



**Margaret Thatcher Conference on China and Britain
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**Keynote speeches from Gregory Hodkinson and Chen Lifang
and Panel Three: Technology and Innovation**

The video recording of these remarks is available on the [CPS YouTube channel](#).

Greg Hodkinson: Thank you very much. Lord Paul's little story about putting a Chinese visitor on the circle line reminded me of an experience that I had in Shanghai in 1993. I'd been doing some research on transport solutions for large, rapidly-growing, dense Asian cities, and I developed a mathematical model that demonstrated that for cities of the scale of Jakarta or Bangkok or Shanghai it was essential that there was a form of underground metro operating to move people around those cities because, if you tried to follow the Los Angeles model, they would grind to a halt in traffic congestion. I'd felt rather proud of myself I'd proved this arithmetically and presented it at a lecture at Tongji University in Shanghai.

It was an event at which the mayor of Shanghai, Huang Ju, was present and after the lectures, there were four or five of them, we were granted an audience with the mayor in a green room and I sat beside him as they sat on a large comfortable chair looking in the same direction and with interpreter between us. The interpreter came to me and said the mayor would like to know how many ring roads do you recommend around the centre of Shanghai two or three? I said, "Well actually my thesis was that you need a network of metros in Shanghai if you were to avoid near-fatal traffic congestion and I strongly recommend that you invest in a network of metros rather than ring roads around shanghai."

The interpreter went away and spoke to the mayor for quite a long time, longer than it would have taken to deliver that message, and then came back and said, "No, no, no, you don't understand. The mayor wants to know how many ring roads would you recommend around Shanghai two or three." I said, "All right then two." Of course what I didn't know was that later that year, the first metro line in Shanghai opened and indeed there was a plan developing to build the network of metros that I envisaged. Of course when you go to Shanghai today, you will find that it's a very fine City to move around and the metro is the only way to go.

Well, I'd like to thank you first for inviting me to speak to you today. This is certainly a timely event as the UK develop its relationship with China and its policy position on the belt and road, so it's taken me less than four and a half minutes to mention that. I hope that discussions here today will have added some depth to the political and socioeconomic considerations surrounding that initiative. What we've heard so far this afternoon points to a tremendous



opportunity for the UK in its relationship with China together with some interesting challenges, but also I will argue for China and in its relationship with the UK.

At the heart of this, I think we should remind ourselves that the economic rise in China need not in any way be at the expense of the West, but, quite the contrary, it provides a very significant opportunity to engage for mutual benefit. I do want to address that opportunity through the lens of the Belt and Road Initiative. The issues that strike me as the most critical to the eventual success of the Belt and Road Initiative or otherwise revolve around the challenges of social acceptance. You won't hear many other engineers say this, but the Belt and Road Initiative is not an infrastructure project or certainly not only an infrastructure project.

The Belt and Road Initiative is a multi-faceted and in the language multi-platform development whose core principles are around policy coordination, trade freedom, financial integration, people-to-people bonds, and yes facilities and infrastructure, but only in the sense of facilitating those other things. The initiative can be cut actually as a modern globalization initiative. Going back to first principles, I think we generally all be in favour of improved connectivity and the creation of stronger links between people across the world. That's hardly a new idea.

The case for the link between trade and peace was already accepted by the Romans and in the 19th century, Frederic Bastiat famously noted: when goods cannot cross borders, armies will, which should give us pause to reflect on the trade war looming on the near horizon. The case for building stronger trade links to reduce the potential for conflict and to enhance prosperity is hardly new or controversial. On this basis, the Chinese aspiration to bolster connectivity and trade through the Belt and Road Initiative is one that we should be able to subscribe to fairly readily.

Apart from those matters of principle, there's an enormous unmet demand for infrastructure and development along the Belt and Road corridors, and you don't have to be particularly optimistic about Asia to understand that it has a very bright future so long as there's infrastructure to support and facilitate it. For example, the Asian Development Bank and the Asian Infrastructure Investment Bank both agree that demand in Asia alone over the 15 years or so from 2015 to 2030 amounts to an average of about \$1.7 trillion US per annum, about more than double the existing rate of investment. About half of that is to provide energy and power and another quarter to provide transport infrastructure to connect peoples and cities.

Governments are currently investing at less than half the demand rate and public financing is being stretched to its limits- including Chinese public financing. There's therefore a potential role for the private sector to fill the remaining 60% if that demand is to be met. Even if the Belt and Road Initiative



didn't exist, there would be plenty of activity in the regions encompassed by the initiative simply because of the underlying demand.

Even without the Belt and Road Initiative, we'd also expect to see Chinese entities heavily involved in the financing and construction of much of the infrastructure that we're likely to see coming down the belt and road, and that's because of their capacity and because they've developed their infrastructure sector in the unprecedented scale and speed with which China's domestic development has occurred over the past 30 years. That said, I believe the Belt and Road Initiative in itself is extremely important and helpful to encourage the development that needs to be strategic, complementary, mutually beneficial, sustainable, and resilient.

The Belt and Road Initiative has a distinct convening power as we can see from events taking place all around the globe and more importantly from development that we're seeing happening on the ground. Infrastructure however is always and everywhere political. We shouldn't deny that. Separating economics and politics is not ultimately possible and that's because there are vested interests and there are winners and there are losers. Even when the number of winners far outstrips the losers, we must do the best we can for those who don't see that critical new rail link, but rather for example the loss of land that's been farmed by a community for generations, and that's why at my firm Arup we've signed up to the UN's sustainable development goals to try to ensure that the work we do matches our mission to shape a better world.

Good infrastructure is fundamental to improving people's lives, creating jobs, supporting trade, providing affordable energy, and clean water as well as reducing poverty. Ultimately what the Belt and Road does is drive home the crucial point that investing in infrastructure can be a win-win and not a zero-sum game. It's about a virtuous circle that underlines the critical truth that trade, growth, job creation, poverty reduction, all rely on efficient, resilient networks that link people goods and services between and within countries regions and cities. What we have in the Belt and Road is basically a draft master plan, it's a concept, it's an idea for connectivity and development in the two-thirds of the world that most needs it.

