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The external dimension: Positioning the EHEA in the global higher education world

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Innovation and the knowledge economy
are moving to the centre of government
policies around the world



We are seeing the emergence of an international arms race in investments in innovation

China and the arms race in innovation

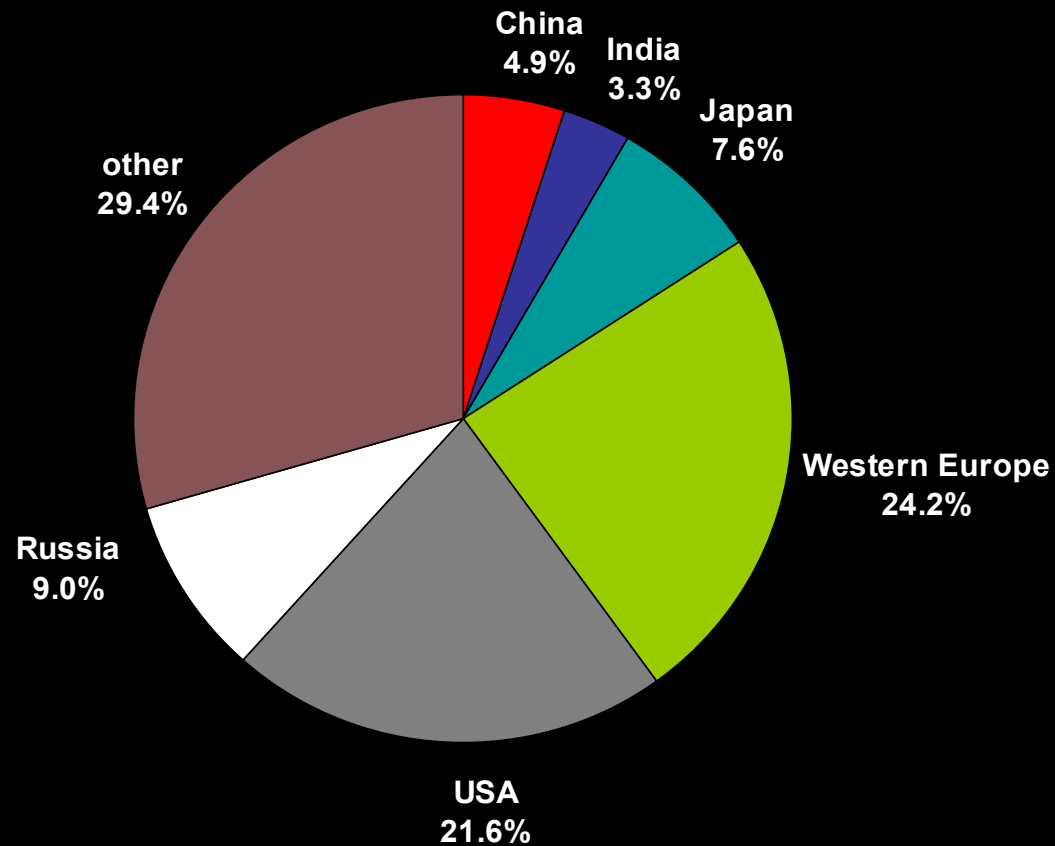
Previous efforts in other countries to use educational transformation as a mechanism either to maintain high growth or to initiate episodes of high growth have generally been regarded as unsuccessful, but the focus has been primary and secondary education, not tertiary. In China's case, these latest efforts seem to be motivated by a desire to maintain high growth by using educational transformation as the primary mechanism for skill upgrading and raising total factor productivity. If China succeeds, other countries may follow with higher educational competition between countries as a possible outcome.

-- Li et al., *The Higher Educational Transformation of China and its Global Implications*. NBER Working Paper No. 13849. Cambridge: National Bureau of Economic Research, 2008, p. 4.

