

*Concise commentary on complex issues from  
different points of view.*

The UKNCC Guest Contributor Programme offers contrasting 'short, sharp reads' for those seeking a fuller exploration of key questions. This November 2021 edition explores the question:

***"How should the UK view China's technological rise?"***

*Authors, alphabetically by surname:*

- *Benjamin Speyer, Founder & CEO, Serica and Chair, Technology & Innovation Committee, British Chamber of Commerce Shanghai*
- *Didi Kirsten Tatlow, Journalist and Author of "China's Quest For Foreign Technology: Beyond Espionage"*

**Contact us at:**

*perspective@ukncc.org*



## *"How should the UK view China's technological rise?"*

### *As a threat: The case for British decoupling from China*

Interview with Didi Kirsten Tatlow  
Journalist And Author of "China's Quest For  
Foreign Technology: Beyond Espionage"

November 2021

*The UK National Committee on China (UKNCC) Guest Contributor Programme highlights contrasting responses, by leading authors, to key questions posed by the UKNCC. The programme is designed to stimulate a deeper exploration of China related issues; drive curiosity; and test conventional wisdom.*

**Contact us at:**

[perspective@ukncc.org](mailto:perspective@ukncc.org)

**Q. China, by using technology transfer to pursue development goals, is following a well-worn path that has been trodden by Korea and Japan amongst others. Why is it so much more concerning to see this technique being used by China?**

The story of the rise of China is Western technology transfer, as has been the case with many Asian countries. However, it is the Communist Party's control of China that makes China different. The domination of Chinese commerce by the Party, and its subordination to the Party's goals is simply different. Remember that Chinese state-owned businesses do not just belong to the state; they are also run by the Party. Above a certain level, all managers in state companies must also be members of the Party, although it is unclear how much of that is ideological zeal, and how much of it is membership by necessity.

Equally, and this has advanced markedly under Xi Jinping, private businesses are called to serve the



motherland, to support its authority and fulfil its goals. Using the United Front Work Department both domestically and internationally, this support is carefully coordinated by the Party. The United Front's role is really important to understand because it coordinates how the Party interacts with external individual and entities, both Chinese and foreign. This interaction is well coordinated and is all about achieving advantage for the Party.