In the face of the pace of growth that we're seeing across Asia and around the world, we do however have to be sure now more than ever that we're building the right infrastructure for the right reasons. In some jurisdictions including some along the Belt and Road, it's still too easy for politicians to promote pet projects rather than working to a strategic plan that will optimize the infrastructure, spend in a logical sequence for the benefit of the most people. It's too easy to become so focused on capital cost rather than lifetime cost and benefit, so that poor planning and design is accepted and environmental impacts are ignored or at least under played.

It's still too common to see financial risk run far in excess of a city or state's ability to make a success of the project, potentially mortgaging a project payoff



to create a serious political risk in the future. The good news is that it doesn't have to be this way. International experience and expertise can be brought to bear. The UK in particular has knowledge and experience in most of the Belt and Road countries longstanding, knowledge and experience in the professional services required to set the projects up properly in the first place to result in sustainable resilient development, and knowledge and experience in the private public partnership models that are required to meet the demand.

There's no shortage of expertise available if we engage to ensure that the Belt and Road Initiative is planned and built to the standards of planning design resilience and economic sustainability that will get the job done in the right way. I don't buy that mean Western standards, I mean proper modern international standards for the infrastructure the world needs for the generation ahead. Bumps along the Belt and Road are inevitable, but what needs to happen is to ensure that they don't derail the initiative. Failed projects, excessive debt and socially questionable initiatives, environmentally detrimental projects, too many of these will be very bad for the Belt and Road brand.

They can however be avoided. Indeed, President Xi has said that China wants, and I would say needs, a sustainable Belt and Road. Together we have the knowledge, the skills and the experience to shape a Belt and Road that will deliver tangible benefits for society as a whole and not just for its promoters, and it's absolutely critical that we must because we won't get a second chance of this. People who've heard me speak about this before will know that I'm committed to building to a higher set of standards to deliver a better future because in this once-in-a-lifetime rate and scale of urbanization and population growth, the stakes are simply too high to fail.

As it is and apart from anything else, we know that we face very significant climate change impacts in the years ahead and if we don't build the next generation of infrastructure to better standards, we will lock in that climate change for decades to come. We have to do better. If we don't we or rather the future generation will end up paying for it anyway. Planning and design represents just a few percentage points on the cost of most infrastructure, so taking a little more care to develop plans that maximize the wider benefits for stakeholders and minimize social disruption and environmental impact has to be worthwhile.

My point ultimately is that good design supported by strong, clear principles underpinned by agreed standards provides a way for the Belt and Road to be a great success and to silence its critics. Truly resilient projects that deliver for the economy for the environment and for the people are the key to making the Belt and Road Initiative the success on its own terms. Ultimately we should engage in and work together in international partnership to forge a social license for the Belt and Road initiative to help create bankable, deliverable, and sustainable development as a result. By doing so, we can deliver on the ambition and vision and make the Belt and Road a strategic win-win for all involved. Thank you very much.



Tom Strathclyde:

Well, thank you very much indeed to Gregory Hodkinson who brought a lifetime's experience and knowledge to that address. I'm Tom Strathclyde and I sit on the board of the CPS and I must say when we first thought about this initiative, we didn't realize quite how popular it would be and it's wonderful standing here seeing how many of you have turned up. From all the four corners of the globe and of course particularly from China and you are very, very welcome here. Now it's my proud duty to introduce somebody from one of the world's great companies, growing companies that is Huawei Technologies Company Limited and it is a great pleasure to be able to introduce madam Chen Lifang from Huawei who is going to talk to us. She is a main board member. She has tremendous experience and please welcome her to the stage.

Chen Lifang:

Distinguished guests, good afternoon. I am very glad to attend this conference. I work in Shenzhen, a very special city in China. It is China's first special economic zone where Deng Xiaoping palliated the reform and opening-up policy. Huawei, the company I work for is also very special. We are a private company wholly owned by our employees. Our founder, Mr. Zhengfei is the largest shareholder of the company but only holds 1.4% of its equity. After three decades of growth, Huawei has become a global technology company. Our company operates in more than 170 countries and regions and employs 180,000 people. Our revenue last year exceeded 92 billion US dollars. We partner with every major telecom provider in Europe.

In the UK, we have worked with BT and Vodafone for more than 12 years. I have worked in the communications industry for 26 years. I am lucky to have witnessed with the industry fastest growth. In China, for example, the number of mobile phone users have grown from 18,000 in 1990 to 1.61 billion in 2017, as the number of fixed broadband users has also increased from more than 80 million in 2008 to nearly 350 million in 2007. This rapid development comes from basic research in communications by generations of scientists over the past 100 plus years. In 1864, James Clerk Maxwell used mathematics to derive his theory of electromagnetic waves.

In 1887, Heinrich Hertz experimentally proved the existence of electromagnetic waves paving the way for wireless communications. In the 1940s, Claude Shannon introduced the concept of information entropy. He became known as the founder of information theory and digital communications. The results of basic research achieved by scientists a like a beacon illuminating the world, guiding companies like Huawei forward and benefiting users around the world. Take Huawei as an example. We have grown from a nobody into a somebody in the communications industry. This is due to the technological breakthroughs in global basic research.

We believe that innovation is the process of persistent investment to make breakthroughs. Every year, we invest 15% of our revenue in R and D. Over the past decade, we have invested 60.4 billion US dollars in R and D. In the future, we will invest around 16 billion US dollars in R and D every year. Now we live in the digital age. In addition to strong basic research and technological



breakthroughs, the overall strength of a country is also reflected in how well every person and organization master and harness technology. We highly recognized the UK government's forward-thinking. The UK is the first country that has released policies like the modern industrial strategy and the UK digital strategy.

The country has invested heavily in optical networks and 5G to build leading digital infrastructure. All of these efforts have laid a foundation for the further development of the ICT industry and the digital economy. Huawei is a leader in 5G development. We are now working with both the government and universities in the UK to trial 5G applications. We value the UK's commitment to promoting innovation research and STEM skills. The university ecosystem here is one of the world's best. Through this ecosystem, Huawei has provided research funding to over 20 university partnerships and has set up three Huawei R and D centres here. We have also been running our CSR program in the UK.

