

2016 Commemoration Oration

Professor Edward Byrne AC
President & Principal



Learning to thrive: how can universities make a greater contribution to society and the economy in an increasingly connected world?

Good evening. I'm delighted to have the opportunity to revive the College's historic Commemoration Oration address to deliver my inaugural lecture as the Principal of King's College London.

We've managed to attract major names to deliver the Commemoration Oration in the recent past, including the then Prime Minister Tony Blair, former UN General Secretary Kofi Annan, and the Noble Prize winner and King's Alumnus Reverend Desmond Tutu.

So there's clearly no pressure for me, then!

King's is a university engaged in great endeavours and key to our success is of course the quality, character and diversity of our student, academic and professional services community. We also have a world-class network of socially-minded alumni, donors, funding organisations and industrial and academic partners. To those of you here tonight, thank you for the great contributions I know you make to the fulfillment of our mission.

My lecture will be broad-ranging in scope, but focused in the main, on what I would consider to be some of the key social and economic contributions the top tier of academically selective and research intensive public universities found in this country should be seeking to make moving forward. Some of my thoughts will of course have wider relevance to other university systems around the world.

As my starting point in this lecture, let me take the present-day motto of King's College London. We look to advance knowledge, learning and understanding 'in the service of society'.

My view is that we do strive to live and embody this aspiration as a community. We can obviously make further improvements, but as a university we already make a real difference to our home city, this country and the wider world. But we face significant headwinds that will require us to think and operate differently in the future to raise our game further.

I also plan to explore some of the opportunities and implications that the rising tides of interdisciplinarity, the information revolution and internationalisation present for universities. These tides contour with the ever-growing political and societal expectations in respect to the role universities should be playing.

I'll start with a quote. In his book, *Future Perfect*, the author Steven Johnson describes great institutions around the world as the 'giant redwoods of modern civic life'¹. The great research universities of Britain and America, to my mind, very clearly fall into this category.

They've reached new heights and branched out as the decades and centuries have rolled by. They've evolved and endured while simultaneously entire political ideologies, cultural fashions, technologies and industries have sprung up and enjoyed widespread success, only to then decline or disappear. They've outlived companies and social movements whom to their contemporaries will likely have seemed as dominant as the Amazons, the Apples and Oxfams of this day and age.

Clever countries with strong, diversified economies and vibrant civil societies tend to have a strong base of academically rigorous and research intensive public universities. These societies have had governments and institutional leaders and philanthropists who, at critical junctures in the past, have taken a long term, non-instrumentalist view about the value of supporting the great universities to grow and take on diverse functions.

Indeed universities were famously described by the then University of California President Clark Kerr in the 1960s as 'multiversities', by which he meant universities are 'a whole series of communities and activities held together by a common name, a common governing board, and related purposes'².

Wise people have always recognised that universities are truly greater than the sum of their individual parts and that reform of public investment to support their activities must be handled carefully and sensitively.

This country is of course about to potentially undergo a significant re-design of the institutional landscape for regulating, funding and assessing the quality of education and research if the recommendations of the *Fulfilling Our Potential* Green Paper and the Nurse Review are indeed taken forward.

Some of the ideas are welcome, but we must ensure that these reforms deliver added value for students and universities, and that they do not inadvertently lead to a bifurcation of teaching and research, which are highly interdependent, reinforcing activities.

The creation of Research UK, potentially with Innovate UK integrated into its ambit, brings with it opportunities to enhance or spur-on inter-disciplinary research and university-industry interactions.

We must also ensure that Research UK continues to provide a durable dual funding system that enables universities to plan ahead and provides a healthy, stable resource envelope for curiosity-driven research to flourish. It must also protect the Haldane principle.

Multi-disciplinary universities with significant medical, science and engineering faculties require very expensive research laboratories and expensive and energy-intensive kit to function at the highest level. World class research and truly impactful knowledge exchange and societal engagement by the social sciences and the arts and humanities disciplines can also require considerable investment and patience to pay off.

¹ Steven Johnson, *Future perfect: The case for progress in a networked age*. (New York: Riverhead Books, 2012), p.204.

² Clark Kerr, *The Uses of the University*. (Cambridge, MA: Harvard University Press, 5th ed., 2001), p.1.

In short, let's not kid ourselves; we may well be the 'jewels in the crown'³ of what is a clever country, but we cost a lot to run. Britain's leading cadre of research universities have become very large concerns with significant budgets and large student populations and academic and professional services workforces.