**Q. Is it really that well-coordinated?**

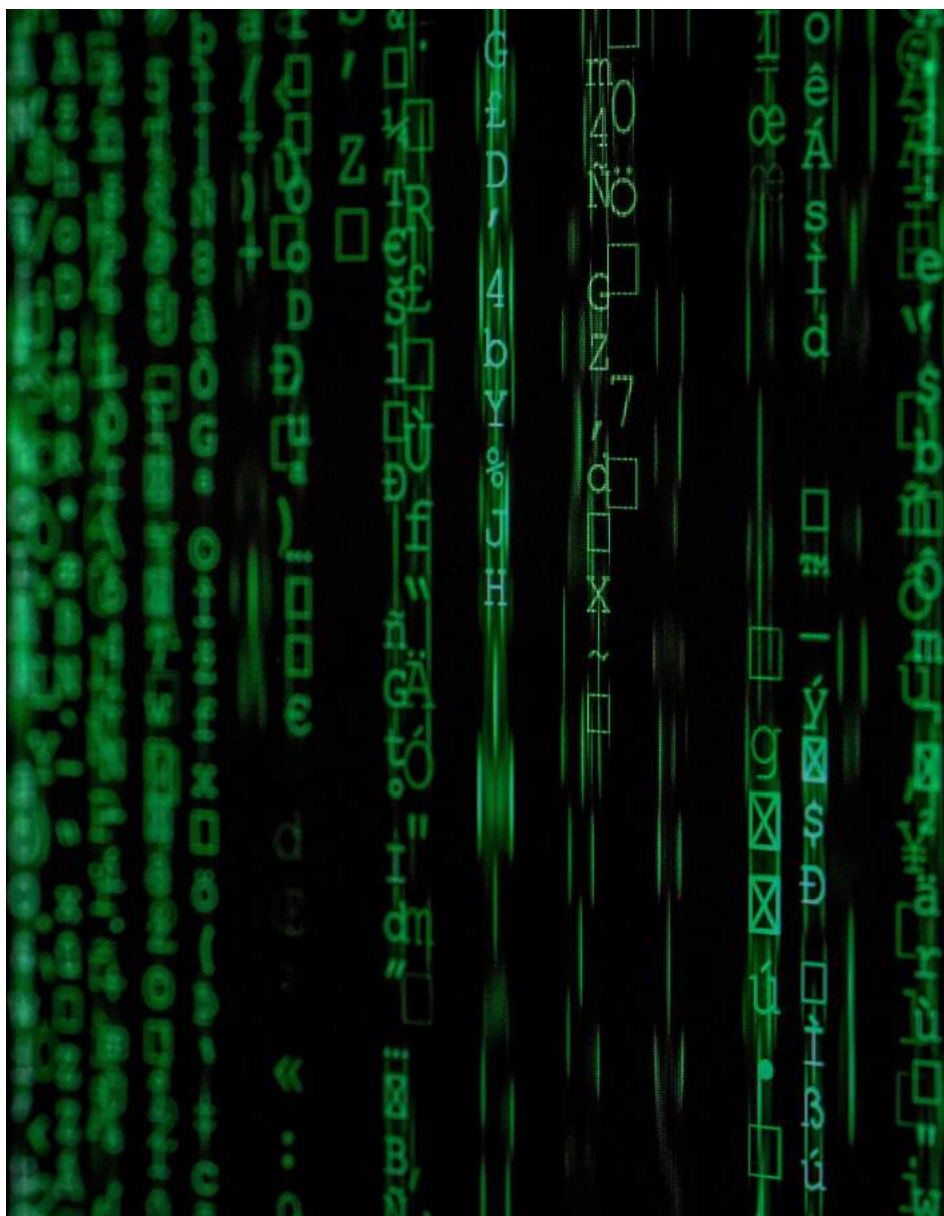
Yes, and it goes back into the early history of the Communist Party's rule in China.

After the revolution Chairman Mao declared a desire to catch up and overtake developed countries in a series of planned advances, but he recognised that in doing that they needed western technology. The work of handling this was given to Zhou Enlai, and in 1956 he asked for a plan for science and technology to be drawn up. When he saw the initial draft, he rejected it saying that acquiring Science and Technology was like fighting a war, and that to win a war you need an intelligence agency. This was where China's consistent efforts in technology transfer began, and what set the tone for how they have done it.

**Q. Can you give an example of this?**

One example that springs to mind is the company Nuctech. Back in the 1990s, when globalisation was starting, container shipping presented a new challenges of how to scan goods as they were being processed through ports. To solve this problem European companies came up with scanners using radiation technology. Scientists at Tsinghua University essentially reverse-engineered these scanners, and this acquired technology was commercialised with the formation of Nuctech in 1997. Today it is one of the top security firms in its area in the world, and security is obviously a sensitive area. What is crucial to understand here is that this was not just one act of acquisition, legal or otherwise, but a series of coordinated efforts from acquisition to commercialisation to market dominance, with the involvement of the Chinese state. Once the technology had been acquired and the company founded, it was given an advantaged position in Chinese ports, where foreign companies were effectively barred from supplying their scanners. As Nuctech grew, various related Chinese state entities bought stakes in it. And as it grew overseas, Nuctech undercut any competition and has faced dumping charges internationally.

And now, this is also a case of industry supporting the state, as well as the other way round. There is increasing evidence that Nuctech is now using its position to harvest data that is being put at the service of the Chinese government and the Party. This is not a one-off of course. There have been many other examples.





In terms of technology transfer, similar things have happened with the COMAC 919 civilian aircraft that China is developing today.