For example, every summer we invest in stem graduates from the UK to join a 4-week program in China. They learn Chinese language, culture, technology and business. We call them seeds for the future and the UK is fertile ground for their success. So far, more than 200 students have participated in this program. In today's world, economic globalization and trade facilitation have driven great progress in society. However, development has been imbalanced. To mitigate the imbalance, we should work together to drive technological innovation and economic growth. Huawei is ready to work with all parties to drive the growth and the prosperity of the global digital economy and to contribute to the development of humankind. Thank you.

Tom Strathclyde:

Well, I'm delighted to say that we've now got our third panel I hope who will turn up and talk to us about technology innovation and big data. If they would like to come to the stage, that would be fantastic. Thank you very much. Come along, come and sit down. We've got as you would expect a tremendous panel. We have got Dr. Huiyao Wang who is the founder and president of the Centre for China and Globalization. He's also a counsellor of the China State Council appointed by the Chinese Premier since 2015. We've got an old friend of a CPS, Professor Niall Ferguson who is here and when he's not here, he's at the Hoover Institution where he's a senior fellow at Stanford University and a senior fellow of the Centre for European Studies.

He's written countless books, is a renowned academic expert on world affairs and he's very welcome here. Hang on, let me see who we've got here before I forget everybody. Andrew Ratcliffe is a chartered accountant who spent his full-time working career with PwC as an auditor and we've also got Mr. Ray Bingham from Arup who has already been introduced to you. We're very well very pleased that you're all here to talk to you.

Andrew Ratcliffe:

Thank you very much, thank you very much.



Tom Strathclyde: Please crack on.

Andrew Ratcliffe: We will.

Tom Strathclyde: Thank you.

Andrew Ratcliffe: Good afternoon everybody. We're here for the third and concluding session, and I think the one where probably, and I would say this, where things are changing the fastest, so we're going to be talking about technology and innovation and a number of speakers have referred to that or reference that already this afternoon and undoubtedly a really powerful force for change. What we'll do, you know the form, we'll each of us make some opening remarks for about five minutes or so. The CPS has then sent us three exam questions which we'll discuss. Hopefully we can disagree because that's always more interesting and then we'll wrap it up at the end for 6:00. Let me start off.

I mean yes I used to be an or I'm a recovering auditor, but I'm here really as a past president of the Institute of Chartered Accountants, which is the largest accountancy body in the UK. We have about 150,000 members from people who are CEOs right down to people who are doing tax work in their back bedroom. We also have increasing numbers of students members abroad. In fact, 25% of the students who are training now are training abroad and increasing numbers of those in China which is where this comes from. We're deeply interested as a professional body in what is happening with technology and big data and the effect that is having on business and finance and the implications of that for our profession, and that's how we got into this.

We've done a number of studies of big data and technology and internet of things, blockchain in the UK, and then last year we had the idea ... In fact, it was the year before, it took a year to get going of doing an equivalent study in the China context, so what is happening with big data in China and what is happening with technology in China. We did this in cooperation with Schneider Shanghai Institute and [inaudible] which is big cloud computing and technology company there. What I'm going to do just to start us off is summarize very briefly the findings of that research project and you've got copies. You've got the dual language edition on your chair in English and Mandarin, so you can read it at your leisure, but what did we find?

I mean first of all, the things that are different and actually make China probably the most interesting economy to study this at the moment, the first one being the very obvious one, the size of China and the extent of digital engagement. Seven hundred million internet users, 1.3 billion mobile subscriptions. It just means they're putting bigger sets of data together and the bigger the set of data, the more interesting the decisions and the conclusions you can draw from it.

Whatever I think all the other drivers of technology and change and yeah maybe not yet preeminent in hardware and we've heard recently issues like



that, catching up I think very quickly on software and enabling, but certainly I think ahead of any other country in terms of its collection of data. The second thing that I think distinguishes it is probably of all the countries in the world, the Chinese government is very, very purposeful about how they see the role of technology and big data transforming their economy. It's in their 13th 5-year plan published in 2015, and not as just a separate chapter, runs all the way through and talks about how they're going to apply that to various industrial sectors.

I think two very distinct things there that make China different, but then what are the challenges of this? Well, the organization is very much the same but clearly with those two dynamics, I think China having to encounter them and deal with them more quickly. Firstly aligning data to business need. I mean you can have loads of data, you can be overwhelmed by it. The skill is what data do I need to address this problem, how do I collect it securely. Secondly, the need for data governance and standards, what's the quality of the data on collecting, is it interoperable, is it comparable, has it got comparability across the sets I'm trying to work and the issues of security and privacy.

Thirdly, it challenges enterprise process. It changes the decision-making dynamic in a company. We've talked about maybe how Chinese companies are more hierarchical more the way Western companies used to be 56 years ago. I think data science provides a challenge that it moves the decision point. You cannot make the most of the data in so you're getting with the traditional way of deciding within a company, and you're going to need to break down the silos within your company and share information across it. Then fourthly and this is the most interesting one for us as an institute, what it means for people and skills of people in particular.

I mean it combines really four disciplines which traditionally people have been maybe individually special IT, statistics and mathematics, okay those are two coming together with data science, business understanding, finance and what is clearly needed is people who can integrate all four of those dynamics. My personal prediction is in 10, 20 year's time maybe even sooner the CEOs of the companies of the future will be people who have command of all four of those aspects in terms of understanding what their company is doing and being able to respond to that quickly. Ray let me turn to you, your take on this.

Ray Bingham:

Thank you. Well, first of all let me just say it's a great pleasure to be here in this conference. I've been involved in China one way or another since the early 80s and for the last 25 years in the tech sector specifically having been a CEO, a chairman, an investor in that sector for most of those 25 years. My current role, my current business interest is I'm a co-founder and partner in a US-based technology private equity firm Canyon Bridge and a partnership that has recently made a very significant investment in a technology company here in the UK, which I'll tell you about as I illustrate the connection to China.