Even in affluent times, it is difficult for central governments to wholly meet the funding needs of world class multi-disciplinary universities. Very few truly world-class universities are now primarily dependent on direct grants from government for education funding, and very few government research grants meet the full economic cost of research.

We have entered a time where the private benefit of university education is reflected in a private fee contribution balanced in equity terms by a delayed repayment, income-contingent Government loan pool and generous bursaries for disadvantaged students. The funding system in England has achieved a balance which will be made more sustainable by the proposed indexation of fees in line with inflation.

More work may need to be done across disciplines to recognise differential course costs, widely differing career salaries and different mixes of public and private good, which are reflected in other systems such as the Australian system.

We've diversified our income bases, by necessity, and in doing so built up a wide portfolio of relationships with charitable and industry funding research organisations, as well as publicly minded philanthropists and donor alumni.

This is essential because, despite our rich histories, there is no automatic right, especially in a more competitive education and research funding environment, for a great university like King's or indeed a UCL or an LSE to necessarily remain great or even reach the 22nd century.

In an age where the world is ever more connected and complex, and people are becoming less deferential to traditional hierarchies, leading universities clearly have to move with the times and recalibrate our missions and operating cultures to more explicitly meet our responsibilities in supporting societal and economic advancement.

Universities have, of course, evolved considerably over the centuries to meet the evolving needs of the societies around them. There are stark differences between the medieval University of Paris, the Oxford of Cardinal Newman's time and the Humboldt University of Berlin-influenced modern research university that emerged later in the 19th century and early 20th centuries.

Yet, I would argue there has been relatively little change in the articulation of the general mission of leading research universities since the Second World War, despite the massification of our student base.

Excellence in education, both in a disciplinary and a rounded 'intellectual mind' sense, and the role of curiosity-driven research in pushing out the boundaries of knowledge remain paramount, against a backdrop of an increasingly complex global society and the impact of technology on labour markets and wealth creation.

When I think of the underpinning missions and operating cultures within great research universities, I'm sometimes struck by the strong degree of continuity with the workings of universities in the 1970s when I was starting out in my career.

³ The Russell Group, *Jewels in the Crown: the importance and characteristics of the UK's world-class universities* (London: The Russell Group, 2012).

While many universities do of course readily acknowledge they have a third mission beyond teaching and research – to engage creatively to generate social and economic value – it is not necessarily as fiercely embraced and deeply embedded into their day-to-day institutional activities as it could be.

Yet we are about to enter a time of change greater than the university world has ever seen - both in terms of its pace and magnitude. Fundamental changes in ethos, pedagogy, research practices, and the notion of the academic as not only expert, but change-maker, lie ahead of us. Some of these shifts will take place in rapid order, others will happen more incrementally.

Across the globe, policymakers in local and central government, the media, businesses and social enterprises are all ever hungrier for fresh insights, more data and better practices and technologies. They also want to recruit talented people, with strong quantitative, analytical and critical thinking skills and adaptive, resilient mindsets.

Moreover, we are part of an increasingly crowded global knowledge-producing landscape with respect to the development of new technologies, treatments and evidence-based insights to support more effective policymaking and higher levels of productivity and social innovation.

From the national scientific institutes like the Francis Crick Institute, to the Catapult Centres, to the think tanks and the Nestas and RSAs of this world, there is a growing field of knowledge-generating organisations seeking to help shape the future, and accumulating growing levels of prestige, influence and funding as they do so.

To be clear, this is not meant as a lament. Many of these organisations have a strong social purpose and are playing a valuable, dynamic role. There are aspects of their approaches to generating knowledge and impact that I'm sure we can benefit from learning about, as a sector, as our collaborative engagement with them deepens.

Turning to research, a common paradigm in looking at different classification types of scientific research is to see a quadrant-like continuum, as Donald E. Stokes set out in his book *Pasteur's Quadrant*⁴.

This continuum has the Niels Bohr quadrant as the absolutely theoretical, where pure basic research with no obvious or specific application in mind takes place. It has the Louis Pasteur quadrant to describe the transitional phase where ideas move from the theoretical to a more developed form. And it has the Thomas Edison quadrant to describe a more purist form of applied research, which is, for example, specifically focused on invention of a light bulb.

I would argue this paradigm has broad applicability to most aspects of university-based research activity. In almost every discipline, although described in different words, the same continuum from the theoretical to the highly applied exists.