**Q. What you seem to be suggesting is that these efforts are coordinated from the centre and involve large parts of the Chinese state. Can you expand on that?**

It is more than that. This not just the state; society is involved in these efforts in multiple ways. People have no choice – it is how the system works. Leaving aside actual espionage for a minute, you can see this in the large numbers of overseas Chinese who are being encouraged with generous terms and reimbursement to come back to China with their knowledge acquired overseas and “give back to the motherland”. Often this targets people who have acquired particular education or skills in the industrialized nations. This is of course related to the well-documented work of the United Front and other parts of the party-state in seeking to corral overseas Chinese into supporting the motherland. Chinese capital is also at work buying up patents, investing in overseas companies developing interesting technology, and more.

Often this may be with the participation of “guided funds” which are connected to the state, though they will appear to be private. Often there will be a consortium and a part of it is state-owned – this is the part that can exercise oversight. For example, in the media sector, it is how censorship creeps in overseas.

Historically China has been very good at keeping minute and detailed records with its bureaucratic system. This can be seen in the various institutions that have grown up to harvest technology, such as the Institute of Scientific and Technological Information, or the Defence Science and Technology Centre which coordinate some of these activities. These institutions take their direction from the central government’s 15-year Science and Technology plans.

**Q. In this system of technology acquisition that you describe, how much of China’s activity is legal?**

We identified 32 types of technology transfer.

They fall into the categories of illegal, legal and extra-legal, or grey zone. Whilst illegal transfers are well documented, it is actually the latter two that are probably more important, but less well understood.

Legal transfers, including returning overseas students, joint research agreements and patent mining by Chinese capital funds are all key parts of this systematic plan of technology transfer.

The extra-legal methods used are also notable for their organised and directed characteristics. We can see Chinese scientists being persuaded home with packages and resources not available to them in the west; Chinese attending conferences and taking away more than possibly it was intended for them to do; and then all of this being brought back to China and processed and commercialised through organised institutional channels.

Of course it is very hard for liberal democracies to do anything about this, as it may be that no laws are being broken. But their values are being challenged, given the nature of the Party state that these technology transfers then support.

Essentially technology transfer to China enables state-building, not just the economy and development, and that's a concern. The best example of that is military-civil fusion, but a lot of technologies including surveillance are relevant here.

This issue around liberal values being manipulated is clearly there in China's willingness to tie cooperation on climate with a "better attitude" or a less critical view of other issues by foreign governments. Whilst it is debatable how serious China is in dealing with climate – do they really have a plan? – it does seem that western countries are willing to be very open with China over sharing climate technology.

**Q. So how should countries like the UK respond to this?**

I think there are three answers to this. First of all, we need to wake up to the fact that we are, to a certain extent, "feeding the hand that bites us," to turn the saying around. We are strengthening a political and economic system that is very threatened by democracy and essentially would like to see its demise.

Secondly, we need to find an end to the extraordinary culture of ignorance around China in the West, and by that I mean we need to drop our naivety and really understand what is going on. Thirdly, we need to be clear on what and where we are willing to cooperate; what we are willing to lose through technology transfer, and what we are not.