We've talked all day long and we're all here because we're awestruck by the astonishing growth that we've seen in China and the importance that we've seen China take in not just global business role, but in the technology world in particular. How does this happen? How do they become or how are they moving towards becoming a tech superpower, not just an economic juggernaut but a tech superpower? Well, every major achievement in certainly in business and I think in the world starts with a strong core strategic imperative. We think about growth. We've talked today about the value of growth. In the West, we tend to think of growth delivering prosperity.

It makes us happier if we have growth, it makes us less absolute we don't have growth. Fifteen years ago I was working with the mayor of Beijing which is a very significant governmental entity on a developing a design university in China, and we were talking about what China was trying to accomplish and how that compares to how we would go about it in the West. He said, "In the West, you drive growth because it's politically an important thing to do. In China, we drive growth and very high growth because it's necessary to maintain civil order."

You see the differences in prosperity and growth on the coastal cities and you see that the people that could very well be left behind still are being left behind in many examples, and the government understands very clearly that growth is the only way to absorb those people into a continuing prosperous state that involves the entire country. Well so on the back of that imperative, China has been very focused on creating certain strengths that allow them to be powerful in the world stage and that's certainly been true in technology. They established themselves as a manufacturing powerhouse.

They did it initially on the force of labour arbitrage but as has been mentioned many times today, it's been built on by being a core integrated element of the global technology supply chain at scale. It matters to every single technology company. That said in order to play the role that they want to play, there are still big technology gaps that have to be filled. For all of the data power that they bring to the marketplace, those business models that we see in companies like Alibaba and Tencent and other amazing stories like that are still riding on the back of western technology, and that's a gap that China would very much like to close, it's something that they need to close as a matter of national security.

They get that, it's a matter of maintaining civil order as a matter of being successful as a nation and they also understand that there are other elements that have to be checked in order to more fully integrate into the global technology world. One of them is to make sure that they continue to work towards branding themselves as a country that respects the rule of law, respects the rule of intellectual property, and I've seen tremendous advances in that direction. Work to be done for sure including developing the confidence among global players that that's actually happening.



In terms of actual trade practices, we've seen and in fact it's been mentioned in the last couple of keynotes that the financial services sector has opened significantly, financial trading has opened significantly. A lot of work to be done to make it a global system, a lot of work to be done to see international investors pile on it to these opportunities, but the bones are there. The idea of having a more open liberal society is understood in China in my experience to create the successes and accomplish the strategy that they do. How does that connect to the UK? How does that connect to any western country but here we are talking about UK and China?

The world we live in is character by rapid internationalism of markets and global growth. An IMF study produced a remarkable statistic recently that 90% of growth in the future is going to come from markets outside of Europe, certainly outside of the UK. Obviously, what that means is we must as Westerners, we must as Europeans participate successfully where that growth happens in order to be happy, in order to feel secure, but also as a matter I believe of civil order for all of us. The UK has a tremendous amount riding on this, but the UK also brings a tremendous amount and that really brings us to what I think about when my firm makes an investment in a technology company in the UK or technology markets in the UK.

The UK in my experience over the last two years in developing this investment theme has shown remarkable openness to these values that are being developed in China and remarkable clarity that what China is trying to do in investing in technologies in the West is to help fill their own gaps in a fair liberal way. Now the UK tech sector brings remarkable strengths. I live in Silicon Valley, I live in California and have plied my career there while participating in global markets around the world, and so I'm very accustomed to driving around Silicon Valley and seeing new names popping up all the times of startups built on innovations in that part of the world.

Well, it's no different here in the last several years driving in the Oxford-Cambridge corridor increasingly here in London, I'm seeing exactly the same phenomena. It's astonishing to see the Silicon Valley like characteristics that are developing here and is frankly what drew us to this market to make some of our first investments as a fund. That first investment was a public PLC here in the UK called Imagination Technologies. We invested almost a billion dollars to take that company private to recapitalize it and to focus its remarkable innovation and products on a market that they had not had the channel or the resources, in some cases the R and D budgets to be able to focus on the growth markets that are occurring in China and the rest of Asia.

I could talk about what they do, but understand that if you think about new capabilities some of which Andrew just mentioned in artificial intelligence, neural networking, managing big data, the kinds of technologies that support the business models we see emerging in China, this company is on that path and now has we believe the investment and the channels to be able to compete successfully in that market. There are many similar stories like that in the UK and we're hopeful that we can continue to develop that. Now in the US,



there are remarkable challenges and barriers that we faced when we created the fund. We imagined that we'd be similarly investing in the United States.

In the technology sector, that's proven to be impossible at least for the moment. It's disappointing but it's a global world. We pivoted to Europe and found this first opportunity in the UK and are delighted with the opportunities that we see, not only because of the technology and the innovation and the drive that we found in technologists here, but also for forums like this and the initiatives that the UK government is showing to reach out to China in order to create the kind of ecosystem that allow British companies to be successful in this new global world.

What does this mean? Well, for us it's just a continuation of this positive theme that we've experienced in working closely with government here in the UK developing these opportunities. European companies unlike their American counterparts are generally more global in their thinking, and second here we found a government policy perspective that is open not without objectivity to participation in markets like the Chinese market. Thank you.

Andrew Ratcliffe: Thank you. Huiyao.

Dr Huiyao Wang: Thank you. It's really a great honour to be here and thanks to the Centre for Policy Studies for inviting me and also we're very honoured to be with this prestigious panel. I was quite impressed actually this afternoon with all the speakers and the discussions going on at this historical place. I'm really stimulated by the dialogues and exchanges this afternoon. First, I came from Beijing. I just arrived last night, but I think it's really fascinating to see that in this part of the world there is still a great discussion on the transglobal actions that are going on, not only in China, but also in Great Britain and the rest of the world. We're in the fascinating time.

I was actually quite struck by the discussion that in Britain in London in this historic place we're talking about how we can collaborate on the technology, on innovation, and on a future development of Sino-Britain relations. I think the centre I came from which is a think-tank Centre for China and Globalization, we founded about 10 years ago and it was actually at that time when we talk about globalization was a little sensitive in China. Globalization was a double-edged sword or globalization was Americanization or cultural revolution, whatever, but we're pleased to see China has gone so far and now fully embraced globalization and the globalization for example as last year when President Xi talked about it for hours, China has really come to the globalization.