In one worldview, the crown jewel of a vibrant university research environment is that it is diverse and de-centralised, dare I say it even chaotic – an environment where we let 1,000 flowers bloom and we see over time which blossom and which fail.

Seen in this way, universities are essentially self-regulating in that great discoveries will come to the fore, worthy contributions to society will find their place, and ideas and approaches that are less

⁴ Donald E. Stokes, *Pasteur's Quadrant: Basic Science and Technological Innovation*. (Washington. DC: Brookings Institution Press, 1997).

helpful fade away. There remains a strong attraction to, and concentration on, blue skies research in many disciplines.

On the flip side there's a view that in this day and age the huge costs of undertaking research in many areas of scientific, technological and clinical fields require universities to think anew about the balance of resources arrayed between fundamental, curiosity driven and more applied or translational forms of research, with a view to doing more to support the latter.

Some argue that with the level of competition to secure research funding from public, charitable and industry sources becoming ever fiercer, university research communities need to become more strategically aligned, with institutions asking hard questions about the practical impact of the work their academics plan to undertake.

I would argue that there's a dynamic middle ground approach between the 'let a thousand flowers bloom' and the 'strategically aligned, highly interrogative' perspectives.

My starting point is that ambitious and gifted research-active academics need intellectual freedom to follow their ideas and to thrive. They need to be supported and encouraged to think about impact pathways for their work, but they should not be hectored to forge interactions with external partners that won't realistically amount to much simply to secure funding. They need to be free to experiment; this has not changed and never will.

Yet the external milieu is infinitely more complicated. The world is far more technologically interconnected and economically productive than it was even 15 years ago.

Globally, society is changing more dramatically than at any time since the Enlightenment, and in ways deeper and potentially more challenging than ever before. We're witnessing the rise of a new global middle class, in countries that 2 or 3 decades ago were described as being 'third world', an unpleasant and now, thankfully, increasingly abandoned term.

From responding to the sustainable development issues connected to mass migration flows and climate change, to facing up to a diverse array of health challenges such as anti-microbial resistance, Dementia and Ebola, we face societal and scientific challenges that increasingly exceed the purview of any single academic discipline to fully address.

These days interdisciplinarity is hyped by universities, and the higher education media, to the point where the term could be at risk of becoming clichéd. Nevertheless, the energy and ingenuity generated when people with overlapping rather than identical knowledge 'attack' major problems is immense.

In my view, universities must do far more to pool their expertise and their data across the potpourri of disciplines, as well as to utilise their relationships and translational know-how and support infrastructure to really address such challenges in a joined-up way that delivers progress.

How we allocate public funding for research also matters. Rather than having talented research-active academics scattered around randomly across a hundred and fifty plus universities, successive governments in this country have taken the decision to concentrate the overwhelming bulk of funding on the top tier of research-intensive universities which have real strength in depth, as well disciplinary breadth.

It enables great universities to achieve far more – far more quickly. There are important nuances, of course, to the concentration debate and excellence is also found in smaller institutions.

But when one looks at the most exciting innovation precincts or clusters around the world, they almost always have at least one relatively large, highly research-intensive university at their heart, and sometimes several.

Examples abound. The North Carolina research triangle around University of North Carolina Chapel Hill and Duke; the Rhine Necker research Triangle; the vibrant corridor of biomedical and businesses and research centres envioning Cambridge University; and the fantastic medical research precincts in San Diego and San Francisco. They all present some compelling examples of how a critical concentration of world-class research infrastructure and talent pays off.

These universities interact with a variety of industry players including R&D divisions of major global companies, wholly-owned subsidiaries, medium sized supply chain businesses and independent commercial and government operated research laboratories, some of whom operate in state of the art facilities replete with kit that makes academics green with envy. These innovation precincts will also typically have a rich milieu of small businesses, including graduate start-ups and university spin-offs with strong peer-to-peer networks.

Put all this together and you potentially have a world-class innovation precinct or cluster on your hands. But if we were to wave a wand and take the anchor universities out of the equation, then I would argue that what would be left behind would be a considerably diminished proposition. Research universities are the glue that binds them together. To be clear, without Stanford there would be no Sillicon Valley today.