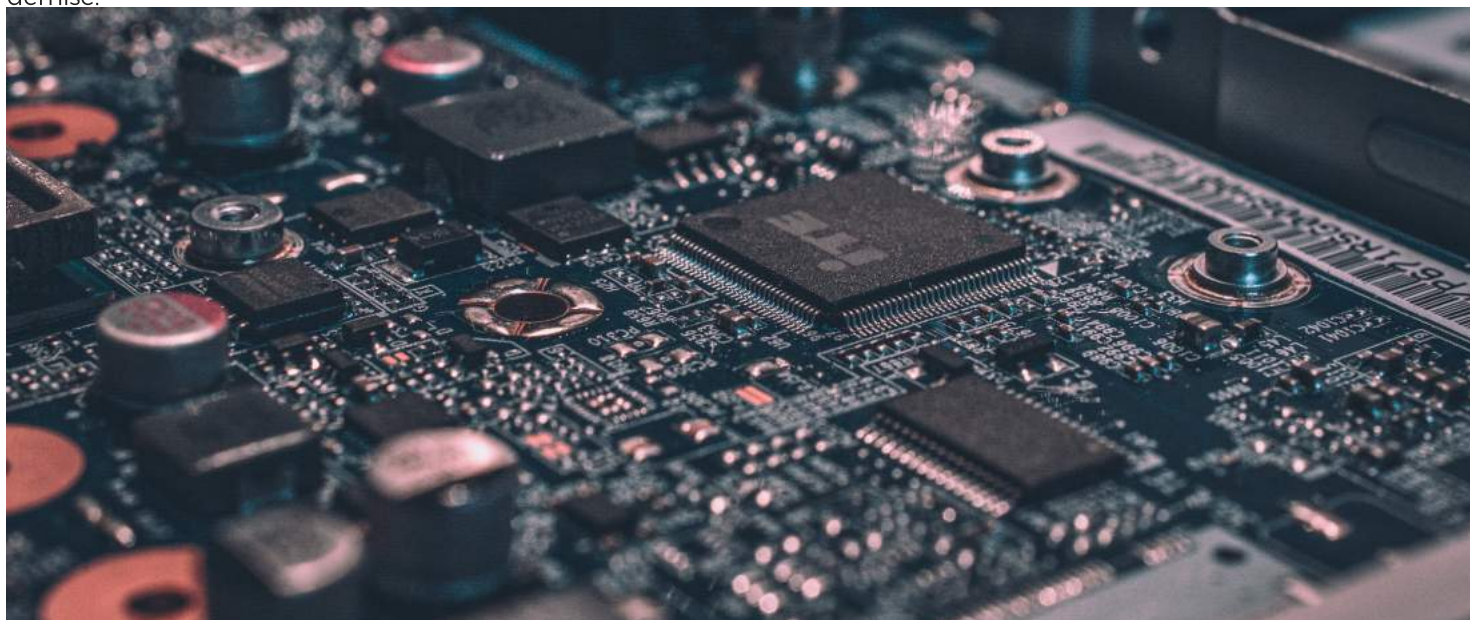
We have to be clear on where we need to be willing to push back. Related to that is, of course, the need for like-minded countries to cooperate in formulating a unified response to the challenge of China and the Communist Party of China. If, from 1992 to 2018, the world was driven by the Clinton mantra "it's the economy, stupid", from now on we should hope that "it's the values, stupid" becomes the rallying cry of democracies. Everyone in the world deserves the habeas corpus protections of a rule of law system, but by feeding high-technology to an ever-more authoritarian state we are not helping those rights, and we are also making them harder to uphold at home as China-style technology

reaches further afield for example via "smart cities," and trade and supply chain dependencies on China grow.

\*\*\*\*\*

China's Quest For Foreign Technology: Beyond Espionage is a book about China's rise as a neo-totalitarian technological power, made possible through access to science and technology crated by countries it now challenges for global leadership." Tatlow and her co-editor, William C. Hannas, write in the introduction to "China's Quest for Foreign Technology: Beyond Espionage".

They conclude that China's massive system of technology transfer "by multiple means", as the official instructions go, is remarkably successful and that we need to look much more critically at how it functions, its growing impact on the world, and how we are supporting it through unquestioned collaborations in our universities, research institutes, and trade.



## About the Author

*Didi Kirsten Tatlow is Senior Fellow at the Asia Program at the German Council on Foreign Relations (DGAP) in Berlin, and Senior Non-Resident Fellow at Sinopsis in Prague. She researches and speaks on the political system of China and its impact on Europe, on technology and worldwide transfer, democratic security, ideology, disinformation, Taiwan, and Hong Kong. In 2018 she began a series, "China-in-Germany," examining the influence and interference activities of the Communist Party of China in Germany. She has co-edited and co-authored a book, "China's Quest for Foreign Technology: Beyond Espionage" (2021).*

*Tatlow was a reporter and columnist in Asia and Europe for 23 years, including at the South China Morning Post, her hometown newspaper, The Associated Press, Die Welt, Deutsche Welle, and, most recently, the New York Times, from 2010 to 2017. She continues to commit journalism, most recently publishing in The Wire China, Newsweek, and The Atlantic. Born and raised in Hong Kong, Tatlow has a bachelor's degree in Chinese and politics from the School of Oriental and African Studies, University of London.*