I think that this is a great opportunity between China and UK to collaborate. We talked about in discussion that this year is the 40th anniversary of China's opening up to the outside world, but I think China opened up and it started with Shenzhen in 1979 when Deng Xiaoping actually set up the first special economics at Hong Kong, so that the China's opening up actually modelled on



Hong Kong and the market reform, the transformation took place in last 40 years. Basically a lot of things that China was so fortunate to have Hong Kong to actually benefit on this market reform and directly.

I think not only Hong Kong, but like the HSBC chairman talked about this afternoon, HSBC is such one of the most prestigious organizations in the world, actually originated from Shanghai and Hong Kong. You can see there's a lot of influence there. As we can see, we talk about the globalization but the industrial home time is UK. Industrial revolution we started with UK and I remember when we see the industry revolution museum at the Manchester, you can go back to see how Britain has actually impact world. I mean you had the Professor Niall Ferguson here who's a famous history professor and can really witness that in many of his works on that.

I think globalization if we really go deep on that, actually started 2000 years ago when this overall started, we can have this globalization at its earlier stage. I think for true globalization which I would think in the last 300 years, UK was leading first 200 years, almost more than that. Now we talk a bit initially about the Belt and Road Initiative. I think after 40 years of attracting, the world comes to China, it's time probably to China to contribute to the world, and then they propose this Belt and Road initiative. I think it's a new impetus of globalization and it's new driving push for the globalization.

I think this is still at the early stage and that we really need collaboration of the world. I think that particularly UK has a great role to play for that because Theresa May Prime Minister said global Britain. I mean after exiting the EU, when you look beyond the EU and then really we see the maritime of the last hundred years of a globalization. Now it's time to see continental connection of the globalization starting to happen, so that I think UK and China probably will be great partners for this Belt and Road Initiative because UK was the first to recognize AIB to join AIB, and then that is good example that how UK and China can work together.

Also more than that because I see now even along the route of Belt and Road countries, most of them are commonwealth countries. The Britain comes and knows the customers, knows the religion, the legal framework, even the tribes or whatever. The experience that UK company has on project management, on engineering codes, on the legal framework, on all those can really help the China to really get this thing going. I think it's really a great time. When we see the G7 is really not working so well, when we see American first is really upset all the countries, like UK or even China. We see a great opportunity to collaborate between UK and China, so that's why I was impressed with the discussion this afternoon.

As far as the wish is concerned, as far as technology is concerned, I think that China, the sheer size of the 1.4 billion people that the experiment of market reform and coupled with the technology revolution is unprecedented in human history, and that's really going to make more changes. For example, we have



the four new inventions going on, like you have the speed train which is already everywhere in China and you have the subway everywhere in China, so that's an unprecedented infrastructure revolution going on in the last four decades that never seen in a human history. Also China is becoming a cashless society.

Everybody just using phone and then you don't need a wallet anymore, and also a revolution of people ... We hear the numbers of them one billion mobile phone users, internet servers and also WeChat users. The WeChat become a community, online community for 100 million people, so they just break the one billion mark of the users. Of course also you see these new models coming out of China that the sheer bicycles that mirrors this. That kind of revolution, that kind of market reform is coupled with the technology. I think China has jumped forward. There's the answering machine of the time that China never managed to have heard of, never used, the fixed line level China has never used, but they directly go into the mobile phone, so that I think made a lot of changes.

I think also more than that is that there's the talent. China has been produced to support its technology innovation and the changes. For example, when I was graduating to the firm university, there was only 200,000 graduates a year for China. Now it's 8.5 million a year, so cup holder was almost 100 million college graduates in China, and that is really a workforce, never seen in the history of mankind in one country to carry out revolution. I think there's a lot of things going on. I think the technology innovation and globalization are the key driving forces for China and that has to be worked out with the rest of the world, particularly the UK as the leaders of the industrial revolution and the leaders of globalization for all those 300 years leading at least for 200 years.

I think it's time again that we can work together and working on this revolution of the technology and the innovation.

Andrew Ratcliffe: Thank you, thank you. Huiyao's just come in from Beijing, Niall's just come in from San Francisco, so this is a very jet-setting panel now your perspective.

Niall Ferguson: Jet-setting and jet-lagged. It's always a privilege to be involved in any Centre for Policy Studies venture, especially one that's taking place in these extraordinary historic surroundings. In my book *Civilization*, I argued that one of the things that distinguished the West from the rest and specifically Western Europe from East Asia was the early development of notions of corporate self-government, competition in the sense of political and economic competition. I used the example of this building to illustrate the point. It's impossible to find an institution like this, institutions like those of the medieval city of London in any Asian context. Mercantile self-government a distinctly Western idea.

More recently I've been writing the history of the past 10 years, it seemed time to write an update to my book the *Ascent of Money* which is now 10 years old, and I'm going to tell you three surprising things about the last 10 years that 10 years ago you did not expect. It's always helpful to step back and think about the recent past as history in order to see what happened that was in fact



surprising. The first surprising thing was that Chimerica survived the financial crisis. Now by Chimerica, I mean that extra-ordinary symbiotic relationship between the People's Republic of China and the United States of America that was obviously central to global economic developments, 10 or more years ago I think I first used the word in early 2007.

I, when I wrote about Chimerica then, expected it to be a short-lived relationship because there seemed something strange about the way the US-China relationship was working then. It seemed unbalanced, it seemed strange that capital was flowing from the poorer country to the richer country allowing its real estate bubble to inflate, and that's why the word Chimerica was coined. It was supposed to be a pun on the word chimera, something essentially unsustainable and unnatural. What in fact happened in the financial crisis was the opposite of what I'd expected, although there was some harsh rhetoric between Beijing and Washington during the most difficult part of the crisis, in reality, Chimerica saved the world from something like a depression and this has been much underestimated in western commentary. Most western commentary gives credit to central banks, western central banks for the fact that we didn't have a Great Depression after 2008. In fact, we should give equal credit to China because China's credit stimulus was as important as anything done in the West to maintain global growth. So the most surprising thing to me is that the US-China relationship held up through a period of great crisis and only now, only really in the past year as a result of the protectionist tendencies of Donald Trump's administration has Chimerica begun to look as if it's heading for divorce.

