



Innovation & Impact:

# The Future of NUS

# Singapore



**Population: 5.64M**

**GDP: ~ USD \$350B**

**GDP Per Capita: ~ USD\$62K (nominal 2018)**





NUS is **Singapore's flagship university.**  
Our reputation for excellence is built on  
| Education and research innovation  
| Discoveries and initiatives that  
| contribute to country and society






# Founded by the community for the community

Established in 1905 as a medical school  
to serve the local community

Championed by Straits-born merchant  
and community leader Tan Jiak Kim  
and a group of local businessmen





A photograph of three students in a modern university setting. A young man with dark hair and headphones around his neck is smiling and looking at a laptop. A young woman with dark hair is also smiling and looking at the same laptop. A third student, seen from the back, is also looking at the laptop. The background shows other students and large windows.

As a leading  
global university  
shaping the future,

| we nurture students  
to understand Asia  
and the world

**17** faculties and schools  
which offer  
**multiple**  
**educational**  
**pathways**  
for 38,000  
students



# Alumni

are graduates\* of the National University of Singapore, including its five predecessor institutions.



**1905**

King Edward VII  
Medical School



**1928**

Raffles  
College



**1949**

University of  
Malaya



**1955**

Nanyang  
University



**1962**

University  
of  
Singapore



**1980**

National  
University of  
Singapore



Our alumni numbers are

**growing at about  
10,000 per annum**

\*All graduates awarded with an undergraduate or postgraduate degree, or graduate diploma are accorded alumni status.

# Alumni Demography

300,000 alumni...  
... spread across the world

50%

Young  
alumni  
 $\leq 40$  years



38%

Prime  
alumni  
41 – 60 years



12%

Senior  
alumni  
 $\geq 61$  years



87%

Singapore



3%

Malaysia



1%

China



1%

United States



8%

Others



# Our distinctive global programmes

| NUS Overseas  
Colleges

| Student exchange  
and internships

| >70 double,  
joint  
and concurrent  
degrees with top  
universities





**>300** partner  
universities  
in 40+ countries for  
2,200 student exchange  
experiences



# Pioneering new educational pathways in Singapore



Leading **liberal arts college**  
in Asia which offers a new  
model of liberal arts & science  
education for Asia and the world

Yale University's first campus  
outside New Haven, Connecticut





# We are Asian and Global

**TOP**  
in APAC

2017 \*\*THE Asia Pacific  
University Rankings  
2017 \*\*THE Asia  
University Rankings

**1st**  
Asia

2018 US News & World Report's  
Best Global Universities  
in Asia Rankings

**4th**  
Most  
International

2017 \*\*THE Most International  
University Rankings

**15th**  
Globally

2018 \*QS World University  
Rankings

**16th**  
Globally

2017 \*\*Global University  
Employability Ranking

**23rd**  
Globally

2019 \*\*THE World  
University Rankings

**27th**  
Globally

2017 \*\*THE World  
Reputation Rankings

\*Quacquarelli Symonds

\*\*Times Higher Education





## **NUS' growth trajectory has been dramatic**

	<b>1998</b>	<b>2006</b>	<b>2017</b>	<b>Change 2006- 2017</b>
<b>Student enrolment</b>	<b>24,000</b>	<b>33,000</b>	<b>38,000</b>	<b>15%</b>
<b>External research funding</b>	<b>US \$38M</b>	<b>US \$180M</b>	<b>US \$540M</b>	<b>200%</b>
<b>Tenure-track faculty</b>	<b>1,300</b>	<b>1,300</b>	<b>1,600</b>	<b>22%</b>