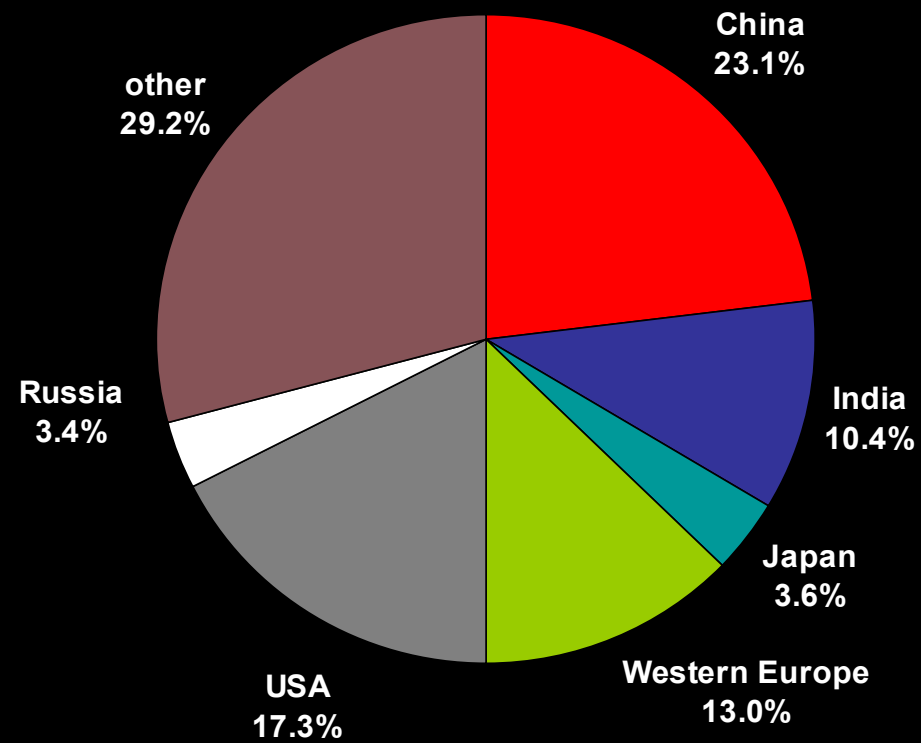
Higher education and research in China, and some other East Asian countries, are becoming more and more important on the global scale



Shares of world output: 1978



Shares of world output: 2030



Rise of Asia-Pacific k-economies

(not a threat but an opportunity)



