Managing collaborative working

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Overview

- Context
- How can international consortia of universities manage multilateral research?
- What about multilateral cross-disciplinary collaboration?
- How can different research practices come together to find solutions to the global grand challenges?
- What is the role of industry and national governments?
- Opportunities

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Context

UK Government - Eight great technologies

- The big data revolution and energy-efficient computing
- Satellites and commercial applications of space
- Robotics and autonomous systems
- Life sciences, genomics and synthetic biology
- Regenerative medicine
- Agri-science
- Advanced materials and nano-technology
- Energy and its storage

But no-one can do it all …

How can international consortia of universities manage multilateral research?

- Recognise the value of international collaboration
- Understand their own strengths
- Create consortia that are complementary in expertise
- Use resources locally to incentivise academics and create the right environment to develop international collaborations
- Have good communication routes both internally and between partners;
- Build on strategic partnerships in other areas such as teaching and industry engagement, where appropriate
- Have the necessary research support infrastructure to support academics.

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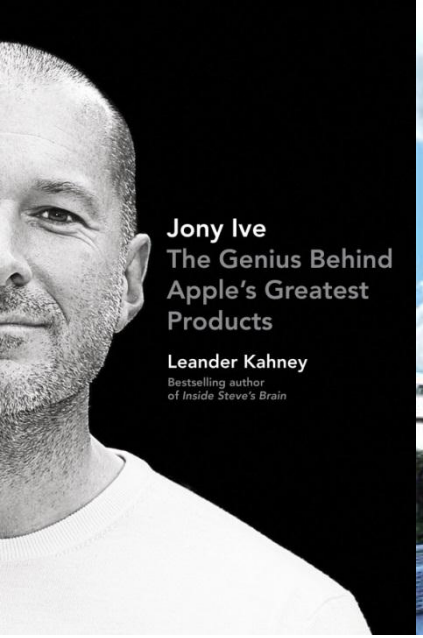

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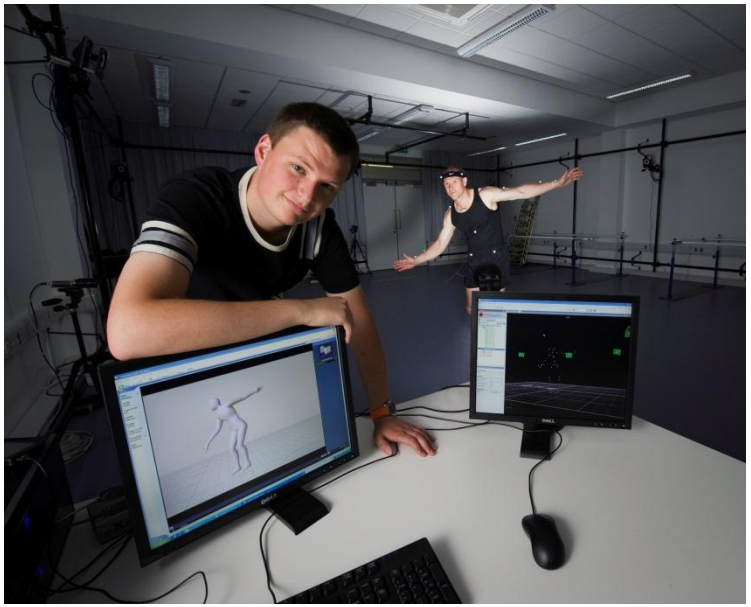
Multilateral cross-disciplinary collaboration

Cross-disciplinary collaboration is challenging,
But the rewards are worth it……..

- Greatest innovation occurs at discipline boundaries
- Big challenges can be addressed
- A variety of funding sources may be available
- Different international perspectives create major added value.



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How can different research practices come together to find solutions to the global grand challenges?

- Understanding the global challenges the institution is equipped to address;
- Incentivise cross-disciplinarity;
- Cross-disciplinary funding for projects and studentships;
- Appoint staff at discipline boundaries…….

……and apply the skills/expertise/people/culture developed in this way when working internationally.

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Design led Ambient, active and inactive textile technology

Future ways of Connected and Creative Living

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What is the role of industry and national governments?

➢ Principles for governments to create the right environment?

The UK picture

- Fund excellence wherever it occurs
- Dual support system – a balance of infrastructure and projects
- Research funding channelled through universities
- Industry as co-investor/co-creator
- Balancing excellence and impact
- Peer Review is key, but informed by metrics
- REF (previously RAE) is an outstanding performance management system

Global Visual Communication Design BA Hons

➢ Aligning research funding ecosystems?