© DGAP / Zsófia Pölöske

## About the UKNCC

*The UKNCC is designed to help the people of the UK make clear sighted decisions on their engagement with China. In an era of an exponential rise of misinformation and uninformed debate, our aim is to differentiate 'the noise' from robust, evidenced and well constructed information. We highlight high quality commentary and research and support those who are already, or could become Britain's leading talents on China.*

*The current debate on China in the UK is too often dominated by 'hawks' and 'apologists'. This can lead to over simplification and poor decision making.*

*The UKNCC seeks to promote a broader, nuanced debate without entertaining extreme views or perpetuating false silos.*

### Disclaimer:

The views expressed in the UKNCC Guest Contributor Programme are of each author and do not represent those of UKNCC as an organisation or of any individual associated with it.

Copyright © 2021 UK National Committee on China CIC (Company number 13040199) All Rights Reserved.



**Follow UKNCC on Twitter:**  
**@UkCommittee**

**Or LinkedIn at:**  
**[linkedin.com/company/ukcommittee](https://www.linkedin.com/company/ukcommittee)**

## "How should the UK view China's technological rise?"

### As an opportunity: The case for British engagement in China

Author: Benjamin Speyer

Founder & CEO, Serica

Chair, Technology & Innovation Committee,

British Chamber of Commerce Shanghai

November 2021

*The UK National Committee on China (UKNCC) Guest Contributor Programme highlights contrasting responses, by leading authors, to key questions posed by the UKNCC. The programme is designed to stimulate a deeper exploration of China related issues; drive curiosity; and test conventional wisdom.*

**Contact us at:**

[perspective@ukncc.org](mailto:perspective@ukncc.org)

#### From copycat to innovator

For over a decade, China has been moving at breakneck speed as it transitions from an export-driven economy to one driven by domestic consumption, with technology and innovation central to its strategy. Fuelled by highly tech-literate, mostly urban, middle-class consumers, the country has transformed from the world's most prolific copycat into a global innovation powerhouse rivalled only by the United States.

How did a country that ranked 14th in the Global Innovation Index in 2020(7) achieve this feat in such a short period of time? Many argue this is solely because of IP theft, forced technology transfers and various illicit business practices. They argue that, if 'innovative nations' decoupled from China, this would bring its economic and technological growth to a halt. Others say that it is more a national focus on STEM, the growth of its capital markets, and its ability to leapfrog the legacy infrastructure and old technologies that burden more



developed countries such as the UK that has enabled China's unprecedented transformation. In truth, all of these factors tell only part of the story.

Since Deng Xiaoping's reforms in the late eighties, the Chinese people have experienced levels of change unequalled anywhere else on earth. Between 1990 and 2019, they recorded a 32 times increase in GDP per capita - five times the growth of India (6.4) over the same period, and more than ten times that of the USA (2.7)(2). A nation accustomed to rapid changes has internalised agility and flexibility, birthing their biggest global competitive advantage - the ability to adopt, commercialise and evolve new innovations at an unrivalled pace and scale.

From the mass adoption of digital payments (\$67.7 trillion sent in 2020) (3) and e-commerce retail sales (\$2.29 trillion in 2020)(4) to electric car ownership (42% of the world total)(5) and digital healthcare (94% of healthcare professionals use digital health technology or mobile health apps in 2019)(6), China has proven they have no global equal in this regard.

## Why we need China

From climate change and food security to healthcare and poverty alleviation, the world is facing unprecedented challenges that can only be solved by the development and adoption of new technologies at a global scale. China is uniquely poised to drive these solutions. It has twenty percent of the world's population, the second largest economy, and a host of sector-leading Fortune 500 corporations and unicorns.



**36.2% of China's GDP** is attributed to digital economy in 2019. More than Germany's total GDP.<sup>1</sup>



**\$378 billion** spent on R&D in 2018. Second only to the USA.<sup>2</sup>



**68,720** international patents filed in 2020, increasing lead over USA by over **13%**.<sup>3</sup>



Chinese venture capital represents **40%** of the global total. Second only to the USA with **44%**.<sup>4</sup>



**4** of the top **10** cities in the world for venture capital.<sup>5</sup>



**210** unicorns in 2019, just **55** fewer than the USA.<sup>6</sup>

Data: 1. IMF 2. China National Bureau of Statistics 3. WIPO 4. Hurun 5. Statista 6. Crunchbase and Statista

This all forms one undeniable conclusion - solving these issues is impossible without China.

