The Challenge of Establishing World-Class Universities

Jamil Salmi
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natural lab experiment: U. of Malaya vs. NUS

- late 1950s: 2 branches of University of Malaya
- today, stark difference:
  - THES: NUS # 34, UoM not in top 200
  - SJTU: NUS 101 - 150, UoM 401- 500
  - QS biology & chemistry: NUS # 28 & 15
outline of the presentation

• defining the world-class university
• the road to academic excellence
• lessons of experience
what have we learned?
how do you recognize a world-class university?

• everyone wants one
• no one knows what it is
• no one knows how to get one

*Philip G. Altbach*
defining the WCU

• self-declaration
WORLD CLASS

A 1-year MBA with international students, faculty and corporate connections.
A global perspective on business practice.

What will you bring?
defining the WCU

- self-declaration
- reputation
- rankings
教育部战略研究基地

世界一流大学研究中心

Center for World-Class Universities
top 50 universities (2011)

ARWU 2011
USA: 34
JAPAN: 2
CANADA: 2
UK: 5
WESTERN EUROPE: 7

THE 2011-12
USA: 30
JAPAN: 1
AUSTRALIA: 2
CANADA: 3
OTHER ASIA: 3
WESTERN EUROPE: 4
UK: 7
Characteristics of a World-Class University Alignment of Key Factors

- **Concentration of Talent**
  - Students
  - Teaching Staff
  - Researchers

- **Abundant Resources**
  - Public Budget Resources
  - Endowment Revenues
  - Tuition Fees
  - Research Grants

- **Dynamic Knowledge & Technology Transfer**
  - Autonomy
  - Academic Freedom
  - Leadership Team
  - Strategic Vision
  - Culture of Excellence

- **WCU**
  - Supportive Regulatory Framework

**Source:** Elaborated by Jamil Salmi
# weight of graduate students

<table>
<thead>
<tr>
<th>University</th>
<th>Undergraduate Students</th>
<th>Graduate Students</th>
<th>Share of Graduate Students (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard</td>
<td>7,002</td>
<td>10,094</td>
<td>59</td>
</tr>
<tr>
<td>Stanford</td>
<td>6,442</td>
<td>11,325</td>
<td>64</td>
</tr>
<tr>
<td>MIT</td>
<td>4,066</td>
<td>6,140</td>
<td>60</td>
</tr>
<tr>
<td>Oxford</td>
<td>11,106</td>
<td>6,601</td>
<td>37</td>
</tr>
<tr>
<td>Cambridge</td>
<td>12,284</td>
<td>6,649</td>
<td>35</td>
</tr>
<tr>
<td>LSE</td>
<td>4,254</td>
<td>4,386</td>
<td>51</td>
</tr>
<tr>
<td>Beijing</td>
<td>14,662</td>
<td>16,666</td>
<td>53</td>
</tr>
<tr>
<td>Tokyo</td>
<td>15,466</td>
<td>12,676</td>
<td>45</td>
</tr>
</tbody>
</table>
concentration of talent

• teachers and researchers
• incoming students
• undergraduate / graduate students balance
  – but involving undergraduate students in research
• international dimensions
international dimensions

• foreign faculty
  – Caltech (37%), Harvard (30%), Oxford (36%), ETH Zürich (60%)

• foreign students
  – Harvard (19%), Cambridge (18%)
abundant resources

• government funding
  – US able to spend 3.3% of GDP ($54,000 per student) – 1/3 public 2/3 private
  – Europe (E25) only 1.3% ($13,500 per student)

• endowments
### Comparison of US and UK Endowment Levels

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Harvard University</td>
<td>25,662</td>
<td>Cambridge</td>
<td>6,327</td>
</tr>
<tr>
<td>Yale University</td>
<td>16,327</td>
<td>Oxford</td>
<td>5,767</td>
</tr>
<tr>
<td>Stanford University</td>
<td>12,619</td>
<td>Edinburgh</td>
<td>264</td>
</tr>
<tr>
<td>Princeton University</td>
<td>12,614</td>
<td>Manchester</td>
<td>204</td>
</tr>
<tr>
<td>University of Texas</td>
<td>12,163</td>
<td>Glasgow</td>
<td>164</td>
</tr>
</tbody>
</table>
## Comparison of US and UK Endowment per Student