# What is the Future of NUS?

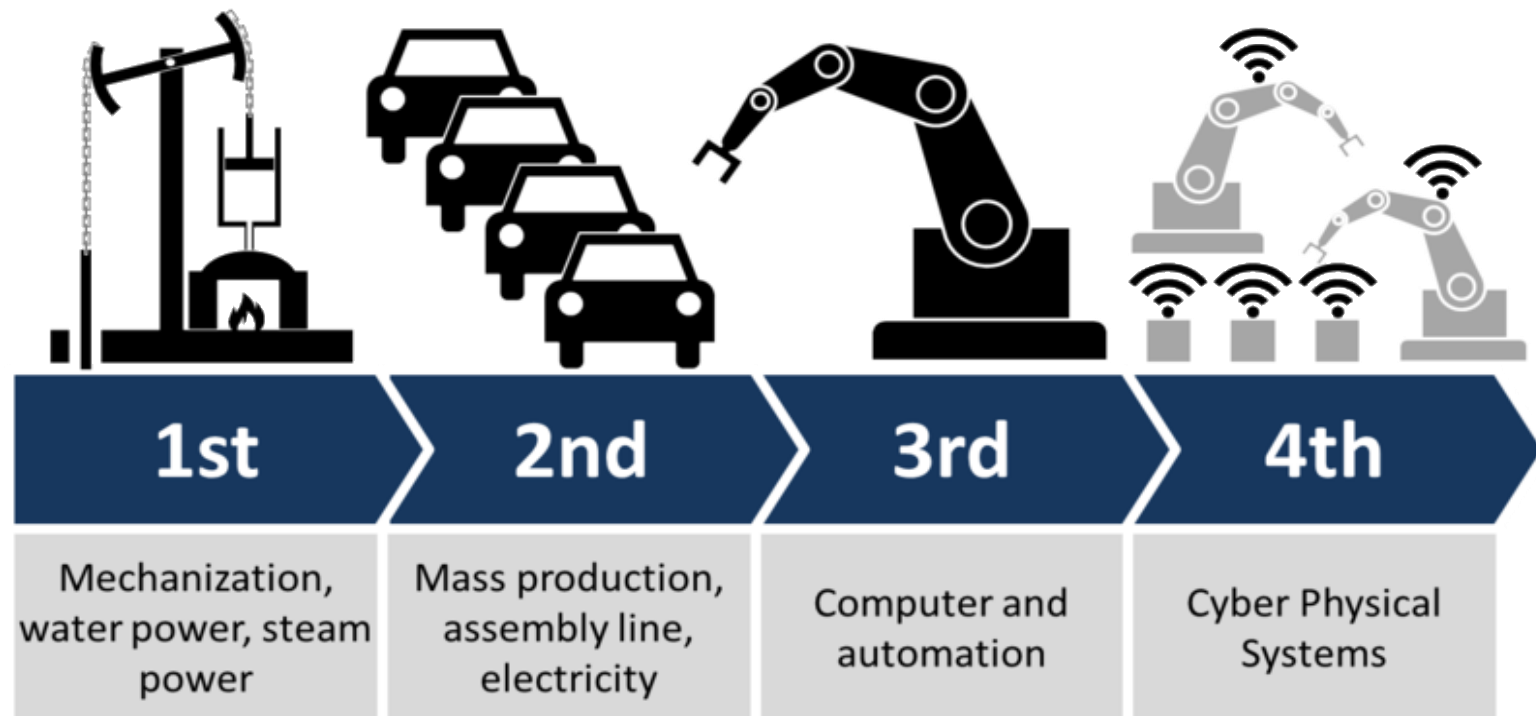




- 
- A complex, multi-ring chemical structure, possibly a steroid or a similar organic molecule, is rendered in a light blue, semi-transparent style against a dark blue background. The structure features various functional groups, including hydroxyl (-OH) and carbonyl (=O) groups, and is composed of several fused and linked rings.
- **INNOVATION**  
**FOR IMPACT**
  - **LIFELONG** **LEARNING**

# Fourth Industrial Revolution

New technologies that are fusing the physical, digital and biological worlds





# Massification of Higher Education

OECD projects that China and India will produce 40% of total global graduates by 2020. By 2020, China aims for 20% of its citizens – or 195 million people – to have higher education degrees



# Changing Nature of Employment

- US Bureau of Labor Statistics estimates that workers born between 1957 to 1964 held an average of 11.7 jobs between the ages of 18 and 48.
- A CNN report said that Millennials change jobs 4 times in their first decade out of college.
- **Rise of Gig Economy:** A 2016 US report said that 55 million people (or 35 percent of the total U.S. workforce) are members of the gig economy, ranging from millennials to retirees. Their labour contributed \$715 billion annually to the economy.



