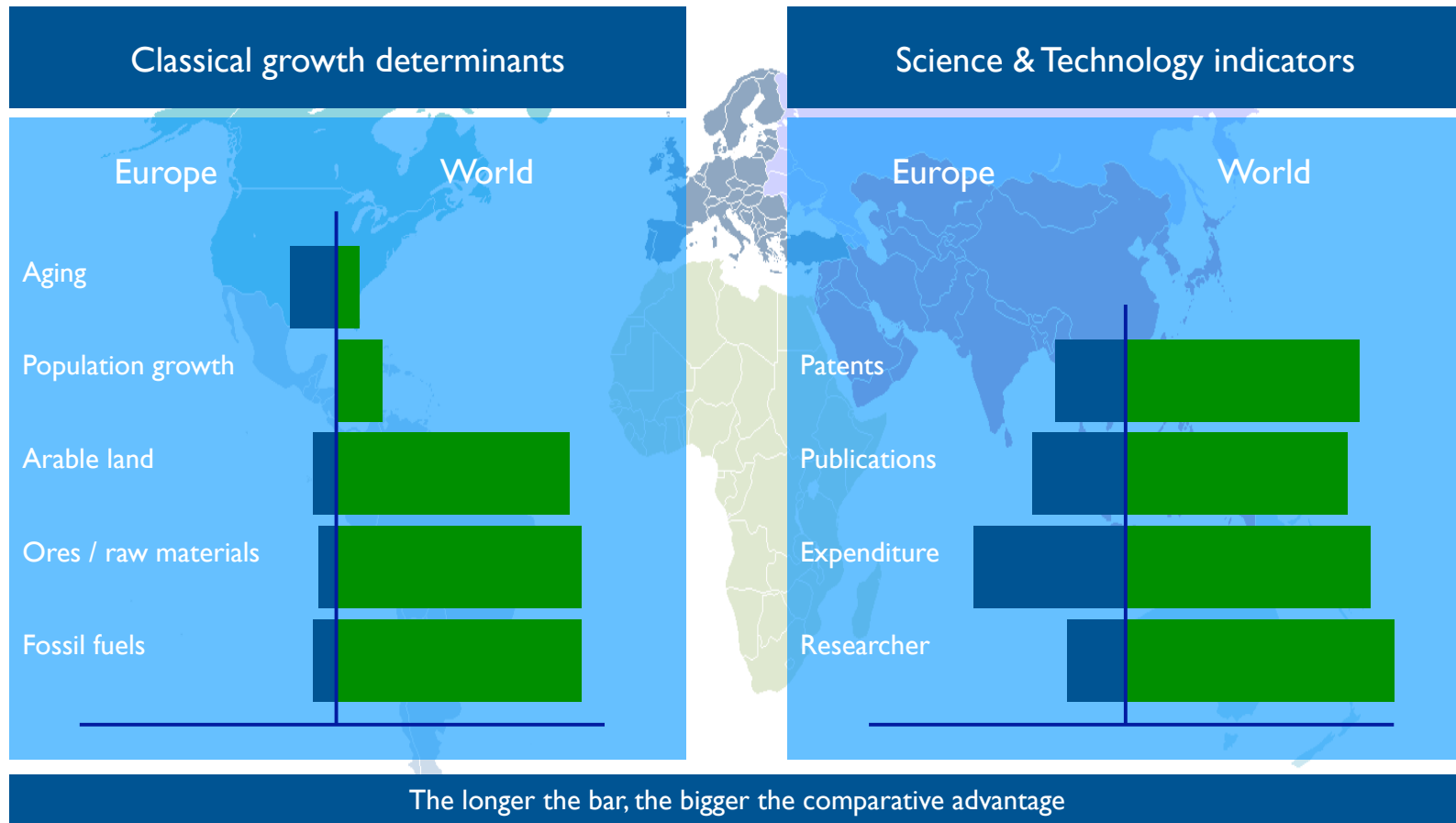


Responding to the Asian challenge

Science is key, engineers are the locksmith

Dirk Jan van den Berg
Delft University of Technology
Innovation Lecture Program
Ministry of Economic Affairs, Agriculture and Innovation
7th of December 2010
De Ridderzaal, The Hague

Comparative advantage of Europe in the world



Science & Technology key drivers for future European growth

The vision of China

“The history of modernization is in essence a history of scientific and technological progress. Scientific discovery and technological innovations have brought about new civilizations, modern industries, and the rise and fall of nations... I firmly believe that science is the ultimate revolution”