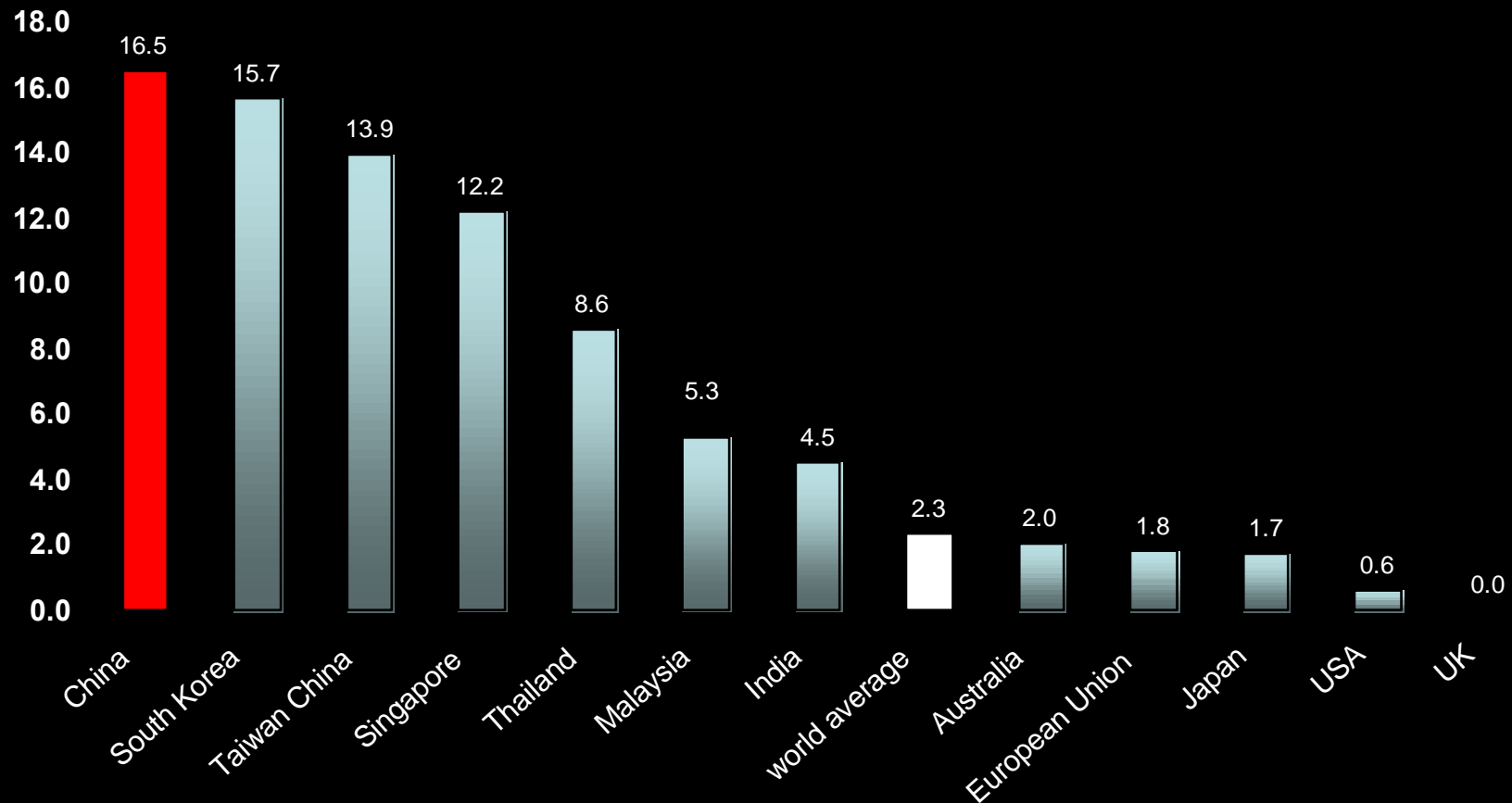
"Between 1998-2005 the number of tertiary students in China *multiplied by 4.4 times*. Tertiary participation has risen from 4 to 20 per cent of young people since 1990.

"From 1996-2005 China increased investment in R&D from 0.57% to 1.35% of GDP. China is the second largest investor in R&D, growing at nearly 20 per cent per annum. The number of scientific papers produced in China rose from 9061 in 1995 to 41,596 in 2005, *multiplying by 4.6 times*.

"From 1995-2005 annual scientific papers multiplied by four times in Korea; and three times in Singapore, which spent 2.24% of GDP on R&D in 2003, which was a higher level than most European nations.