# Innovation & Enterprise at NUS

Dovetails with the national innovation framework

***“We are on an irreversible journey to pursue growth based on productivity and innovation”***

- Mr Ong Ye Kung, Minister for Education, Singapore

# Impetus for Innovation & Enterprise in Singapore

- Singapore's small size
- Challenging demographic trends
- Cannot pump up growth by increasing the size of our labour force





# INNOVATION FOR IMPACT



# Providing entrepreneurship education

NUS Overseas Colleges

| Established in 2002

| > 2,400 NOC alumni

| > 350 start-ups founded by NOC alumni





# NUS Overseas Colleges (NOC)

## *NOC in Silicon Valley (2002)*

- *Stanford University*

## *NOC in Shanghai (2004)*

- *Fudan University*

## *NOC in Stockholm (2005)*

- *KTH Royal Institute of Technology*

## *NOC in Beijing (2009)*

- *Tsinghua*

## *NOC in Israel (2011)*

## *NOC in New York (2014)*

## *NOC in Lausanne (2016)*

- *École Polytechnique Fédérale de Lausanne (EPFL)*

## *NOC in Munich (2016)*

## *NOC in Southeast Asia (2018)*

## *NOC in Toronto (2018)*



- Opportunities to experience startups around the world
- Full-year internship programme, or short programmes
- Entrepreneurship courses with partner universities
- > 2,400 alumni, > 350 alumni startups

# Some NOC Alumni Companies





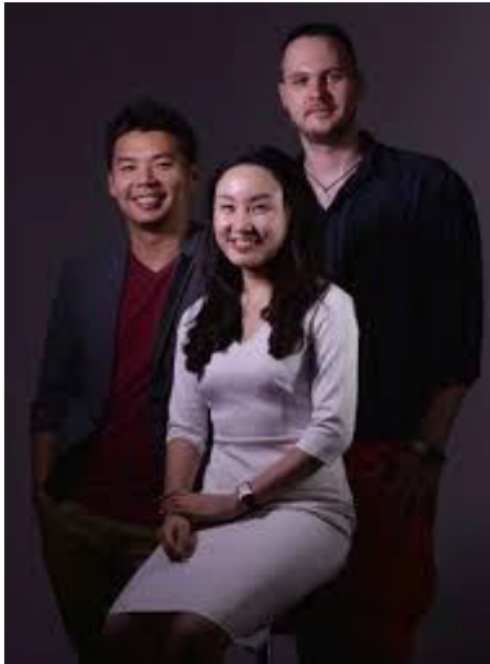
# Success Stories



*NOC alumni Lucas Ngoo, Quek Siu Rui and Marcus Tan*

- Mobile marketplace app that allows users to buy and sell “in a snap;” over 95M global listings as of Sept 2017
- Raised USD \$35M in Series B funding in 2016
- Raise a reported USD \$70-80M Series C round in 2017
- Has expanded to Malaysia, Indonesia, Taiwan, Hong Kong, Philippines, Australia

# Success Stories



- One of the world's fastest-growing patent search & analysis platforms
- Over 3000 customers, including MIT, IBM, Pepsi & NASA
- Over 400 staff in Singapore, China and the UK
- Raised S\$4.5M in 2014; \$11M in 2015; and a Series C round in 2016
- Launched R&D center in Singapore in 2017