The second surprising thing that you wouldn't have expected 10 years ago was the change in China's domestic political arrangements in the direction of greater centralised control and a somewhat more authoritarian atmosphere. Ten years ago, I think it was commonplace for Western commentators to talk about a future liberalisation of China and to expect a relaxation of the party's control. I as an academic frequently visit Chinese universities, am visiting professor at Jing Hua. The change in atmosphere in the last couple of years is exactly the opposite of what we expected 10 years ago. There is a distinct tightening ideologically and politically of control and I think that reflects the Chinese party's need to tighten its grip in the face of very major challenges; a financial challenge, a challenge of industrial over-capacity, the coming challenge of demographics as the working population shrinks which it will for the rest of this century, and above all the challenge to the past is legitimacy that the problem of corruption had created at the time that Xi Jinping came to power.

I was in Beijing just a few weeks ago and an eminent Chinese statesman said at the end of a very long discussion, "You have to understand that Xi Jinping saved the party, saved the state and saved the army" and it brought home to me how much of a crisis there was in Beijing at the time that Xi Jinping came to power. It was hardly unnoticed in western commentary but if you were there, you knew it was pretty serious.



The third surprising thing and it's the most relevant to this panel is that China and China alone established companies capable of competing with the big technology companies of Silicon Valley, and that really was not predictable 10 years ago.

Twenty years ago, it was conventional wisdom that the internet would accelerate the liberalisation of China because as Bill Clinton put it, regulating the internet would be like trying to nail jello to a wall. Well, China successfully nailed jello to the wall and not only that, but allowed - and this was as much I think lack a strategy - allowed enormous companies Baidu, Alibaba, Tencent, most recently JD, to emerge at the cutting edge of e-commerce and technological innovation in ways that no European companies could match. One of the big puzzles for future economic historians will be why were there no big tech companies in Europe, why was it only in the United States and China that such companies emerged.

This is a theme I've been exploring recently in my book *The Square and the Tower*. It sets the stage for a new geopolitics in the age of information technology because the big story now is the race between the United States and China in the fields of big data and artificial intelligence and also quantum computing. The challenge to be the winner in these races is an absolutely extra-ordinary one comparable in its scale with the nuclear arms race of the Cold War, also with the space race of the Cold War between the United States and the Soviet Union. In those early races, the United States was the winner and it was almost likely to be the winner because of the leaders enjoyed over the Soviet Union economically.

It is no longer so clear that the United States will win its geopolitical technological races. On AI, it is clear you can talk to anybody in Silicon Valley about this that China is only a little behind, two to three months behind as one leading big tech executive said to me recently the United States. The probability is not a trivial one that China may actually win the race to make our AI functional at the highest level, the self-driving vehicle level, but more importantly it may be China that wins the quantum computing race and achieves what I've recently discovered as known as quantum supremacy. If there is one phrase I want you to take away from this afternoon's discussion, it is quantum supremacy.

Now it's not a movie, it is in fact an attainable goal and whichever superpower achieves that goal, that superpower will have complete mastery of the information technology space because all forms of encryption will be rendered more or less worthless in the face of a successful quantum computer.

Let me conclude with two observations. The Trump administration is much reviled, not least in Western Europe for its confrontational policy towards China, on trade, but I've argued and I'll say it again that from the vantage point of history sooner or later the United States had to do something to slow down, if it still could, China's ascendancy.



Remember, 20 years ago China's GDP was 11% of the United States', 10 years ago it was 31% of the United States' and this is in current dollar terms, not purchasing parity adjusted. It is now 69%. China is on track to overtake the United States in most meaningful measures and one has to understand the Trump administration's policy as a kind of last, perhaps desperate, bid to slow this process down. The trade war is partly a technology war. The main objective is not to reduce the bilateral trade deficit, that doesn't really matter. The main objective is to try to slow down China's technological advance by applying pressure which hasn't previously been applied on China to comply by World Trade Organization rules, rules that have generally been bent to accommodate China.

Finally, if this is the landscape of accelerating conflict between the United States and China, a landscape in which Chimerica ends and we perhaps edge towards Graham Allison's Thucydides Trap, the predicament of the European countries including the United Kingdom - and it still does include the United Kingdom for now - is a difficult one because you will have to choose, and the choice will not be an easy one at all. But I think we should dispense with the notion that the era of globalisation is ongoing, un-disrupted, and Europeans can simply free ride on the coattails of American and Chinese innovation. That game is coming to an end if it hasn't ended already and it will confront the United Kingdom and other European countries with a very stark dilemma.

Andrew Ratcliffe:

Thank you, and this is me talking to my pal. I'm going to conflate the three questions because we've already I think started to explore some of the things that we were talking about, and perhaps let's focus on the thing that ran across all those frequent, you don't know what the questions were, so you don't know what I'm talking about, but the thing that we ran across all those three questions not surprisingly given the time of the conference, which is China, Britain is how can ... I think you're absolutely right now, US and China are the big beasts of technology here toward the idea that Britain can some way emulate that is misconceived. But in this new very dangerous world and the breakup of that historical Chimerica, what are the opportunities for the UK? What are the places, and I think you touched on it a bit Ray, but what are the things that the UK, Great Britain can bring to that party, maybe having to pick one side or another, maybe holding the balance between the two? What are the opportunities there? What do we think about that? Ray you want to have a go?

Ray Bingham:

I'll start from a technology perspective, China became a major player in the technology world by leveraging low-cost labour. They focused on that very successfully and made themselves indispensable to the world. Now they're looking to expand out from that that point of view as I mentioned earlier, but they've got big gaps to fill, technology gaps and again as I drive through the Oxford-Cambridge corridor, as I look around FinTech here in London, I see answers to those gaps being developed in companies that are not just kernels, though there are plenty of those, but some that have already developed commercial relationships with the West and increasingly as they has access to channels to China.



That's a kind of indispensability, R and D, to fill the gaps that China has to fill in order to play the role they want to play to be the technology leader that they're trying to be, that they have to be as a matter of national security.