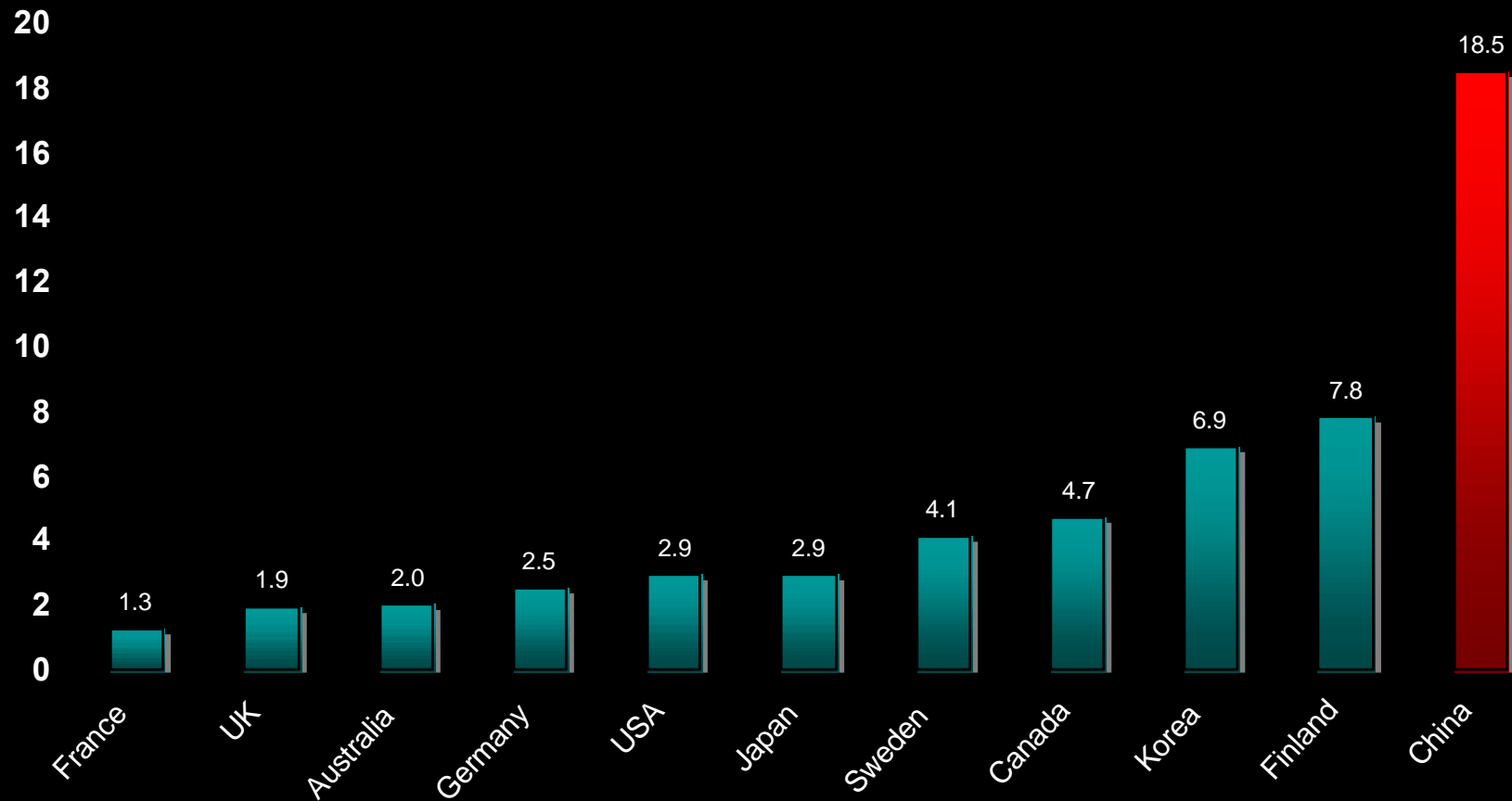
"By 2010, *90% of all science and engineering PhDs* will be Asians living in Asia.