The present Government, and indeed the Labour Party at the last General Election, both clearly recognised this. We've had a relatively generous Spending Review settlement as a sector, especially when we consider the wider backdrop of continued fiscal austerity and frontline cuts. We may see increasing flows of research and innovation funding flowing towards place-based consortia groups in the coming years, particularly as the Northern Powerhouse agenda is advanced.

Here in the capital, the imperative in the coming years will be for universities like King's, Imperial, UCL, QMUL and LSE to deepen our level of collaboration with one another, and with non-academic partners, to ensure London remains a global hub for cultural research, life sciences, public policy and technology to name but a few areas. The MedCity initiative, which Professor Robert Lechler has been championing, is a key example of this.

The Policy Institute at King's has also recently established a 2 year London Commission project to research and formulate responses, in the form of policy recommendations, to some of the key issues and challenges that could constrain London's future social and economic development.

It will be chaired by Lord Adonis, and we've appointed Tony Halmos, formerly a senior Director at the City of London Corporation, to coordinate the project because we wanted someone with fantastic connections across local government, Whitehall and industry, and really in-depth practitioner knowledge of what drives London's success, to help spearhead the project.

The Policy Institute's Director, Jonathan Grant, and his colleague Jon Davis have more generally been doing some fantastic work to deepen the impact pathways into Whitehall, Westminster and the wider public sector and knowledge economy, also bringing in Visiting Professors and Fellows with experience of leading complex change at the heart of government.

It's a similar case with Culture at King's, led by the inspiring Deborah Bull, which goes from strength to strength in connecting with cutting edge practitioners across a huge variety of areas in the arts and creative industries and drawing them into the life of our university.

Their success should embolden us to do even more to foster long-term collaborations with businesses, charities and public sector organisations. Such linkages should go beyond the scope of ad-hoc contracts or projects, and instead provide a durable funding base and collaboration environment for excellent research and translational endeavour to take place – while of course preserving our institutional independence and academic freedom.

Even today in some quarters of academia there can be resistance to the degree of focus university leadership place on encouraging the growth of strategic partnerships, contract research, and other forms of ‘big ticket item’ collaboration with private sector businesses.

Some of this tension and concern is quite understandable, as academics have an understandably strong attachment to the concept of disinterested research endeavour. It’s also reflective of the different mindsets and diverse professional foci of a broad and vibrant academic community.

But I would argue it’s critical for universities to position themselves to be seen as useful potential ports of call to a wide variety of businesses who may be wrestling with a particular challenge or who have a vision but need a roadmap. Where there’s mutual benefit to collaboration, and where the project or opportunity fits with our values, we should be open to working with business.

I’d like to see each of the King’s faculties developing a healthy portfolio of strategic, mutually-beneficial partnerships with industry, public service providers, social enterprises and cultural institutions in the years ahead. Done well, such collaborations will create manifold opportunities for our community, benefit the economy, and reinforce our reputational brand.

We already have a range of initiatives and mechanisms that provide a ‘sandpit’ through which talented, innovative minds in our student body come into contact with each other, and work on projects which may well plant the seeds for the business they go on to found or the discovery they will make.

The King’s Entrepreneurship Institute is something I’m particularly proud of. It’s building a really powerful network of entrepreneurs, from all walks of life, to inspire and support our students and staff in developing entrepreneurial mindsets and business propositions.

Our Vice-Principal for Research and Innovation, Chris Mottershead, will always tell you that we see our graduates being as big a contribution to the innovation base of this country as our research outputs. They’re what will drive the next wave of social and technological innovation.

This brings me on nicely to another major change agent which is altering the world of education generally and of universities in particular. This of course is the information revolution. The impact of this on our lives is self-evident to everyone in middle age. I remember well when the telephone was something that sat on a desk and took ages to dial.

The ease with which we use Android smartphones, download data onto an iPad or even video-conference seamlessly with 10 different locations at once around the world, would have startled Bill Gates or Steve Jobs I’m sure in the 1970s.

Without wishing to sound like a cyber-utopian, because I’m not, the internet has already had a profound impact in democratising knowledge and spurring productivity. But it has also fuelled the growth of an ‘on-demand’ generation with clear expectations of flexible content delivered around the needs of users. This has profound implications for universities.

While the impact of the printing press took about a hundred years to really kick into gear across western Europe, the digitisation and opening up of our research journals and data sets has proceeded at breakneck pace over the past 20-25 years. This is of course hugely welcome.

There has been much discussion about the impact of the information revolution on higher education. In the past 5-10 years, we have already seen a great growth in the quality and availability of online distance education, which I refer to as E-education.