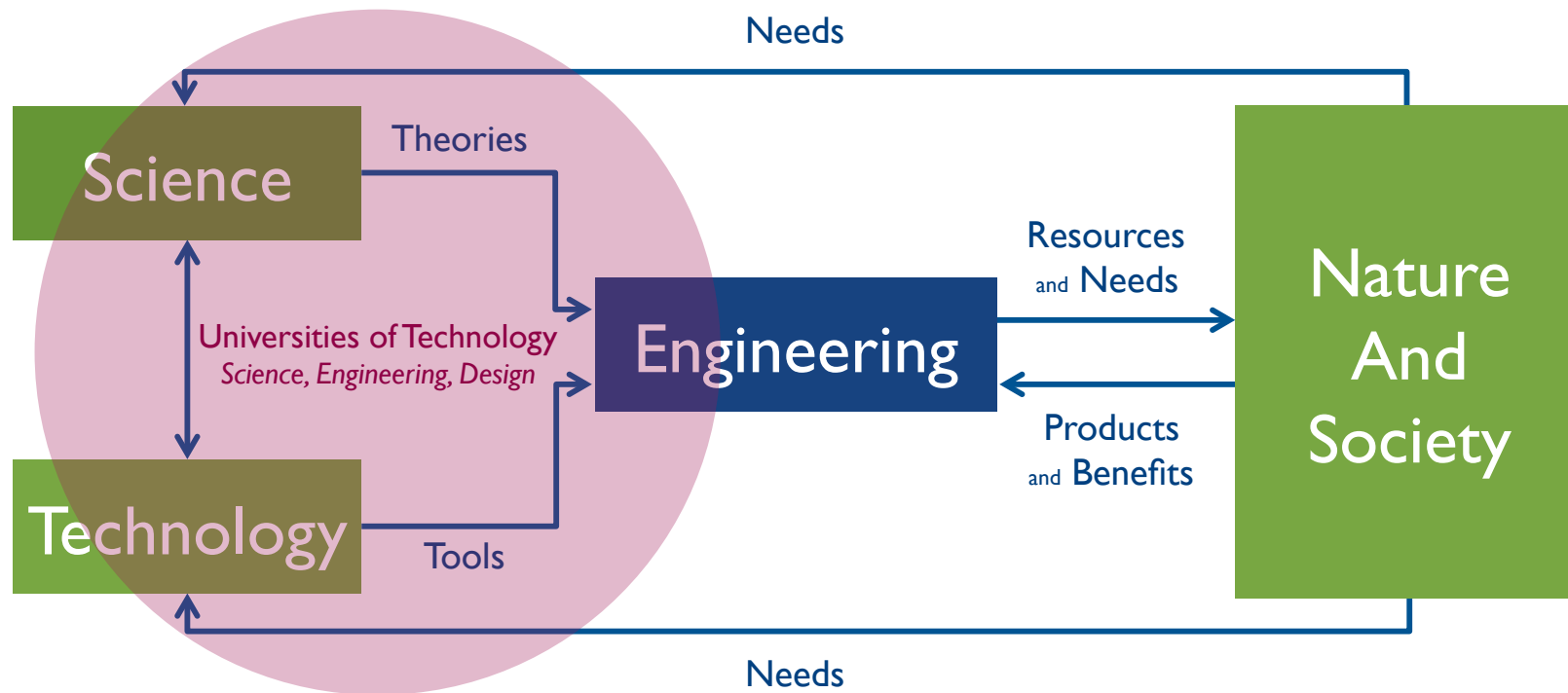
Wen Jiabao, Premier, People's Republic of China

The Challenge, the way the US sees it

“Second only to a weapon of mass destruction detonating in an American city, we can think of nothing more dangerous than a failure to manage properly science, technology and education for the common good...”

United States Commission on National Security for the 21st Century, 2001

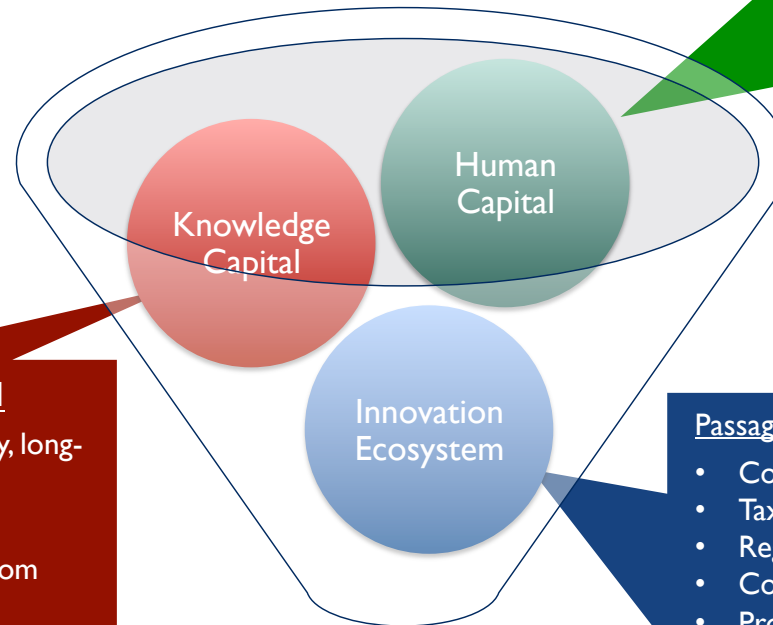
What is engineering?



UNESCO, 2010

Key ingredients for innovation to succeed

“Rising above the gathering storm” Committee, Washington, USA, 2010



Capable people are the core asset

- Need for ambitious higher education in the science and engineering fields
- Replacement of aging cohorts of engineers and scientists will prove to be difficult
- Increased reliance on foreign born scientist and engineers
- Need for talent friendly immigration policies
- Encouragement of young people to have a future in engineering / science

Newly acquired knowledge critical

- Basic science: essential, though risky, long-term, of uncertain applicability and increasingly expensive
- Corporate research moves away from fundamental research, key role for research universities
- Research is rapidly globalizing activity: co-authored research, global approach to research by companies and universities
- Labs, facilities, tools essential: more precise measurements, purer/better materials and more effective manipulation of data

Passage of ideas into products and markets

- Cost of labor / cost of benefits
- Tax policy
- Regulatory barriers
- Cost of / Availability of capital
- Protection of intellectual capital
- Transparent research structure, universities (of technology) and research institutes
- Visa policy
- Availability of markets
- Market growth potential
- Availability of transportation / communication
- Stability / Predictability of government

Visionary leadership? What to do?

- Have confidence in Europe's strong poll position
- Invest heavily in Science and Technology
- Embrace your engineers
- Create the environment to make innovation happen