Annual rate of growth of scientific publications, 1995-2005



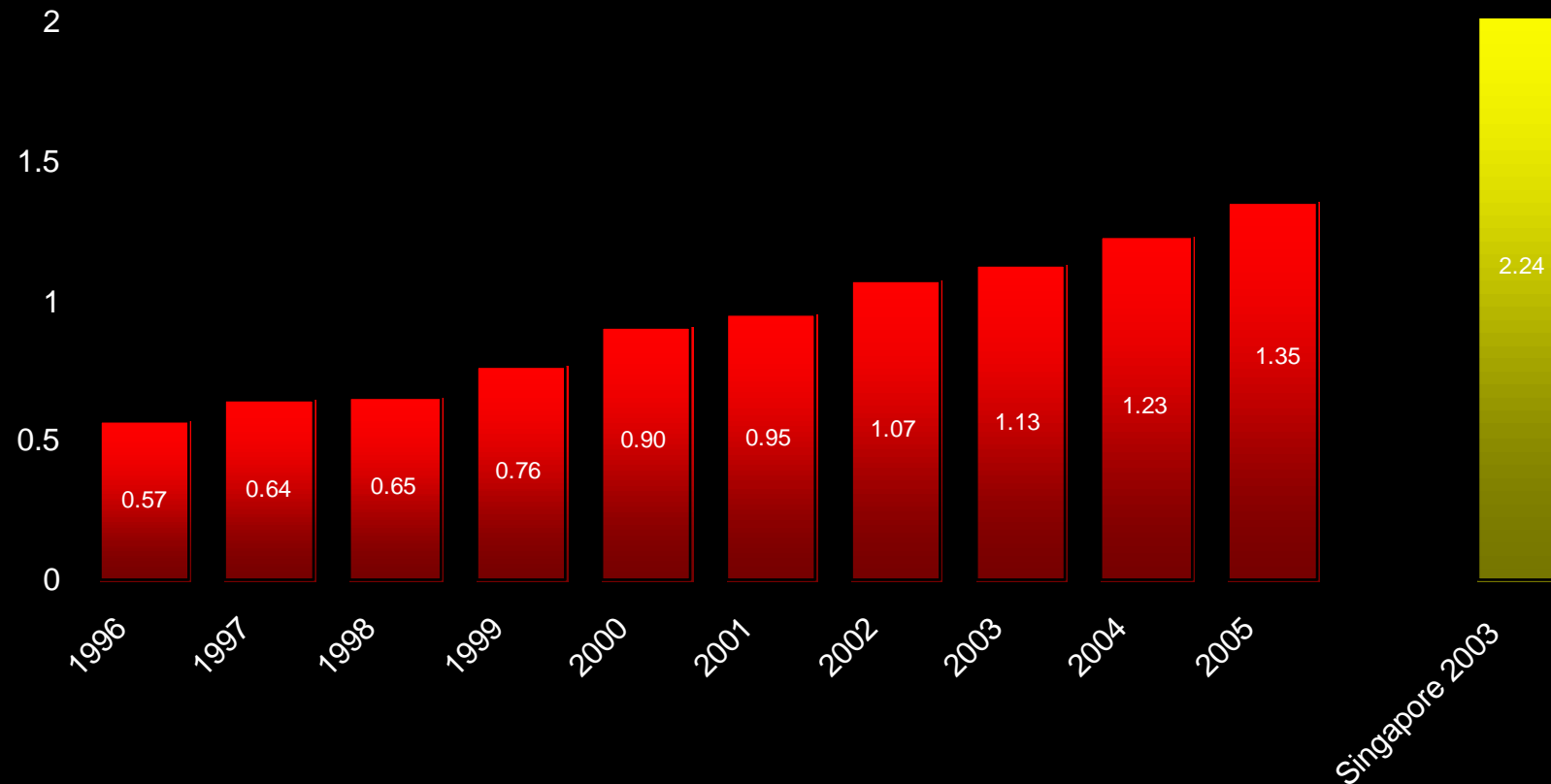
Average annual growth of spending on R&D 1995-2005 (%)

[constant prices, OECD. China data for 2000-2005 only]



Catching up fast: Investment in R&D in China as a % of GDP

UNESCO data for 1996-2005



In response to the new global spatiality a number of strategic options have emerged, for institutions and systems



Strategic options

1 Change the structures of global relations

- " Partnerships, networks, consortia
- " Online e-U $\$$ on a worldwide basis
- " Regionalism, as in the case of the EHEA

2 Cross borders more often

- " Promote mobility of students and staff
- " Mobility of institutions, as by the UK and Australia

3 Build strength as a node within the global networks

- " National investment in innovation capacity
- " Research concentration policies
- " Knowledge city/university synergies
- " National hub $\&$ strategies, such as Singapore

The EHEA has plenty of scope to step up the engagement with higher education worldwide