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Opportunities

- Opportunities for funding and support exist through the following routes

- Funding mechanisms
  - Priority research areas
  - Funding to enhance international linkages
  - Match-funding concordat and alignment machinery

- Government funding schemes
  - British Council mechanisms – Newton Fund is a multi-country research fund with two open calls for Indonesian partnerships.

- International schemes
  - Erasmus + scheme is now funding for:
    - Capacity Building
    - Knowledge Alliances
    - Strategic Partnerships
  - Horizon 2020 includes non-EU countries as cooperation partners.

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Opportunities

- MOUs – to create ‘safe space’ – and full-service strategic partnerships
- ‘smart selection’: discipline level strength more important than whole-institution strength
- Work needed on scalable approaches, and the design of managed programmes
- Indonesia / UK opportunities are extensive and the UK is a very rich source of collaborative partners

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Collaboration and Partnership

NEWS & PICTURES north

Dated: 07/09/2014

Words to follow from Nova International

The Red Arrows fly overhead as thousands of runners make their way across the iconic Tyne Bridge while taking part in the Bupa Great North Run 2014, the worlds greatest half marathon with tens of thousands of people running the 13.1 miles from Newcastle to South Shields this morning (Sun).

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Ends

Context

Research across borders

There are many examples of the importance of research developing in an international setting. For example, the motion of the Earth and planets around the Sun has been understood for centuries, but required an international effort, including the contributions of:

- Copernicus – the Pole who originally proposed the theory;
- Galileo – the Italian who invented the telescope and provided observational evidence;
- Newton – the Englishman who developed the Laws of motion that explained the theory and observations.

Of course, the progress of research in the 15th and 16th centuries was slower than is now, and none of these great minds collaborated as their lives were separated by both distance and time.

Context

Research across borders

In 1919 Sir Arthur Eddington (an Englishman) provided the experimental evidence that proved the German Albert Einstein's theory of general relativity

During the course of the 20th century, reliable postal, telephone systems, the arrival of cheap and reliable travel and the development of technologies such as the internet and email have allowed researchers to collaborate internationally on a scale not known in previous eras.

Context

Research across borders: the 21st century

While the growth of technology continues to assist research collaboration across the globe, there is an important reason why such collaborations should be promoted.

The challenges that face us are global in scale, require multidisciplinary research collaborations that bring scientists and non-scientists together and require an international perspective if they are to be addressed properly.

Examples are

- Climate change
- Food security
- Global security
- Social justice and poverty

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Environmental Research

- Tropical ecology: monitoring and modelling vegetation change in rain forests in Sulawesi, Indonesia, and in Central and South America, using remote sensing, and ground based studies with local and international networks (Dr Bruce Carlisle, Dr Bronwen Whitney).

- Mountain glaciology and water supply: work on glacier melt on ice-covered volcanoes in southern Chile in collaboration with Centro de Estudios Científicos, Chile (Dr Ben Brock).

- Ice sheets and sea level change: a number of current collaborative projects on on the history of Antarctic ice sheets and long term climate change in collaboration with researchers at United States Geological Survey and the University of New South Wales, Australia (Professor Ulrich Salzmann, Professor John Woodward and Dr Stuart Dunning).

Facilitating interdisciplinary research

(University Alliance Science and Innovation Survey)

Appeal to industry

- Connectivity and expertise through people
- University collaborations add value
- Easy access to the all knowledge base
- Incentivise multidisciplinary approaches
- Funding for joined-up large scale research

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An example … the HEFCE Catalyst Fund

- The fund commits up to £45 million in annual funding across research, teaching and knowledge exchange in Higher Education
- It aims to
  - Drive innovation
  - Enhance excellence and efficiency
  - Support innovative solutions at a time of changes to funding and regulation.
- Projects are expected to be collaborative and bring in partners from business and industry, universities and colleges, and other public agencies.

What is the role of industry and national governments?

The Belmont Forum

has developed a funders' vision for the priority knowledge and capabilities derived from environmental research that society needs, and the underpinning research challenges over the next decade to deliver them. These are described in a White Paper and encapsulated as the *'Belmont Challenge*':

> to deliver knowledge needed for action to avoid and adapt to detrimental environmental change including extreme hazardous events.

To meet this challenge, the Belmont Forum agreed to develop collaborative research actions (CRAs). The principles of the CRAs are that they will:

> address the Belmont Challenge priorities (ie societally relevant global environmental change challenges);
>
> lever Belmont Forum members' existing investments through international added value;
>
> bring together new partnerships of natural scientists, social scientists and users.