## What opportunities does this present to the UK?

The UK too can and should play a major part in solving these global challenges. Our world-class universities, research institutes, institutional strength and investment landscape have allowed us to continue to drive STEM-based innovations, particularly in the fields of healthcare, cleantech and agtech. While we are still on the front-foot in some of these areas, our lead is shrinking fast. We need to capitalize on our continued advantage within the next five to ten years, before China equals or surpasses us in these fields (as our American cousins once did).

UK innovators have the opportunity to scale, develop and commercialise their technology in the Chinese market before coming back to the West with proven solutions and healthy profits - a potent strategy for global growth that no other market can provide.

Some of the world's leading Fortune 500 companies are already executing strategies that follow this principle, contributing to a major rise in cross-border M&A of 31% to £4.7 billion in 2020(7).

While a fully open-door policy leaves the UK vulnerable, a complete decoupling would certainly damage the UK while causing, at most, a minor annoyance to China. As we have already seen from progress in quantum computing and space exploration, China will inevitably overtake us in the STEM-focused innovations where it currently trails, all while continuing to shape its own market (and that of Asia and other developing regions) as is already the case with e-commerce, fintech, telecoms, energy and infrastructure.

With or without the West, China will succeed - albeit more slowly. But for the UK, losing our ability to shape and drive forward solutions on the global stage would have severe economic and political fallout, potentially setting our country back decades.



## Mitigating challenges and risks

While the UK needs to retain its seat at the table, this should not be seen as providing carte blanche to pursue every opportunity that comes from China. Significant challenges and risks will face every company attempting to engage with the market. Those in sensitive industries, whether in dual-use or politically charged sectors, must carefully examine the regulatory environment of both the UK and China before making any expansion plans - seeking assistance from UK Department of International Trade is an excellent starting point.

These complex regulatory hurdles are further compounded by constantly shifting Sino-UK relations, resulting in an environment that can change (for better or worse) at the drop of a hat. Companies must ask themselves if they can commit the time, patience, resources and energy needed for such an ambitious endeavour.

Those operating in industries without such constraints will still face challenges translating ambition into

success: the Chinese market is vast and fragmented, its political and legal environment opaque, and its business culture alien. Ambitious visions and positive starts often get buried under daily misunderstandings, misaligned interests and poorly structured deals that ultimately result in ventures failing to deliver.

For UK innovators considering expansion into the Chinese market, I would encourage them to remember:

### 1. *Success will not come overnight*

Avoid the all-too-common gold rush mentality and belief in a silver bullet that delivers immediate results by committing time and resources from the get-go.

### 2. *The market moves at a blistering pace*

Prioritise incorporating strategic agility and operational flexibility into the core of your local operations to keep pace and remain competitive.

### 3. *Sectors are dominated by tight-knit 'ecosystem clusters'*

Working with established local partners and law firms, forging strategic alliances, and hiring experienced local management goes a long way towards levelling the playing field.

While there is no clear one-size fits all solution, these principles can help innovators adapt their approach to the needs, pace, and intensity of this unique market. The allure of China is clear but the path to success is fraught with risks and challenges. This creates a tendency to over or underestimate the difficulty of achieving success there. Companies must adopt measured and intelligent strategies so they can assess the opportunities and risks to them with confidence.

### **The technology sector is not a monolith**

Whether discussing innovation, economic (and social) impact, regulation, or investment, Parliament and the media often take a myopic view, grouping the technology sector into a single monolithic block. When viewing Sino-UK relations specifically, sensitive sectors with dual-use applications like bleeding-edge AI and advanced robotics are being discussed in the same breath as softer sectors such as healthcare and gaming. There is an implicit thinking that all of 'tech' must be equivalent, and a single approach with China can be unilaterally applied. This, especially when coupled with zero-sum game rhetoric, means we are hampering our own ability to make well-informed, strategic decisions about where we cooperate, where we compete and where we decouple.



