

GOING GLOBAL 2017
24 MAY, LONDON

THE EASTWARD INNOVATION SHIFT: ENGAGING WITH CHINA'S TRIPLE HELIX

ADVICE FROM A PANEL OF EXPERTS

BACKGROUND

From 22 to 24 May, the British Council's Going Global 2017 conference in London brought together more than 900 government ministers, policy makers, university leaders, and academics from around the world to debate the opportunities and challenges for international higher education in the 21st century.

The British Council's China Education Team hosted a session on the topic 'The Eastward Innovation Shift: China's Triple Helix', joined by the following panel of experts:

- Professor Alice Gast – President of Imperial College London, UK (Chair)
- Patrick Horgan – Regional Director (North East Asia) at Rolls Royce
- Michael Hill-King – Collaboration Director at Huawei Technologies UK
- Matt Durnin – Regional Head of Research and Consultancy (East Asia) at the British Council

For more information about the session, please visit:

www.britishcouncil.org/going-global/programme/sessions/eastward-innovation-shift-china%E2%80%99s-triple

FOREWORD

China is the land of opportunity for many global companies that have formed successful and enduring partnerships and collaborations with Chinese-owned enterprises since the country opened up to private and foreign investment. But economists are sensing a wind of change as China faces the challenges of an ageing population and a slowing economy, and the need to move into the next stage of its development.

Universities are central to the Chinese government's innovation policies and it has injected huge resources into improving the quality of teaching and research, and raising the number of Chinese research institutions in the global top 100. With this in mind, the Chinese government is actively encouraging its universities to collaborate with leading institutions worldwide. As a result, economic and technological progress is being pursued through a 'triple helix' of collaboration between government, industry, and universities.

But where do foreign higher education institutions fit in? And what does this mean for Chinese students seeking higher education abroad, and the collaborations already underway between the UK and China? What can we learn from industry experts?

These and many other questions were explored in the session and are addressed in this report.

CHINA'S ECONOMY

Fast Progress

Matt Durnin introduced the session with a summary of China's progress over the last two decades. Just 20 years ago, in 1996, the world's R&D activities were firmly rooted in the big four economies, which accounted for half of R&D output – the US, the UK, Germany, and Japan. By 2014, the big four's expenditure on research had gone down from two thirds to 43 per cent, while China's had risen from 2 per cent to 20 per cent (see figure 1). China is now second only to the US on research expenditure and spends five times the UK figure, according to the UNESCO. In terms of patent applications, China is now the world leader (see figure 2).

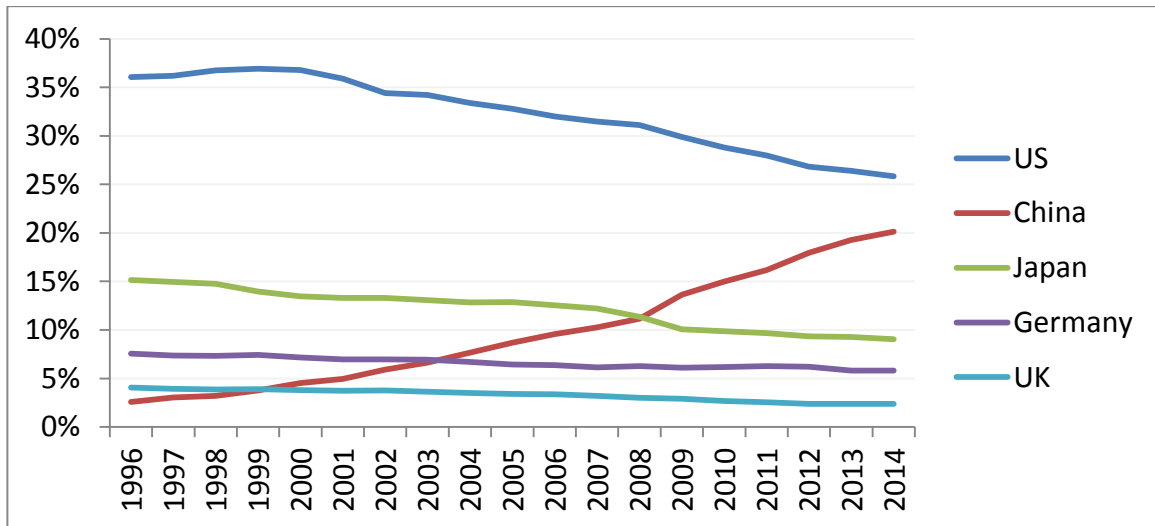


Fig. 1: Share of global gross expenditure on R&D in US\$, PPP (Source: UNESCO)