UK co-authorship in East Asia compared to other English speaking countries 2011

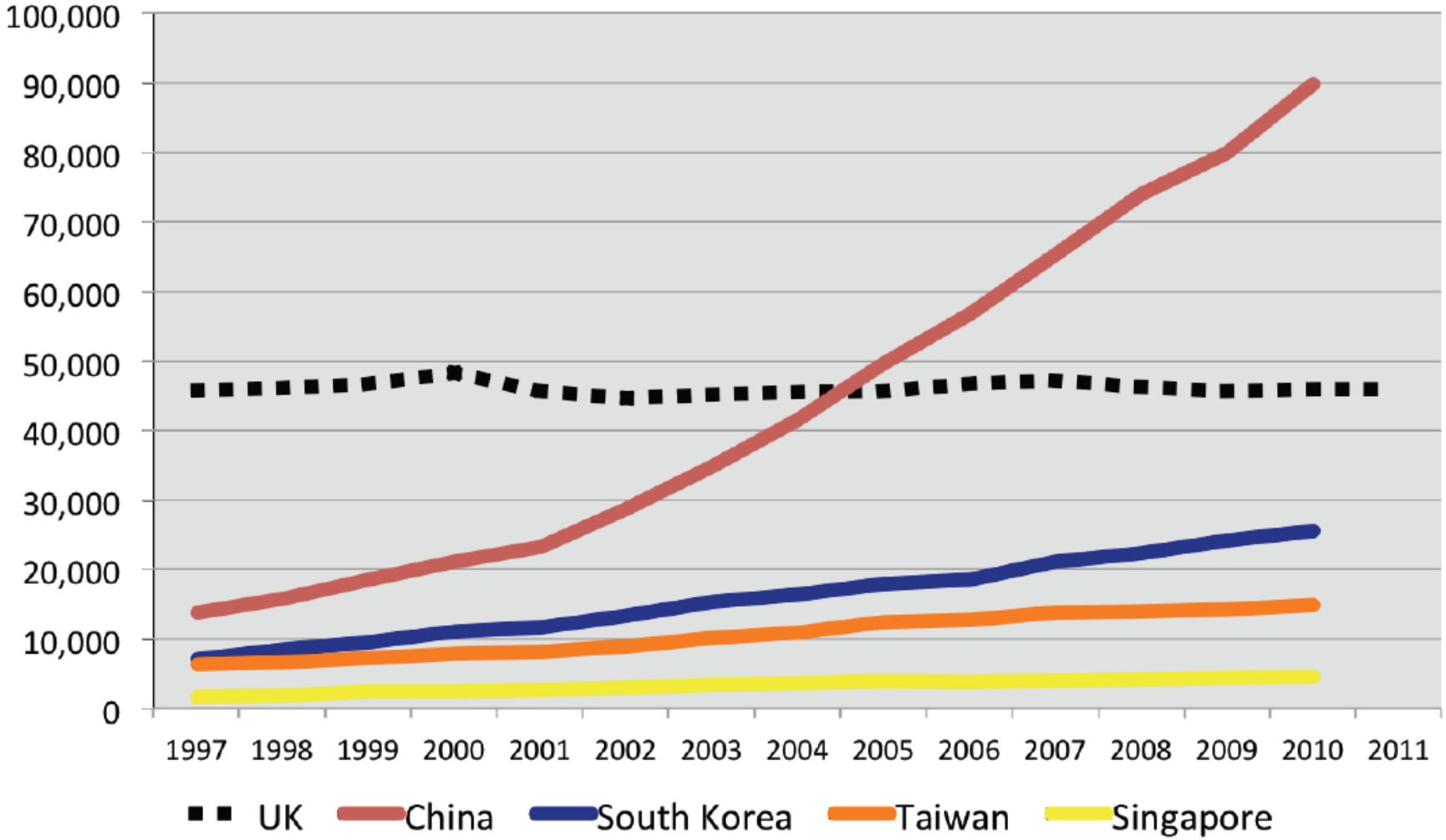
NSF data 2014

	UK	USA	Canada	Australia
China	0.56	1.10	0.74	1.11
South Korea	0.47	1.25	0.54	0.54
Taiwan	0.71	1.22	0.88	1.14
Singapore	0.67	0.74	0.45	1.48