Andrew Ratcliffe: It really means in terms of policy for the UK, safeguard that environment in which those new businesses and that innovation and those symbiotic relationships with the universities can thrive. I mean that's where the value, isn't it?

Ray Bingham: The hurdle we had when we were proposing the acquisition of Imagination Technology ... By the way I didn't mention that all of our capital comes from Chinese institutions, so we were viewed as a Chinese investor investing in the tech centre here in the UK and that raised all kinds of concerns in some quarters, but the work we did with government was to explain to them that this is an inward investment that can't be re-exported except as intellectual property that can be protected, either in the form of products, physical products, services or increasingly, as the world is becoming more convinced of China's intent to respect the rule of law, exporting of that know-how and capability to begin filling those gaps.

Andrew Ratcliffe: I mean you intrigue me saying it was impossible to invest in the US tech sector. Why was that? I mean what ...

Ray Bingham: Well, there's a new technology acronym in America called CFIUS and it's a panel of cabinet-level secretaries that under law report to the president of the United States and have the authority to review any foreign investment, and increasingly that means they're looking at any Chinese investment in the United States, not just technology but essentially technology. Our first attempt at an investment as a fund was to invest in a small semiconductor company in Portland Oregon. We made history in being one of the first investment proposals in decades to go all the way to the President of United States and be turned down. Took us nine months to accomplish that.

If you look at inward investment in the US from Asia generally, but China in particular, you'll learn that acronym very well.

Andrew Ratcliffe: Again back to that theme of the openness of the UK economy we've talked about through the day.

Ray Bingham: Not with blind faith. The interviews I had with government were rigorous. They did their checks and they understood that what drew us here was investing in the UK technology ecosystem, not just one company, but the network of technologies that go to build a company like that.

Andrew Ratcliffe: Okay. Huiyao what would you say? I mean what's the opportunity for the UK and relationship with China?



Dr Huiyao Wang:

Yeah, absolutely. I think that the opportunities for UK, to a larger extent the EU, is enormous. I think that since that Second World War, we're almost over 70 years of that now, that world still in peace and the world still have no major conflict is precisely this globalisation process has been so deeply and practiced and safeguarded throughout the world, which I think UK played a role in doing that. Now since Bretton Woods system which you had the first generation of globalising 1.0, have you have United Nations, World Bank, WTO, IMF, what have you, but that system is under huge threat now and of course the globalisation going on. When we see that the global system is slowing down, if not breakdown.

At this critical moment, I think that China is standing out to really safeguard the globalisation and trying really to be more innovative on that. I mean that AIB and Belt and Road Initiative are examples of that, and I think in that cases, Britain and EU really probably a great opportunity to work together with China and trying to upgrade to 2.0. We have a lot of challenges like cyber security. There's no international organisation of cyber space governance, there is no international e-commerce governance, there's no international global talent movement governance. China is one of the largest talent movement around the countries and UK is a having a lot of expertise around the world.

Also WTO has not function since Doha Round, in the last 70, 80 years. Can we make this existing global system go around and continue to safeguard and maintain the world peace and prosperity that we have enjoying the last 70 years? I think now probably President Trump is trying to disrupt that kind of procedures, but I think where UK and EU trade, we really should work together with China now. I think probably US will come back like TPP and TTIP, if not in these two years or next few years. We'll say in the future, but at least we're facing challenges of the globalisation. I think that there's a such a big market that China is really getting so fast. China's GDP is already overtaken the EU now. It's larger than the EU now.

Where's the opportunities? Who can provide more global public goods and financing and infrastructure capacity that's been harnessed in the last 40 years? China is the place. In order for China to be on a right track, in order for China to be more responsible for the global contribution, I think it's really a natural partner like it's a really brilliant example of UK joining China for AIB. I think we should really build a few more global governance system, we should really innovate on the global government so that we can really have the globalisation continue deepening and reform and the innovation, so that the peaceful world can continue.

We are not really getting into the trade war, we're not getting in the military war and cyber war and eventually the human destroy themselves. A good example of China now collaborates with US on containing North Korea is a good example, so that I think co-operation with China and half China is so important that China is now already, like it or not, is already big player. We probably have to respect the diversity of this world development and then at least, we'll have a common value of the globalisation. We should really try and have this



denominator There's biggest denominator which UK was started with this globalisation and US is really the leaders for the last hundred years. Now China add on can support.

I think there's an enormous opportunity for China and UK and EU and US to work together and Chimerica to be successful.

Andrew Ratcliffe: Niall I think Huiyao's a bit more optimistic perhaps about that, than you are taking your scenario saying we're going to have to choose, which way would you jump?

Niall Ferguson: Well, it seems to me that there isn't really a choice and CFIUS, which of course is no new institution, has existed for some time and only recently turned its attention to Chinese technology investment will soon have its counterparts in Europe as European governments grow more wary of the acquisition of cutting-edge technology through investments.

The thing we should discuss now which I think is especially relevant to the UK is finance because we still exist in a US dominated payment system that goes back to Bretton Woods, a system that has evolved so far that the United States probably enjoys more power through financial sanctions than through most of the weapons that the Defense Department can deploy, and those financial sanctions are still enough to make it very hard for European corporations to defy the United States, as President Trump withdrawals from the Iran nuclear deal. That's the state of the international payment system today, but, and this is I think a point that follows on from Huiyao's argument, China is rapidly evolving an alternative financial architecture. You alluded to it when you mentioned that people pay for everything with their phones in China. I don't think many people fully appreciate the enormous financial architecture that lies behind Alipay and its WeChat equivalent. Here is the most important thing the Chinese tech companies have done that the American tech companies failed to do. They solved the payments problem. PayPal is not ubiquitous in the United States. I rarely use it. If you're in China, you are using Alipay, you are using WePay, you almost certainly have an account with Yu'e Bao.

Companies that have emerged in FinTech in China are world beaters, superior to their American counterparts, Ant Financial to me is one of the most interesting companies in the world watch that IPO when it comes. That company is the potential to become the dominant financial institution in international FinTech and there is no US counterpart. What the US has is essentially a 20th century banking system with an enormous encumbrance of regulation that sprang up before, during, and after the financial crisis. It's very hard to do financial innovation in the United States precisely because of this regulatory jungle.

