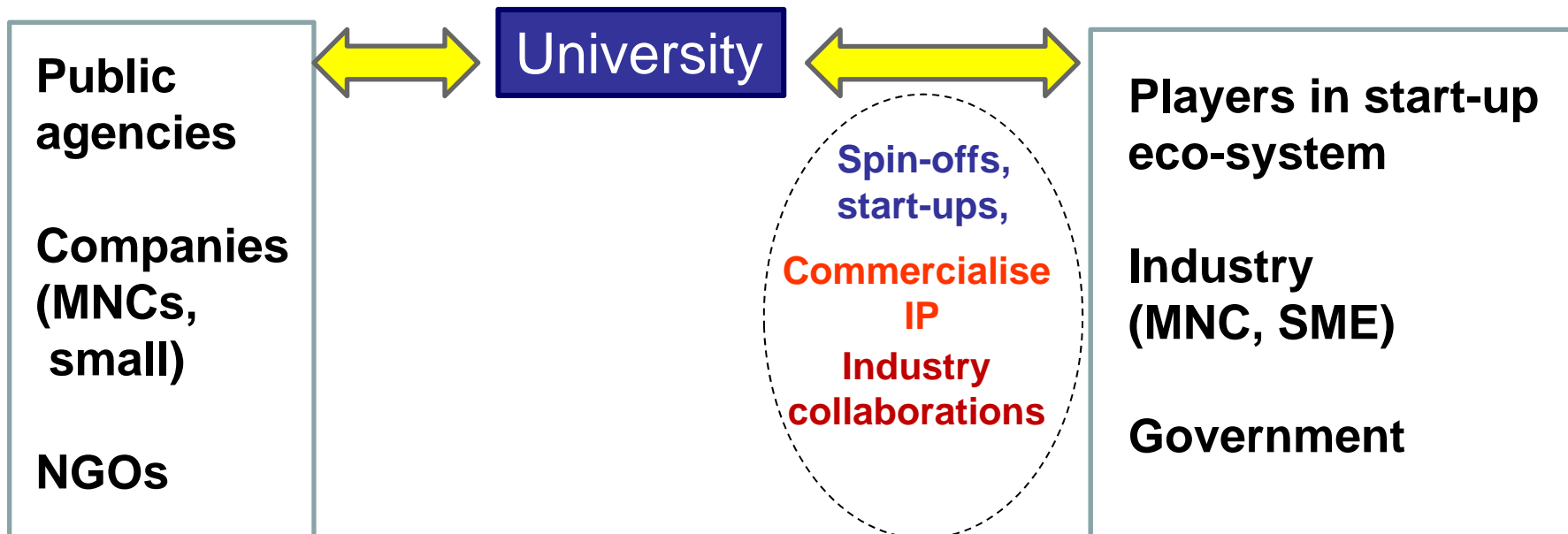
Critical importance of being a central node in the knowledge & innovation networks

The research university needs to be a central node in knowledge & innovation networks



Consortia for large challenges

Innovation Eco-systems



... and connected to key knowledge & innovation ecosystems globally



Eight NUS Overseas Colleges

Silicon Valley (2002)

Shanghai (2004)

Stockholm (2005)

Beijing (2009)

Israel (2011)

New York (2014)

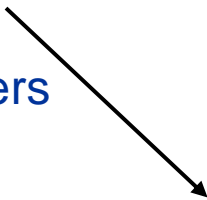
Munich (2016)

Lausanne (2016)



RESEARCH

Faculty
Researchers
Students



NUS ACCELERATORS



LAUNCHPADS

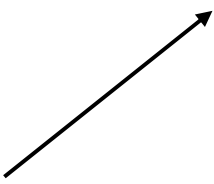


LOCAL



GLOBAL

NOC Graduate NOC



Entrepreneurial
Talent Development



Silicon Valley



China

The greatest impact of the university is by inspiring and empowering as many young people as possible for the future



Future-Ready Graduates:

- #1** Essential general skills, specific skills
- #2** Strong personal & interpersonal qualities
- #3** Entrepreneurial empowered mind-set
Imagination & boldness to act
Create and seize opportunities
- #4** Habit & ability for effective lifelong learning

Requires new pedagogies designed to achieve desired learning outcomes



Learning by tackling complex problems without prior knowledge

Problem-based learning – Collaborative Learning Cases

NUS Medicine (1997)

- tackling problems you have little prior knowledge of
- contextualising basic science knowledge