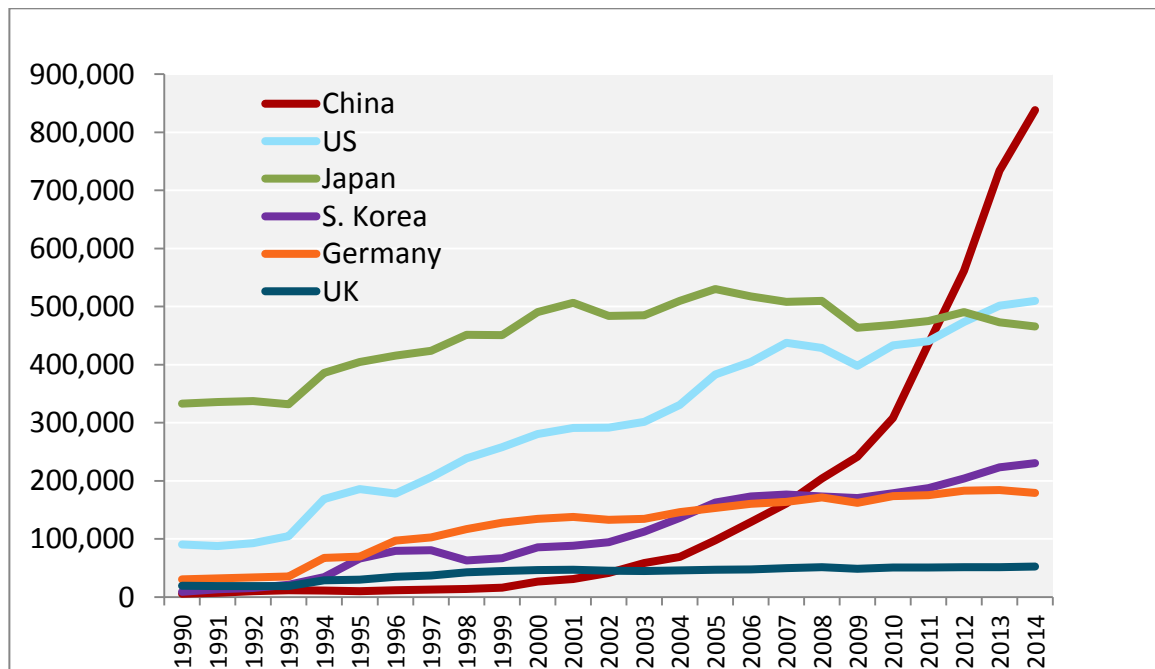


Fig. 2: Total patent applications from applicants from the given country, at home and abroad (Source: WIPO)

When considering where the economic transformation is taking place, statistics for the whole of China can be very misleading, warned Patrick Horgan. For example, national aggregate data suggests that China's service sector surpassed manufacturing for the first time in 2013, in reality, however, the service industry is highly developed in some parts of China and hardly features in others. *"China is both a developed economy and a developing economy and it is both of those things at scale,"* he said. This means that companies or universities wanting to engage in or collaborate with China need to do their homework. *"Only by getting down into the detail of your specific area of activity and the specific geographical area and the partner you are addressing, can you really start to make intelligent statements about how you should engage,"* he added.

Next Steps

Patrick Horgan said China's transformation has been remarkable, but it is important to remember that the country had some inherent advantages. *"It started from a position of backwardness, but with some very wealthy Chinese communities on its periphery in Taiwan and Hong Kong. Private capital from those countries played a significant role in the development process. It also has advantages in terms of scale and the strength of the unitary state. The model has been to liberalise, experiment with private capital, experiment with foreign capital, manufacture for export, generate a surplus, invest that surplus in infrastructure, expand and repeat."*

"This worked well until a few years ago, but it is still the case that about 48 per cent of all China's demand comes from state-led investment through the state banking system into state-owned enterprises with ever higher levels of leverage and ever lower levels of productivity and efficiency. That is not sustainable. There has to be some level of system change which will need assistance and political courage."