In China, the opposite applies. There are very few constraints that have restrained Alibaba from exploring the financial potential of its platform. I think the challenge for the UK will be do we allow London, one of the world's great



financial centres to become more and more a part of the new Chinese financial architecture or do we hold aloof from that. I think that question will be posed more and more in the coming years because you can see Alibaba and Ant Financial rapidly rolling their platforms out in other emerging markets. It's happening all over South Asia, Southeast Asia, it's happening in Sub-Saharan Africa.

The CEO of one of these companies said to me we would do Latin America, but it's such a long way, but Latin America will eventually be on the list of targets and suddenly we will wake up and it will be in a relatively short number of years to a world in which the United States and perhaps Western Europe still belonged to the old payment system, the dollar system and more and more of the rest of the world a part of an RMB or Yuan based system based on the FinTech platforms. I think China's challenge in FinTech is in some ways it's most plausible an impressive challenge. It's the lead that is already here and I'm not sure what the right solution is for the UK.

Under David Cameron and George Osborne, I think there was a great readiness to allow financial experimentation to happen and to build relations with China that would encourage that. I'm not sure that this is quite such a strong commitment under Theresa May. Certainly it's not felt to be in Beijing, but that I think is the form that the dilemma will take. It will really be a financial question that the UK has to answer as the Chinese platforms become more and more ubiquitous.

Andrew Ratcliffe:

Okay. Let me then try and wrap this up. I mean what I've heard in answer to that question is a number of themes, one that the network of innovation within the UK, the ease of start-up, I mean it's still the easiest place in Europe to start a new company and start a new venture, the openness of the UK economy, the acceptance of inward investment, the whole infrastructure of, I mean we talked about standards, but it's really about the whole structure of the rule of law and businesses, services, professions that are here in the city of London, famously lots of people bring their disputes to London for resolution. London is a financial centre, an international financial centre to your point now and the link of that to financial FinTech.

Have I missed anything the three of you would add to that list? I mean as the things that UK policymakers should be focusing on as the opportunities here?

Dr Huiyao Wang:

Well, I think that we talked about Belt and Road Initiative. I think that that has served as one of the financial capital of the world and Hong Kong is another financial capital in Asia that really it was a legacy of UK left there, and I think it's extremely important that collaborate on these financial capital networks including the commonwealth countries that make this financial scheme for the Belt and Road Initiative to work because I think now China has said many times the Belt and Road Initiative is not just a China single solo effort, it's really collective effort. We really need a strong international partners.



I think UK can really be a strong partner of that and then really make this internationally new initiative which is maybe ... I mean after the Second World War one of the most notable initiative that really worked well that connected continental Europe and Asia. I think that probably and London can play a leading role on that given this such current situation. I fully agree with the Professor Niall Ferguson said just about this financial revolution going on because of the 20th century's model, now with 21st century model that experiments successfully with 1.4 billion people and now it's going to India like Xiaomi is that the largest mobile provider to Indian market, which is only in three years' time.

We have another billion probably mobile phone coming up to use that and then you can see the future financial usage by the modern ... Your phone is your wallet and that also a host of new changes coming with that and on the financial regulatory environment. I think London can really be a leader on that to work with China to make this more acceptable to the Belt and Road countries or to the future financial innovation. There's a lot of things that can be worked on the infrastructure wise and also financially regulatory wise.

Ray Bingham:

The attribute and the asset that that comes to my mind as you ask that question is one of scale. Part of the answer to how China has come so far so fast is that what they do is highly focused and it's done at scale. These are not little incubators, these are massive infrastructure projects or massive technology projects. Look at earlier our representative from Huawei talked about what the miracle of Shenzhen: scale. Well in order to deliver on that kind of interest, China needs partners that can also deliver at scale.

That strikes me and I may be a little over my skis here as coming from California, but England, as Head of the Commonwealth, has the opportunity to influence English-speaking world and certainly the Commonwealth at scale in creating the right kinds of narratives with China.

Andrew Ratcliffe:

Niall any last thoughts?

Niall Ferguson:

In the evolution of relationships between China and the United States in the realm of technology, universities play a key role and I'm constantly struck at Stanford by the size of the Chinese presence and also the key role played across the Pacific by the ABCs and the AECs, the American-born Chinese and the American-educated Chinese. An interesting question for the next 10 years will be how far similar cultural bridges can be built across the Eurasian landmass from Europe to China. They seem less developed, but of course there has been a significant Chinese presence at British universities in recent decades, not necessarily made easier by recent policy.

I think the broader question is how far that the cultural bridge can be strengthened. I've been involved at Tsinghua with Steve Schwarzman's new college there designed to create a Rhodes program for American and European and indeed students from all over the world to study in China. I think



the UK could be more creative in building those bridges academic and cultural bridges across the Eurasian landmass, and that seems like an area in which Britain ought to be skilled for as we've been discussing historical reasons.

If globalization was originally Anglobalisation, there is at least the possibility that the age of Chimerica will give way to a Eurasian age, and that's the scenario that I had in mind when I said Europe has a choice, a choice between an increasingly bellicose United States trying to defend its position as the incumbent using institutions like CFIUS to exclude Chinese capital and China that at least says it's committed to the values of the World Economic Forum at Davos and to globalisation. I'm not sure I entirely believe those pledges and commitments, but I think they're sufficiently plausible and the rhetoric of the United States sufficiently inflammatory for the dilemma to be a real one for Europe and indeed for the UK.

Andrew Ratcliffe:

We're adding to the list certainly involvement in Belt and Road and with a western end of Belt and Road really. I think somebody told me last year there was a train that left Shenzhen and finished in Shenfield in Essex, so it went all the way, but that was the first one to do the full trip. The soft power of the Commonwealth and the education and cultural link, so I think we've got quite an interesting list there of opportunities for UK economy. Robert we probably sketched out a green paper for you I hope, something you can pick up. Anyway ladies and gentlemen, could you thank this very interesting panel with me. It's been a fascinating discussion, good job.