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Princeton University</td>
<td>1,667,000</td>
<td>Cambridge</td>
<td>343,934</td>
</tr>
<tr>
<td>Yale University</td>
<td>1,408,000</td>
<td>Oxford</td>
<td>283,670</td>
</tr>
<tr>
<td>Harvard University</td>
<td>1,209,000</td>
<td>Edinburgh</td>
<td>9,298</td>
</tr>
<tr>
<td>Stanford University</td>
<td>824,000</td>
<td>Glasgow</td>
<td>6,952</td>
</tr>
<tr>
<td>University of Texas</td>
<td>239,000</td>
<td>Manchester</td>
<td>5,208</td>
</tr>
</tbody>
</table>
abundant resources

- government funding
- endowments
- fees
- research funding
funding features of case studies

• 8 out of 11 are public institutions

• endowments
  – Pohang: 2 billion $
  – NUS: 1 billion $
  – Monterrey Tech: 1 billion $
  – SJTUU 120 million $
favorable governance

• freedom from civil service rules (human resources, procurement, financial management)

• management autonomy
  – flexibility and responsiveness with power to act

• selection of leadership team

• independent Board with outside representation
U. Of Malaya vs. NUS

- talent
  
  • UM: selection bias in favor of Bumiputras, less than 5% foreign students, few foreign professors
  
  • NUS: highly selective, 43% of graduates students are foreign, many foreign professors
U. Of Malaya vs. NUS (II)

- **finance**
  - UM: $385 million, $14,000 per student
  - NUS: $1 billion endowment, $1,200 million, $39,000 per student
U. Of Malaya vs. NUS

– governance

• appointment of VC highly political in Malaysia: 10 VCs until 2008 (Prime Minister statement)

• more professional in Singapore (5 VCs)

• UM: restricted by government regulations and control, unable to hire top foreign professors

• NUS: status of a private corporation, able to attract world-class foreign researchers
  – 52% of professors (9% from Malaysia)
  – 79% of researchers (11% from Malaysia)
NUS Solar Energy Research Institute: Taking the lead in solar energy research and development.
outline of the presentation

• defining the world-class university

• the road to academic excellence
the path to glory

- mergers
- upgrading existing institutions
- creating a new institution
upgrading approach

• less costly
• challenge of creating a culture of excellence
• focus on governance
which approach works best?

- upgrading and merging complicated
- establishing a new university from scratch potentially easier
who takes the initiative?

role of the State

• favorable regulatory framework

• funding
  • Excellence Initiatives
## # of excellence initiatives

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Africa</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Europe</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Middle East</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>North America</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>
## regional distribution of EIs

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>-</td>
<td>Nigeria</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>Australia, China, Hong Kong, Japan, South Korea</td>
<td>China, India, Japan, Malaysia, Singapore, South Korea, Taiwan, Thailand</td>
</tr>
<tr>
<td>Europe</td>
<td>Denmark, Finland, Norway</td>
<td>Denmark, France, Germany, Russian Federation, Spain</td>
</tr>
<tr>
<td>Middle East</td>
<td>-</td>
<td>Israel</td>
</tr>
<tr>
<td>North America</td>
<td>Canada</td>
<td>Canada</td>
</tr>
</tbody>
</table>
role of government in funding

• allocation method: competitive or picking winners?
• scholarship programs (Brazil, Chile, Kazakhstan)
• stability over the years
  • crisis (Japan and Spain)
  • phased programs
  • endowment (France)
funding features of case studies

• difficulty to mobilize alumni funding for new universities

• elements of public-private partnership (Pohang, HK, Monterrey, Catholic of Chile)
who takes the initiative? (II)

- role of the institutions
  - leadership
  - strategic vision
  - culture of excellence
evolution of Nokia income
outline of the presentation

• defining the world-class university
• the road to academic excellence
• lessons of experience
vintage bias
accelerating factors

• internationalization
research capacity: EU research grants by country of host institutions per 1 million inhabitants