Matt Durnin said growth has been fast, but the real test will come if the predicted slowdown and financial crisis materialise in the next 18 months. How China weathers such a crisis will give a lot of indications about what its future development path will look like.

When President Xi Jinping visited the UK in 2015, he referred to mass entrepreneurship and innovation, recalled Professor Gast. *"It struck me as something really incredible from the top level of government and I think it will need another helix involving money, people, and environment. It needs people willing to take a risk intellectually, funders willing to take a risk intellectually, and an environment where they can do that and collaborate and bring in the talent they need. Already, over the last decade, we have gone from working occasionally with Chinese collaborators to an equal exchange of ideas and knowledge,"* she said.

GUIDELINES FOR ENGAGEMENT

Policy is Key

The panel stressed the importance of the Chinese government's development plans. Policy is important everywhere, but particularly in China, where it leads the way, said Matt Durnin. The starting points are the 13th Five-Year Plan, which outlines the priority research areas for government funding, and the Made in China 2020 policy, a government initiative to improve the manufacturing sector.

There is an assumption that when countries develop, they move out of manufacturing. But that appears untrue in China, which has the scale, resources, and technology to maintain its manufacturing base. While it is important to understand centrally driven policy in terms of industrial and regional development in China, it should not be assumed that the policy objectives are always being met, explained Matt Durnin.

Patrick Horgan agreed, commenting: “Just because something has been mandated from the top or centre, it doesn’t necessarily mean it will be a success.”

Think Local

China is a huge and very diverse country, geographically, socially, and economically, and that makes it very important for foreign companies and universities to look carefully at local factors, the panel agreed. “We have the national context, but it always eventually plays out locally,” said Matt Durnin. He gave the example of one of the poorest provinces, Guizhou (see figures 3 and 4), that had been singled out to become a big data hub, and large international tech firms were now moving in to take advantage of preferential rates, but it was uncertain whether there would be the infrastructure to support them. China’s large and uncoordinated number of science and technology parks vary greatly in how they are formed and governed, and the incentives they offer. “In dealing with these parks you should decide whether you can connect with the activities going on or whether you will remain at the periphery of the park,” he said.



Fig. 3: Map of China with Guizhou province highlighted (Source: Wikimedia Commons)

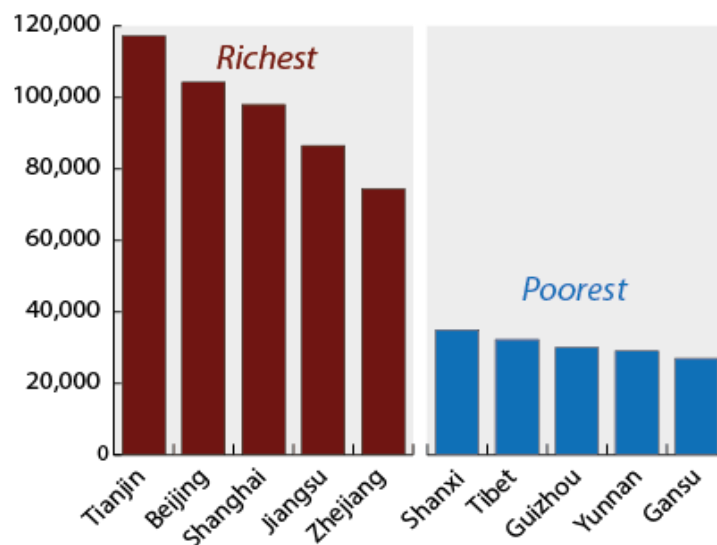


Fig. 4: Provincial GDP per capita in RMB, 2015 (Source: EIU Access China)

While some universities, such as Imperial College London, have very productive high-level partnerships with industry, a lot of institutions are working at the small- and medium-sized industry level, which is challenging as they are focused very much on incremental innovations to their products. *“It is a two speed economy in a lot of ways and that is the challenge,”* said Matt Durnin.

Patrick Horgan pointed out that sometimes the location of industrial and technological capability had been centrally directed for other than economic reasons, such as the location of aerospace facilities at a time of geo-political tension with the Soviet Union, when managers of the facilities had to be shipped in from elsewhere. A product of this approach is that there tends to be a lot of waste, he said.