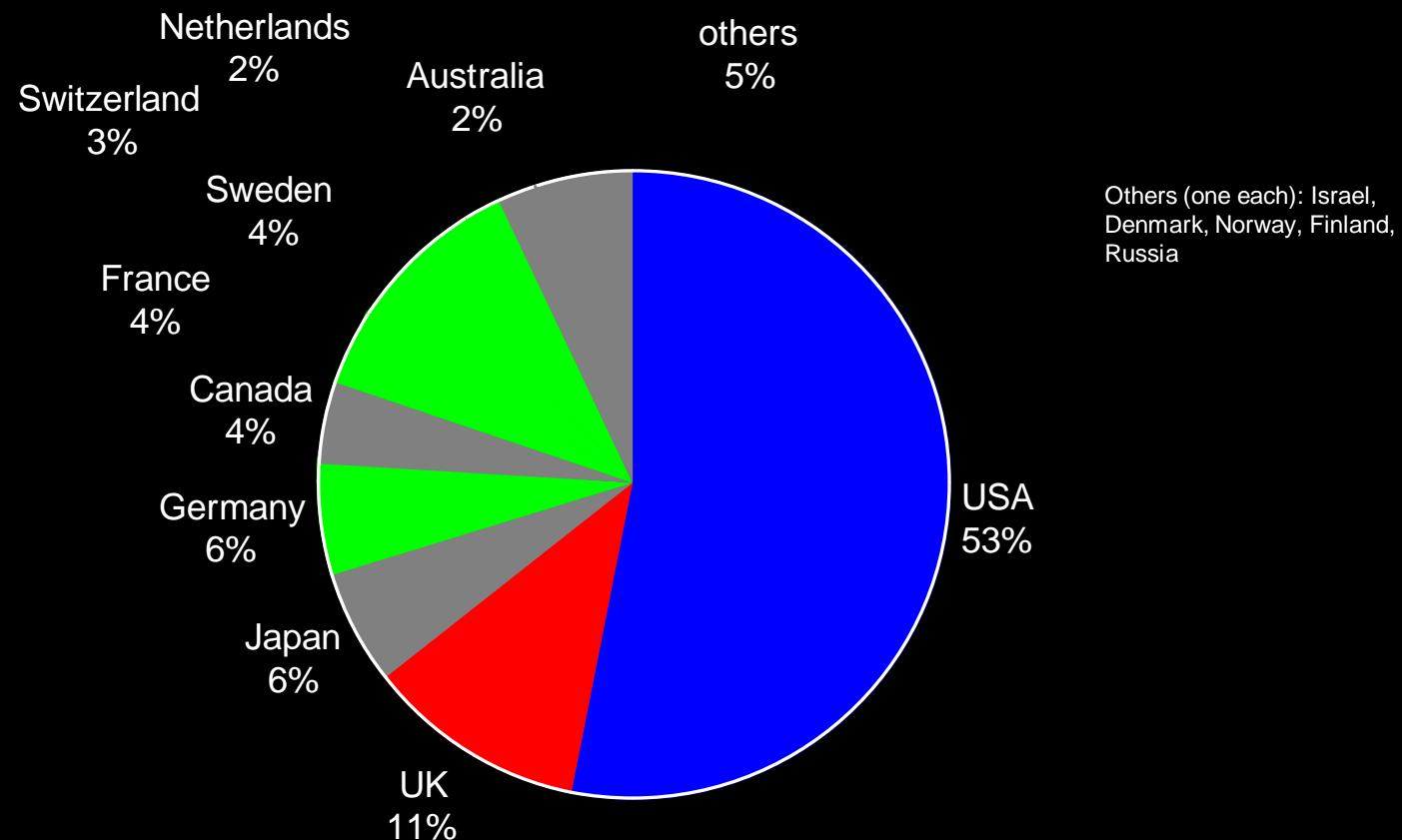
Strategies for EHEA engagement

- “ Attract high flying researchers and foreign doctoral students on the American scale by lowering barriers and reaching outwards
- “ Attract the R&D business of global corporations
- “ Continue building active networks with institutions in other regions
- “ Develop mobile institutions, creating campuses abroad
- “ Open source courseware as at MIT
- “ Open source academic publishing as at Harvard arts and science
- “ Build research concentrations and knowledge cities
- “ Lead the development of a global higher education architecture based on mutual capacity building in which diversity is integral as in the EHEA
- “ Look outwards, seize the day, Asia, Asia, Asia ã