## Our relations with China are not binary

The recent UK National Security & Investment Act has provided much needed clarity and laid solid groundwork. However, these discussions need guidance from a more complete, nuanced picture of global innovation (and the respective roles of the UK and China in it) so that we can move from simplistic binary discussions towards more balanced and impactful debates.

Overcoming the key challenges of our time cannot be achieved without Chinese innovation, capital, and the power of their market. The UK can be a key partner in solving these problems (enhancing our own economy, innovation capabilities and soft power), but has only a small window of opportunity to stake its claim. I believe the UK sits in an ideal position to be a leading voice and contributor to the global technology sector, but to realise this we must take a more pragmatic and proactive approach.

### References:

- (1)[https://www.wipo.int/global\\_innovation\\_index/en/2020/](https://www.wipo.int/global_innovation_index/en/2020/)
- (2)<https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG>
- (3)<https://www.statista.com/statistics/1060702/china-mobile-payment-transaction-value/>
- (4)<https://www.emarketer.com/content/global-historic-first-ecommerce-china-will-account-more-than-50-of-retail-sales>
- (5)<https://www.iea.org/reports/global-ev-outlook-2020>
- (6)[https://images.philips.com/is/content/PhilipsConsumer/Campaigns/CA20162504\\_Philips\\_Newscenter/Philips\\_Future\\_Health\\_Index\\_2019\\_report\\_transforming\\_healthcare\\_experiences.pdf](https://images.philips.com/is/content/PhilipsConsumer/Campaigns/CA20162504_Philips_Newscenter/Philips_Future_Health_Index_2019_report_transforming_healthcare_experiences.pdf)
- (7)<https://www.grantthornton.co.uk/globalassets/1.-member-firms/united-kingdom/pdf/publication/2021/english-touying-tracker.pdf>

## About the Author

*Benjamin Speyer is the Founder and CEO of Serica, a global technology and financial advisory firm. An expert in cross-border M&A, joint ventures and capital investments across healthcare, clean energy, mobility and digital commerce sectors, he is also the Chair of the Technology & Innovation Committee of the British Chamber of Commerce Shanghai and the President of the Hangzhou International Entrepreneur Association.*



## About the UKNCC

*The UKNCC is designed to help the people of the UK make clear sighted decisions on their engagement with China. In an era of an exponential rise of misinformation and uninformed debate, our aim is to differentiate 'the noise' from robust, evidenced and well constructed information. We highlight high quality commentary and research and support those who are already, or could become Britain's leading talents on China.*

*The current debate on China in the UK is too often dominated by 'hawks' and 'apologists'. This can lead to over simplification and poor decision making.*

*The UKNCC seeks to promote a broader, nuanced debate without entertaining extreme views or perpetuating false silos.*

### Disclaimer:

The views expressed in the UKNCC Guest Contributor Programme are of each author and do not represent those of UKNCC as an organisation or of any individual associated with it.

Copyright © 2021 UK National Committee on China CIC (Company number 13040199) All Rights Reserved.



**Follow UKNCC on Twitter:**  
**@UkCommittee**

**Or LinkedIn at:**  
**[linkedin.com/company/ukcommittee](https://www.linkedin.com/company/ukcommittee)**

Executive:

Frank Slevin (Chairman)

Ollie Shiell (CEO)

Andrew Caine

David Percival

Charlie Du Cane

Advisory Board:

Sir Malcolm Rifkind KCMG QC (Chairman)

Wendy Alexander (Vice-Chair)

Sir Victor Blank

Sir Andrew Cahn KCMG

Ellie Chadwick

Carma Elliot CMG OBE

The Rt Hon Mark Field

Brent Hoberman CBE

Carol Potter

Sir Tim Smit KBE

Ting Zhang

Kui Man Gerry Yeung OBE

**Contact us at:**

*[perspective@ukncc.org](mailto:perspective@ukncc.org)*