Source: Simon Marginson, Institute of London 2014

Fast growing Post-Confucian systems journal papers per year, 1997-2011

Source: US National Science Foundation data, 2014



Source Simon Marginson, Institute of London 2014

Pattern of UK Research Collaboration

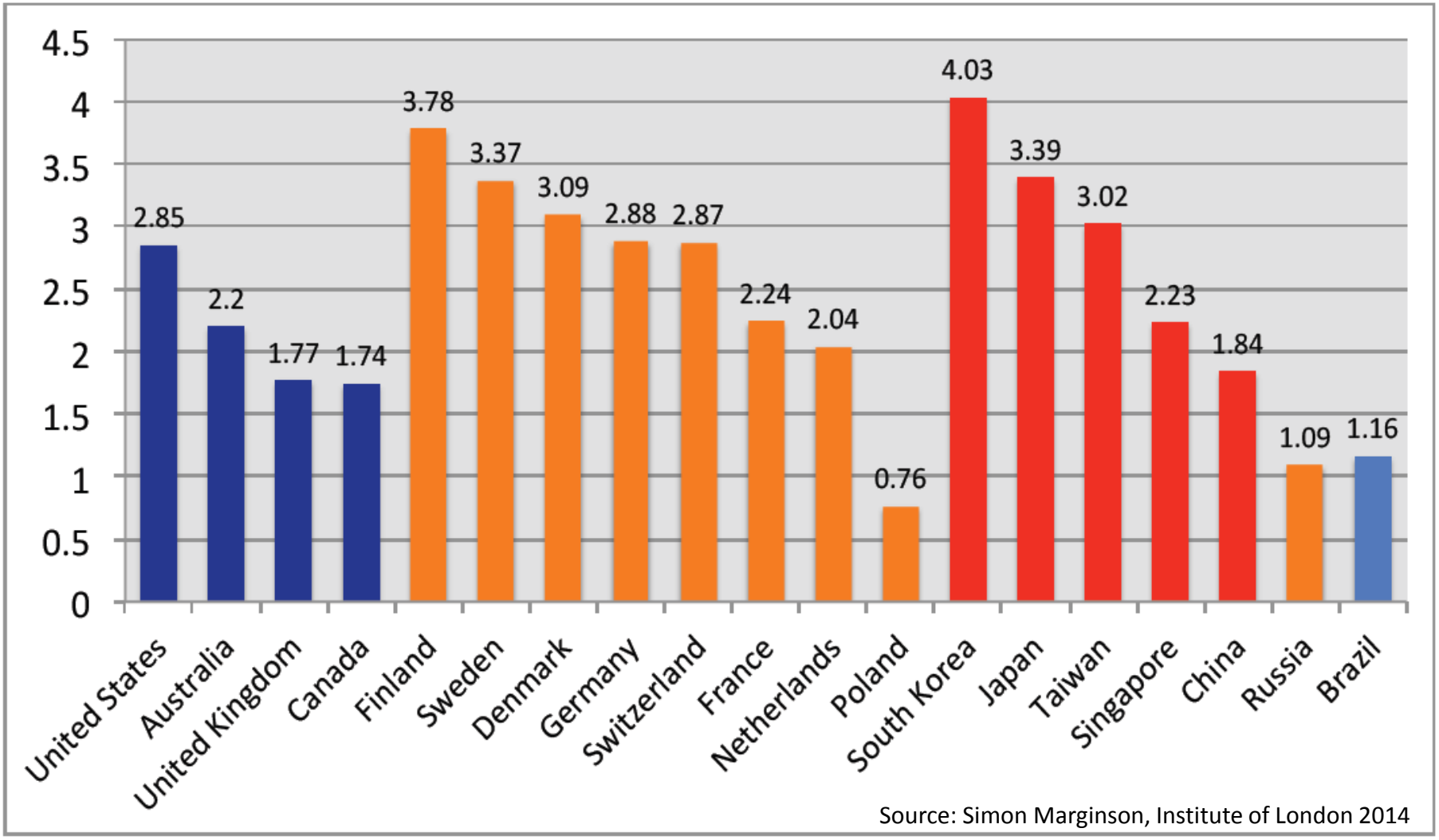
High and Low collaborations by UK researchers (1.00=expected rate)

High rates of collaboration		Low rates of collaboration	
Ireland	2.17	South Korea	0.47
Greece	1.66	China	0.56
South Africa	1.49	Saudi Arabia	0.58
Netherlands	1.45	Japan	0.62
Denmark	1.40	Iran	0.66
Hungary	1.38	Singapore	0.67
Norway	1.36	India	0.68
New Zealand	1.30	Taiwan	0.71
Finland	1.28	Argentina	0.73
Australia	1.24	Egypt	0.74
Sweden	1.23	United States	0.77
Italy	1.22	Mexico	0.78
Poland	1.20	Canada	0.85

Source: Simon Marginson, Institute of London 2014

R&D as a proportion of GDP, 2010

Selected countries, OECD data for 2013



Source: Simon Marginson, Institute of London 2014