In the 13th Five-Year Plan, for example, there are 75 priority technologies and six strategic emerging industries containing at least 50 specific technologies. Likewise, Made in China 2025, contains a series of targets for Chinese companies to acquire market share in designated technology sectors domestically and internationally. *“There will be a lot of spending directed to achieve these results and it’s like the venture capital process – if you throw a lot of money at things, some of it will be successful. But I’m afraid there will also be a lot of waste,”* said Patrick Horgan.

Find the Right Match

China has 2,400 universities and colleges, but finding the right partner can be a challenge and cannot be done at long distance, the panel agreed. Professor Gast said that the approaches up until now had tended to be rather disorganised: usually based around relationships between individual academics and their informal networks. She asked the panel whether UK institutions should be approaching collaboration in a more formal way.

Matt Durnin said the top Chinese institutions could be choosy and UK universities might need to scale their ambitions and perhaps consider working with other institutions previously conceived as competitors. *“This is China’s moment and China has a lot of suitors. Any of its large, successful universities is going to have a lot of suitors from across the world. Important as our institutions may be, it may take more to engage their full attention,”* he said.

Michael Hill-King stressed the importance of finding a good match for your strengths. *“Should you be going out to collaborate with Tsinghua, Shanghai Jiao Tong, Fudan? If you are Imperial College London, then yes. But if you are a very different kind of organisation, then no,”* he said.

Institutions should try to find a collaboration partner with similar research interests and a similar local geography to ensure a shared understanding of the local environment, and acceptable transport links to the organisation are important too. *“You should find someone who is globally ranked, preferably a little bit higher, to give yourself a challenge and pull yourself up. Then set about finding people in your organisation who will be able to visit, because you have to spend time on the ground, you have to make friends,”* he added.

Michael Hill-King also advised against making a plan to visit ten universities and then returning home to decide which one to build a relationship with. *“It’s not the way it works. You should have some earlier conversations and then spend several days there asking yourself whether you can be friends. It is really important to sit down, have a cup of coffee, have a meal, understand the people, and think about sitting down with them to do joint research projects and publications for the next five or ten years. Find out whether you will be able to leverage funding from the British and Chinese governments, and whether both institutions are interested in linking up with the same industrial partners,”* he added.

THE FUTURE OF INTERNATIONAL STUDENT RECRUITMENT

The modernisation of China's universities is giving Chinese students less incentive to travel abroad for education, but the panel felt that a decline in numbers coming to the UK and other countries was not inevitable.

Michael Hill-King said there was no doubt that the number of Chinese universities entering the top world rankings was on the rise. But he added that it was not just about rankings, but also about the style of education and the skills that Chinese students could acquire through an international education. *"It is in our corporate interests to hire people from Chinese universities who have done a bachelor's degree or a PhD at a British university. We have been very successful in recruiting people back into China after they have completed an excellent education in the UK,"* he said.

The *"guaranteed gravy train of very large numbers of Chinese students going overseas to acquire a trophy foreign education"* will not continue indefinitely, felt Patrick Horgan. As well-funded Chinese institutions rose up the ranks, the inherent advantages of a foreign education would diminish. Nevertheless, individuals had their own aspirations for personal development. *"China has a lot of people and so long as you have a very good and competitive and compelling offer, there is no reason why there should not continue to be large numbers of Chinese students seeking that opportunity overseas,"* he said.

From a corporate perspective, Rolls Royce looked very favourably on people who had *"horizon broadening, eye opening"* overseas study experience, because it *"demonstrated a level of cultural adaptability and ability to attune to different corporate environments."*

CONCLUSION AND RECOMMENDATIONS

Overall, the panel was optimistic about the opportunities for UK universities to engage with Chinese education and industry partners. Bringing the session to a close, Professor Gast said she thought the right approach was for UK higher education to take advantage of the 'triple helix': *"We should find ways we can work together across borders and boundaries, so we are improving the world and society and communities, because that is our mission."*

In summary, recommendations from the panel for UK institutions seeking to engage with China in the field of education included:

- Aligning their work and objectives with China's major policy currents;
- Using China's government strategies and initiatives to frame their work and objectives;
- Connecting at the local level, nurturing relationships across academia, industry, and government;
- Investing time to find a partner with shared long-term interests;
- Matching China's ambitions by building broad-based partnerships.