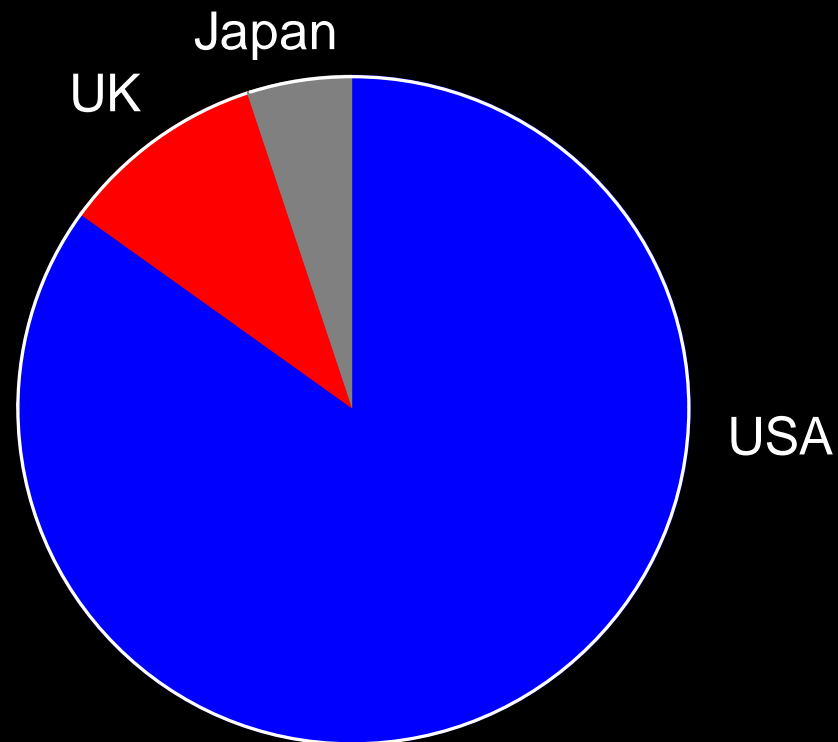
The EHEA will not become the leading knowledge economy region in the world by 2020, even if all governments spend American levels of GDP on higher education and R&D (though it would partly close the gap).

This is because US supremacy as a knowledge economy rests on more than just education and research.

Shanghai Jiao Tong top 100 research universities 2007



Shanghai Jiao Tong top 20 research universities 2007



Disciplines in SJTU top 100, 2008

	PHYS SCI	ENGINEERING	LIFE SCI	MEDICINE	SOC SCI	TOTAL
United States	59	49	62	61	77	308
United Kingdom	9	7	11	12	11	50
Canada	2	6	5	6	7	26
Germany	7	1	6	6	0	20
Japan	7	7	3	2	0	19
Netherlands	1	3	2	5	4	15
Switzerland	3	2	4	2	0	11
Australia	1	3	4	3	1	10
Israel	4	2	2	2	0	10
China	0	9	0	0	1	10
Sweden	2	3	2	2	0	9
France	5	2	1	1	0	9
Belgium	0	2	3	2	1	8
Italy	2	3	0	1	0	6
Denmark	2	1	1	1	1	6
South Korea	1	3	0	0	0	4
Singapore	1	2	0	0	1	4
others	1	2	1	3	1	8

Meta-strategy

1. The EHEA could become not the leading but the *most innovative* knowledge economy in the world by 2020
2. The EHEA's global competitive advantage in part lies in its superior cultural capacity to engage and collaborate
3. Open source rather than IP is increasingly the dominant mode
4. It is *crucial* to develop extensive and intensive relations with higher education and research in China and other Asian nations
5. The EHEA shares with China and other rising Asian knowledge powers an interest in the development of a more plural higher education environment
6. The EHEA could make a major contribution to the global architecture in the sector, which can develop only slowly