*NOC alumni Jeffrey Tiong and Guan Dian, with Markus Haense*



# Promising spin-offs

Biomedical  
engineering spin-off;  
**raised SGD9M**  
in Series B in 2013

Clearbridge  
**BioMedics**



Immunotherapy biotech;  
**raised > SGD100M**  
since 2014

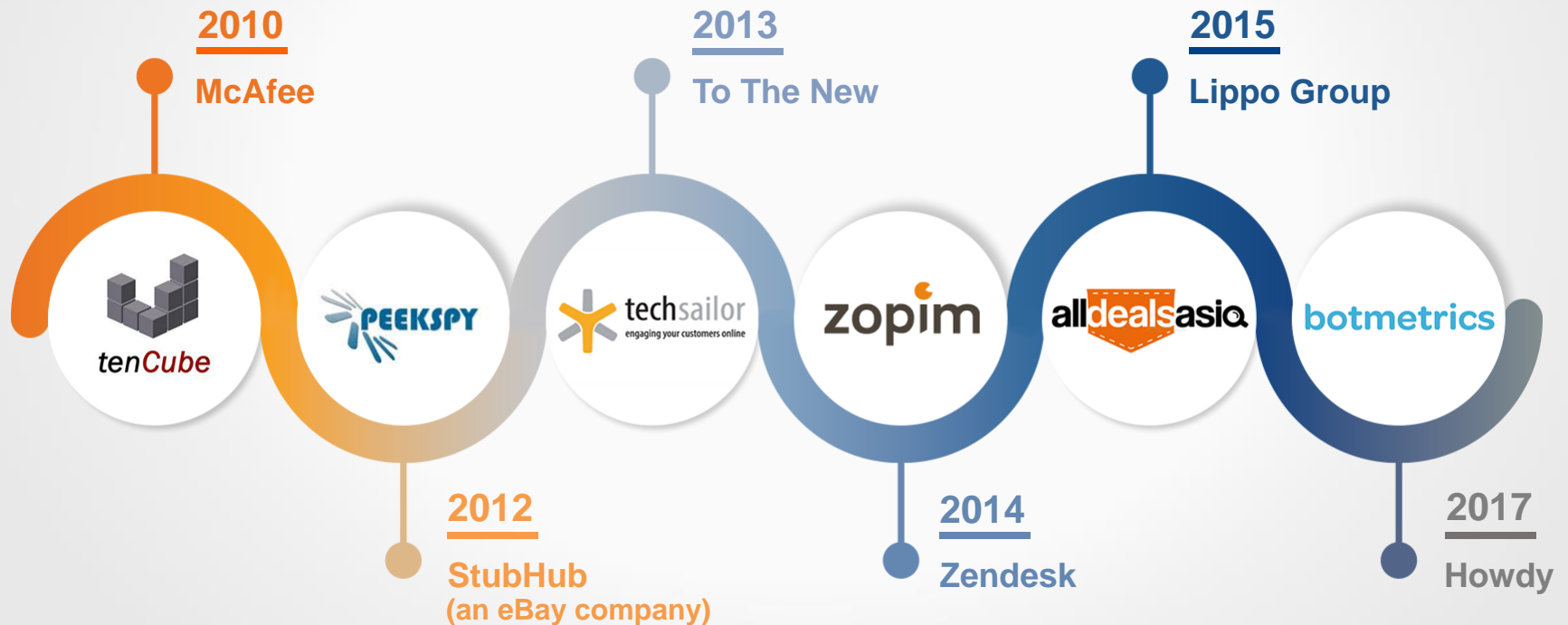


Adsorption  
desalination  
technology;  
**winner of  
BlueTech Award**  
at 2014 SIWW



Microarray technology;  
POC recipient;  
**closed > €11M in financing**

# Successful start-up acquisitions





# NUS' Innovation & Enterprise Network

## Research

Faculty  
Researchers  
Students



## NUS' enterprise ecosystem



## NOC Graduate NOC



Entrepreneurial  
Talent Development

In total:

**>1,000** start-ups/ projects  
supported by NUS  
incubation ecosystem  
**>400** events per year

## National ecosystem



NUS Plug-in  
@BLOCK71  
in 2011

*The Economist* dubs BLOCK71  
“the world’s most tightly packed  
entrepreneurial ecosystem”

## NUS' launchpads



Silicon Valley



By NUS Enterprise  
In partnership with Salim Group

Jakarta



Suzhou

# Why Lifelong Learning?

**No university can  
provide all the skills and  
knowledge that one  
would need for the next  
50 years**



# Embedding Lifelong Learning into the NUS Education Model

Lifelong Learners or L<sup>3</sup> Programme for all NUS alumni (includes SkillsFuture-subsidised courses)

More L<sup>3</sup> courses to be made available in phases

**All-You-Can-Learn** Programme for corporates



# NUS Lifelong Learners (L<sup>3</sup>)

## Our commitment to lifelong learning

- | 20-year commitment to undergraduates
- | First suite of 500 courses available in August 2018
- | Accelerate our alumni's growth and development
- | Anchor for continuing education and training for alumni





# NUS Lifelong Learners (L<sup>3</sup>)



Place

Pace

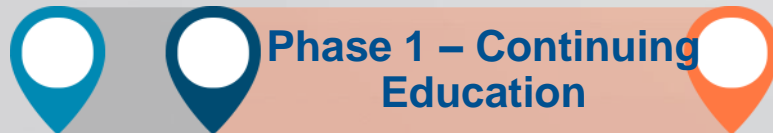
Pathway

Pedagogy



Start degree

Finish degree



~20

~24

~30

~40

~70

# NUS Lifelong Learners (L<sup>3</sup>)

## Place

- | not constrained by space; exploit online component

## Pace

- | learners' own time and pace

## Pathway

- | modular, stackable towards a Micro-Credential, Graduate Diploma or a 2<sup>nd</sup> Degree (Bachelor's or Master's), if desired