**Duke-NUS TeamLEAD –
(Learn, Engage, Apply & Develop), 2007**

Learning by Doing in Teams

Design Centric Programme @ Faculty of Engineering

- Hands-on, experiential collaborative learning
- Design-thinking encourages innovation

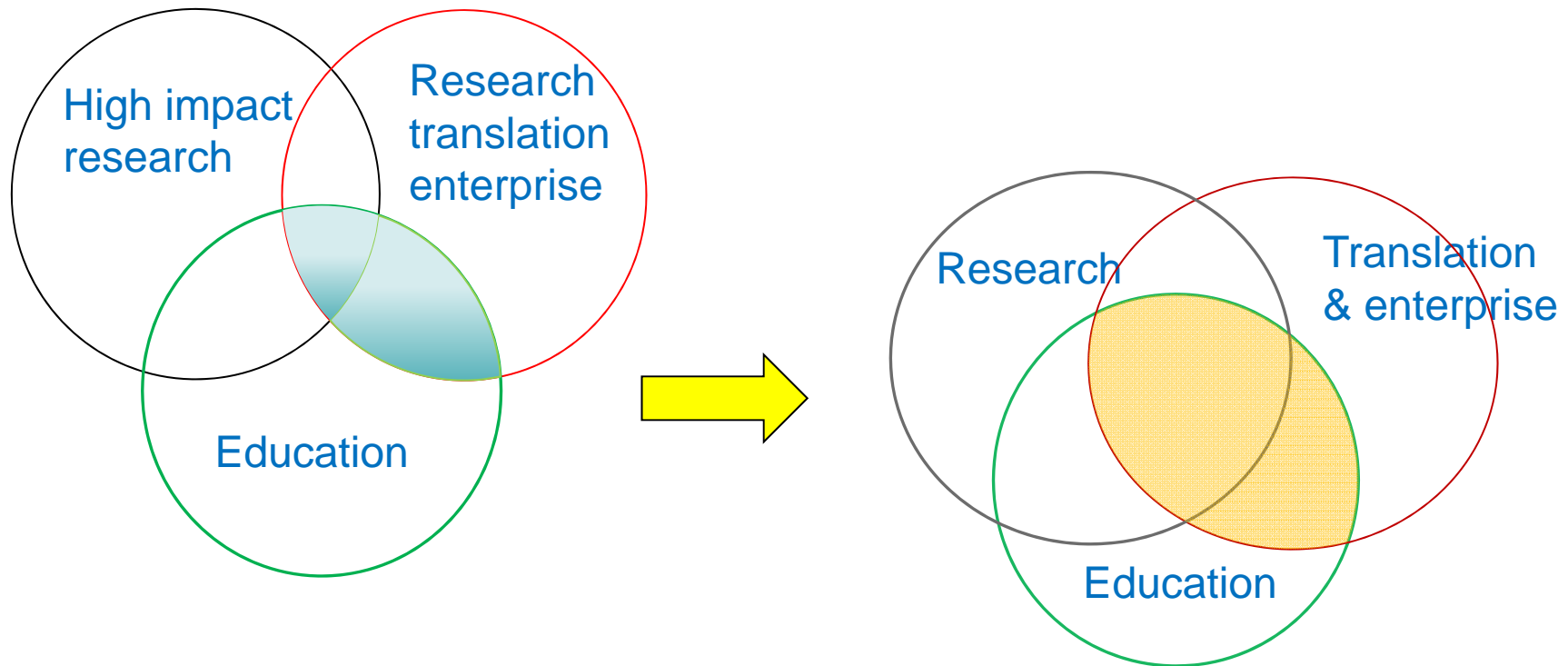
Internships & externships

Immersion in Industry Corporate labs @ NUS

Requires much greater focus on Experiential Learning

Immerse students in different learning settings & communities which bring them out of their comfort zone, challenge them personally & mentally, and help them understand themselves better

The greatest impact of the university is by inspiring and empowering as many young people as possible for the future



Research University

The future of research universities in Asia

Why the research university is so critical for knowledge societies

Key elements of the research university of the future

How research universities in Asia can create new streams for / of the future?

How research universities in Asia can create new future streams



Universities in several parts of Asia at intense growth phase

From 2004-2014, China's total R&D expenditure increased by 23% a year; on track to be the world's top R&D spender by 2019.