- Greece: 0.3
- Ireland: 0.5
- Finland: 1.4
- Portugal: 2.0
- Switzerland: 2.3
- Cyprus: 2.6

(2007)
international dimensions

• reliance on Diaspora (Pohang, HK, SJTU, Cyprus)
• English language (all or many)
• foreign or foreign-trained academics
accelerating factors

• internationalization
• being a niche institution and / or offering niche programs
• curriculum, pedagogical and managerial innovations
• strategic planning and benchmarking
challenge of entering a crowded market

• Pohang U of Sc & T (POSTECH)
• Higher School of Economics
• Hong Kong U of Sc & T

• innovative education features
• innovative management
• clever marketing strategy
I pay fees.
I pay tax.
I get stabbed.
In Oz.

We want justice.

Student not safe in Australia.
obstacles to talent mobilization

• national level
  • visa regulations
  • taxation

• institutional level
  • academic rigor (setting the bar high)
  • discrimination (access to research funding, promotion prospects)
conclusion
to be or not to be
a WCU?
WCU health warnings…
CAN YOU TELL ME ABOUT MY FUTURE?

HMMMM... I WOULD, BUT I CAN’T READ CHINESE!
WCU health warnings...

• the rise of Asia
looking back to the past
looking ahead to the future
Key  City with highest publication output in the period 2004-2008; growth is since period 1996-2000.

- Decreased or stayed constant
- Increased 5-10 places
- Increased 10-20 places
- Increased 20+ places
### Export Market Share for Taiwan (1985)

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>48%</td>
</tr>
<tr>
<td>Europe</td>
<td>10%</td>
</tr>
<tr>
<td>Japan</td>
<td>11%</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>8%</td>
</tr>
<tr>
<td>ASEAN</td>
<td>6%</td>
</tr>
<tr>
<td>Others</td>
<td>17%</td>
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</table>
### Export Market Share for Taiwan (2011)

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainland China + Hong Kong</td>
<td>41%</td>
</tr>
<tr>
<td>ASEAN</td>
<td>16%</td>
</tr>
<tr>
<td>USA</td>
<td>11%</td>
</tr>
<tr>
<td>Europe</td>
<td>10%</td>
</tr>
<tr>
<td>Japan</td>
<td>9%</td>
</tr>
<tr>
<td>Others</td>
<td>14%</td>
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WCU health warnings…

- the rise of Asia
- what is your purpose?
  - chasing rankings and national prestige?
  - search for excellence?
WCU health warnings…

- the rise of Asia
- what is your purpose?
  - chasing rankings and national prestige?
  - search for excellence?
- distortion of resource allocation
- stress of competition
- global talent war
- danger of homogenization
Ernest Boyer  
(Scholarship Reconsidered)

We need a climate in which colleges and universities are less imitative, taking pride in their uniqueness. It’s time to end the suffocating practice in which colleges and universities measure themselves far too frequently by external status rather than by values determined by their own distinctive mission.
a word of caution

- danger of homogenization
  - dare to be different
- not all institutions “world-class”
- world-class tertiary education system
global rankings cover no more than 3-5% of all TEIs
money is not enough

- the most expensive universities in the world are not world-class
  - George Washington U (Washington DC)
  - Kenyon College (Ohio)
  - Bucknell U (Pennsylvania)
  - Vassar College (NY)
  - Sarah Lawrence College (NY)
it’s all about alignment
Characteristics of a World-Class University
Alignment of Key Factors

Source: Elaborated by Jamil Salmi
danger of complacency
He who waits with mouth open, hoping for roast duck to fly in, will have a very long wait. (Chinese proverb)
the road to academic excellence

• constantly challenge yourself and seek to renew your institution to keep improving
  
  *sense of urgency*
  
  – “rising above the gathering storm” (U of Illinois)
  – “change without a burning platform” (Aarhus U)
  – “expiry principle” (Olin C of Engineering)
  – “good is not good enough” (USP)
  – “if we stand still we will fall behind” (UK University Alliance)
World Class University Recipe

Lots of Talent

Plenty of Resources

A Touch of Governance

Allow to Simmer for a Long Time