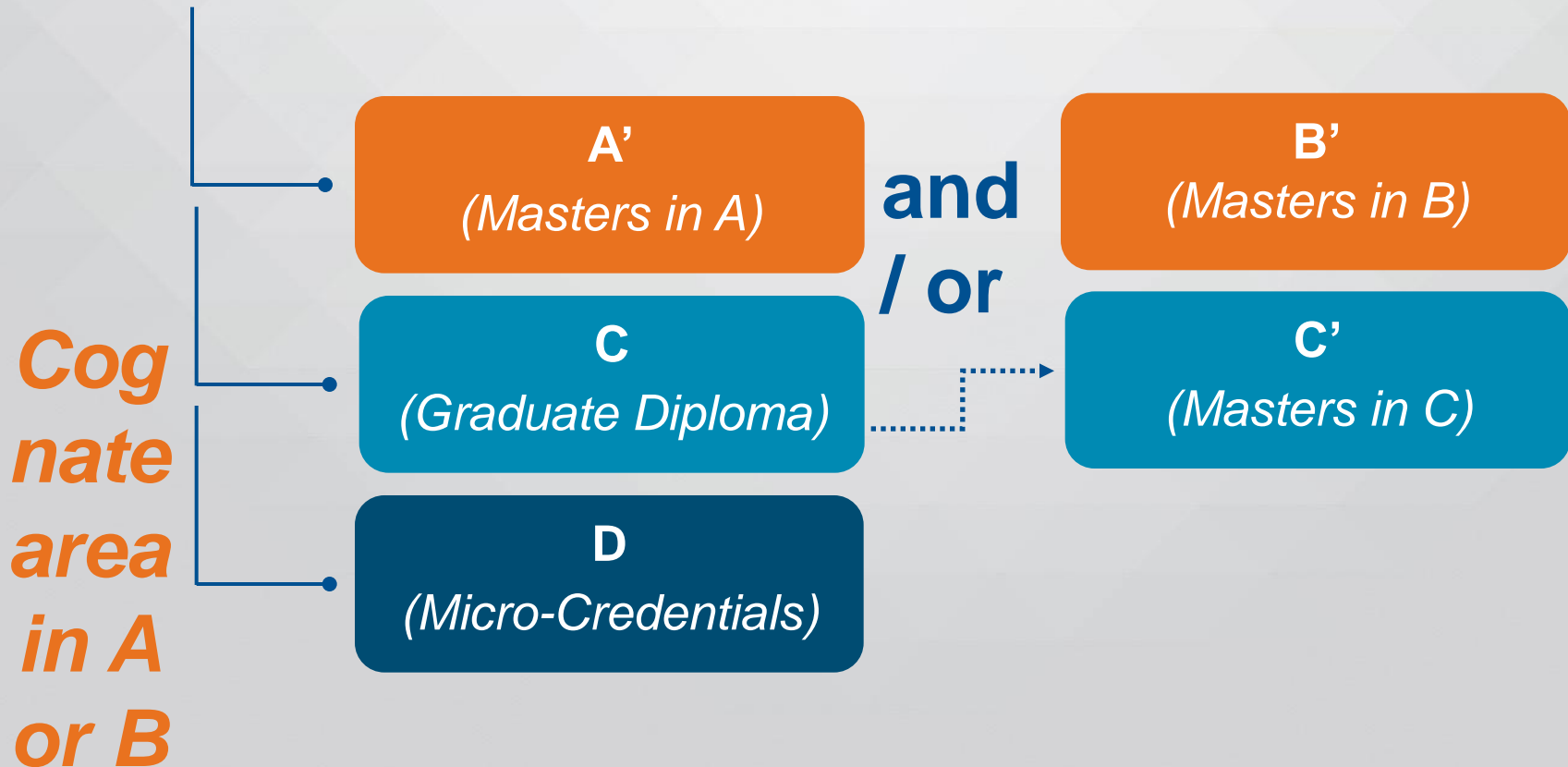
## Pedagogy

- | blended learning, i.e. mix in online and face-to-face interactions;
- | skills-based, industry-relevant



# NUS Lifelong Learners (L<sup>3</sup>)

## Double Majors (in disciplines A & B)



# **Lifelong Learning** requires these fundamental changes :

- Change in mindsets of learners, teachers and employers

- Substantial re-configuration of the current academic system

Do we need to  
revisit the  
definition of an  
*alumnus*?