South Korea has superseded Israel as the world's most R&D intensive country, spending 4.36% of GDP

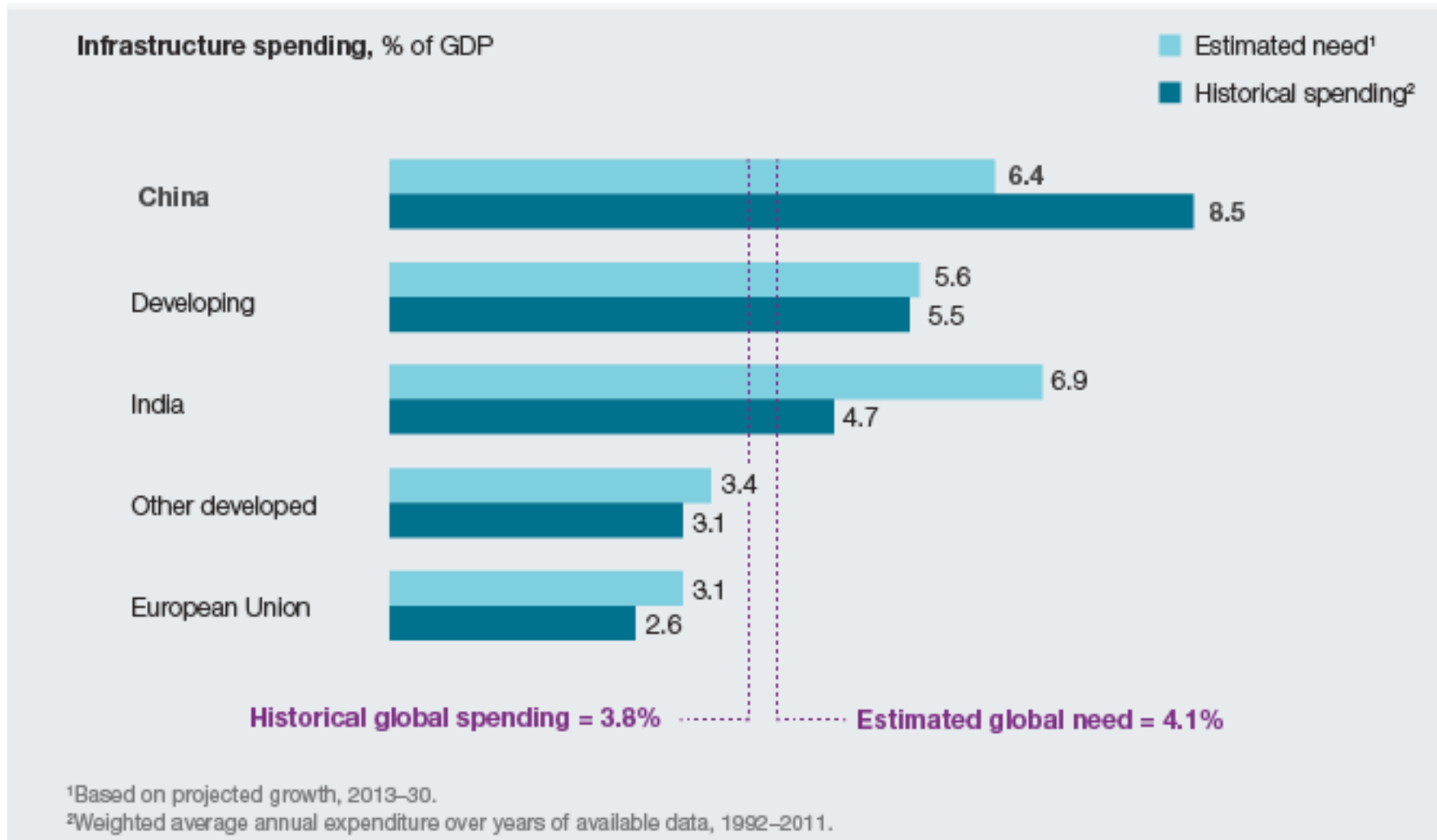
Focus is critical for universities whose resources are not growing as fast

How research universities in Asia can create new future streams

Universities in several parts of Asia at intense growth phase

Huge growth momentum in Asian countries

Huge Growth Momentum in Asia: Infrastructure Development



Source: <http://www.mckinsey.com/global-themes/winning-in-emerging-markets/chinese-infrastructure-the-big-picture>

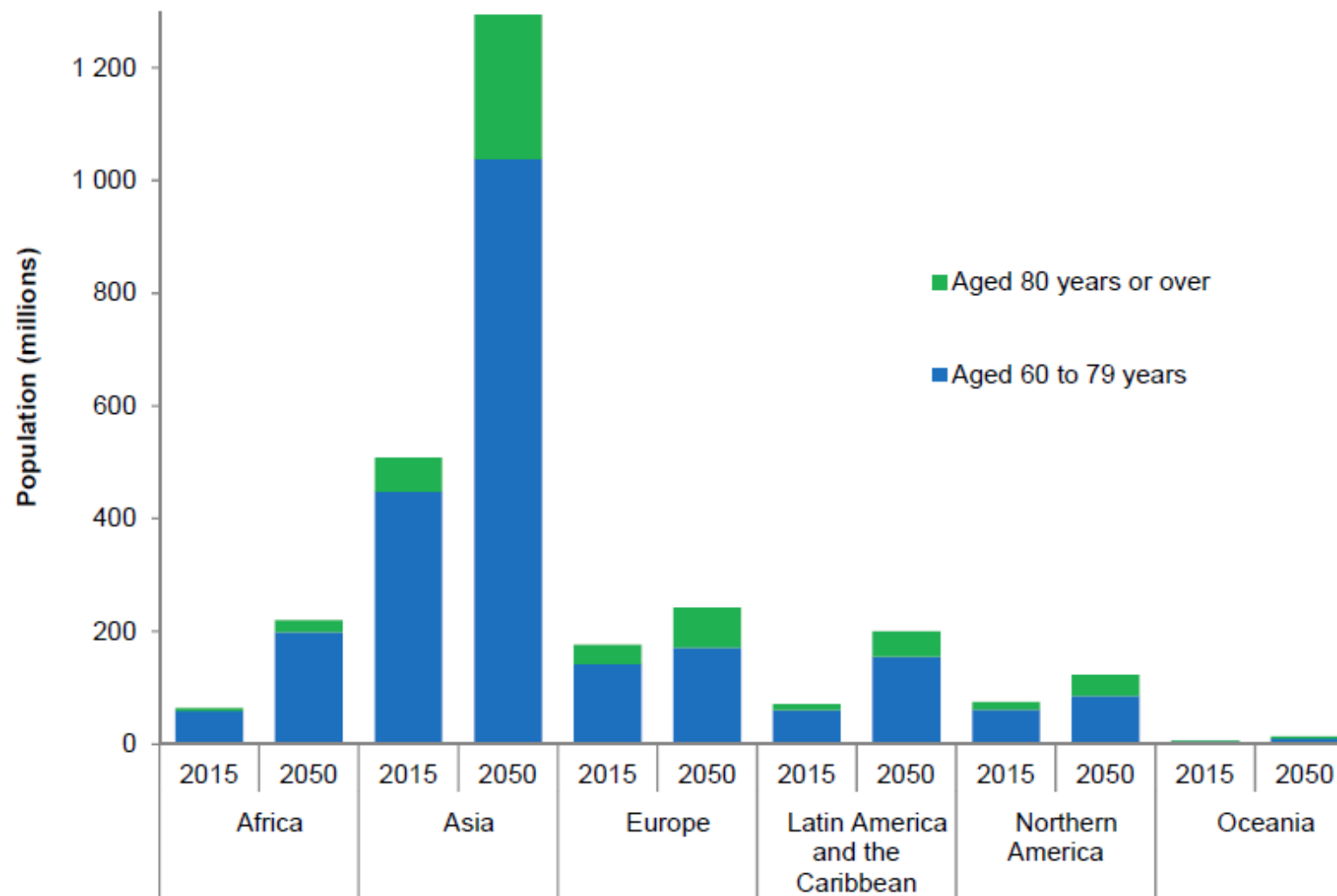
How research universities in Asia can create new future streams

Universities in several parts of Asia at intense growth phase

Huge growth momentum in Asian countries

Complex challenges eg environmental degradation, ageing

Complex Challenges: Ageing



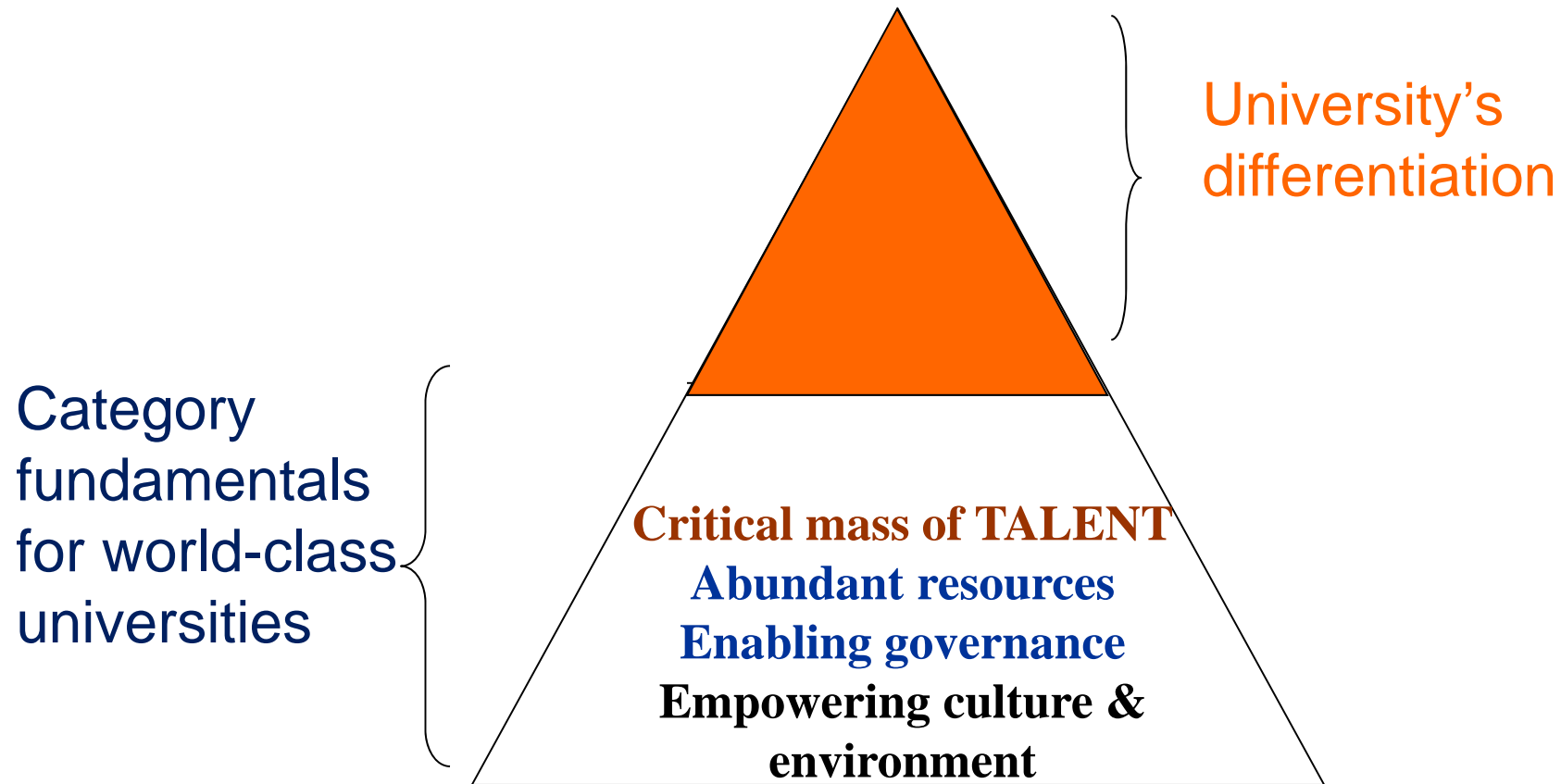
Population of older persons

Excellent conditions for universities to develop education, research, translation and entrepreneurial programmes that ride on the opportunities, and tackle the complex challenges in Asia

Creates major opportunities for universities to differentiate themselves

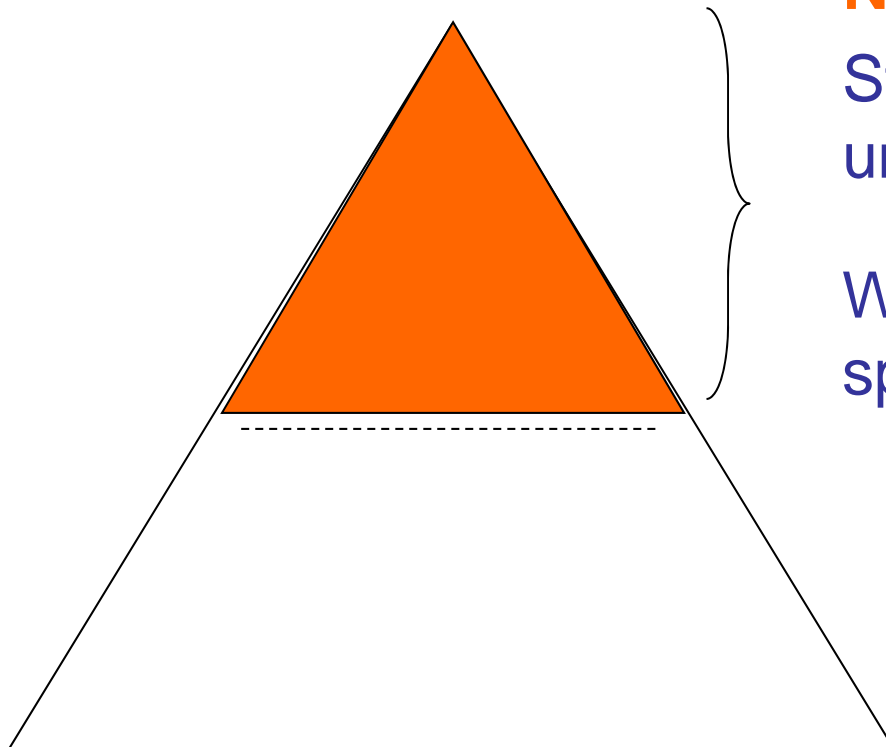


Example of NUS:



Differentiating vision

NUS: A leading Global University, centred in Asia



NUS' differentiation

Students/graduates with deep understanding of Asia & the world

World-class research WITH special expertise on Asia



Yale-NUS College

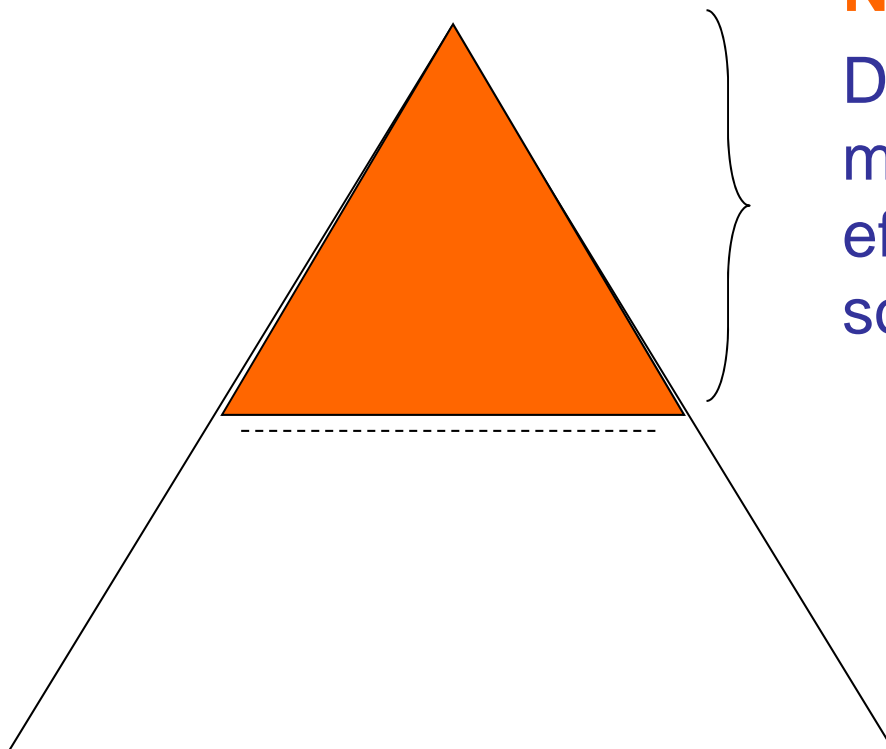
New liberal arts model
for Asia & the World

2009/2011



Differentiating vision

**NUS: A leading Global University, centred in Asia,
influencing the future**



NUS' differentiation

Drive and/or be a key node in
multi-partner platforms that
effectively address large complex
social challenges

Key driver in large multi-partner platforms that address complex challenges



NUS Health System Innovation Cluster



Challenges



- **Why change?** Ambition / Drive / Commitment
Building institutional culture of innovation & change
- **Change to achieve what?** Clarity of goals
- Ample, sustained & diversified **funding**
- Strategic **positioning** appropriate to context
Superior execution
- **Talent**
Nurturing, recruiting, retaining, achieving diversity
- Creating effective **clusters** of partnerships & ecosystem
- Creating transformative **value & impact**

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