Clayton Christensen, the eminent Harvard business academic, has played a major role in refining the concept of disruptive business models. He believes universities are a prime example of a company busily making horse buggies, not realising the motor car is around the corner.⁵

His solution is a wholesale embracement of information technologies and E-education in many disciplines. He has argued that in many cases the bricks and mortar campuses of the type we have today will become increasingly less important as the century advances.

The advent of MOOCs at the start of this decade was seen by many as the beginning of this process, a truly disruptive technology which would be the first step in destroying the market base of established university courses given on campus. Of course, as many expected, this has not quite turned out to be the case.

Most universities are moving towards a middle ground where the best of the new technologies and pedagogy is combined with continued recognition of the things that make on-campus education special. Essentially this is personal contact with lecturers and tutors and other students. In many disciplines, a laboratory or clinical ward based element also makes on-campus education essential.

The Stanford or Harvard flipped classroom model is another interesting alternative approach to optimising modern university education.

I also believe that decades from now students will still be sitting in tutorial rooms interacting with academic staff and with each other, but I think technology will enable these conversations to be even richer than they are now. My own belief is that the changes underway are more profound than the above rather comfortable 'middle ground' analysis would suggest.

I expect we will see more porous boundaries with the external world becoming increasingly prevalent in the teaching and learning environment. We should welcome and respond to the clear uplift in student expectations with respect to 'real world' guest lecturers and work placement opportunities as part of their course.

Not to move at all – to cling stubbornly on to traditional formats and reject new pedagogies – would be to have one's head in the sand! We have a duty to evolve our educational excellence, not ossify our pedagogical approaches in aspic as the world changes around us.

The second issue around education and course content I wish to discuss is durability and accessibility. Some essential truths will not alter and will be taught and understood in a similar way 100 years on as they are today. Others are changing rapidly.

When I studied medicine, anatomy was by far the major underpinning scientific discipline. Biochemistry textbooks were fairly thin and molecular biology as a clinical discipline was in its infancy. Rosalind Franklin, Watson Crick and Maurice Wilkins had undertaken their research

⁵ Clayton M. Christensen & Henry J. Eyring, *The innovative university: Changing the DNA of higher education from the inside out*. (San Francisco, CA: Jossey-Bass, 2011).

activities that led to the unraveling of the structure of DNA little over a decade before, but clinical applications largely awaited the polymerase chain reaction.

The knowledge base in many professions is altering so rapidly that the information imparted in an undergraduate degree will be out of date in significant and important areas within five years of graduation. This is recognised in some professions, with either voluntary or mandatory updating of education. One would not want to be treated by someone in my discipline, neurology, who had not kept up to date with scientific advances for the last five to ten years!

I hope that universities assume an increasingly important role in lifelong learning for the professions where appropriate, working in association with the Royal colleges, chartered institutes and learned societies.

In fulfilling this vital knowledge exchange and indeed 'knowledge refreshment' function for society, we need to utilise the advances in E-education and other rich media communications technologies to really make an impact at scale.

With the longevity that most of today's young people will have, it will be entirely feasible to have more than one major career in one's working life. Inevitably this will mean more and more mature age students coming back to university for the second and third time.

Many of these returners to university will be mature in their personalities and their experiences. They do not typically need the same degree of intellectual nurturing and pastoral support that younger undergraduates and postgraduates benefit from. Time for them is precious. They often have jobs and family commitments to balance with their studies. They are more likely to potentially opt to enroll in distance education course.

Universities and governments must ensure we have face to face and E-education programmes and funding arrangements in place that can help meet such demand and recognise the need for flexibility to reflect the diverse modes of life of such students.

The information revolution and new online education delivery models, including the flipped classroom, should become increasingly central to our endeavours. They can help us to offer really rigorous education to a much greater number of people in a way that wraps more effectively around the time demands of working and family life.

King's is playing its part in this. We've developed a whole new suite of online master's degrees which we will deliver through a King's Online platform in partnership with the global education technology business, Pearson. We've worked hard to ensure our PGT E-education programmes are as rigorous as our on-campus programmes. Thus, we've called for online PGT provision to be classified as eligible provision in the Government's forthcoming PGT loan pool scheme.

Before I move away from education, I would like to draw on some of the concepts of Michael Crow, President of Arizona State University, who has authored a celebrated book entitled 'Designing the New American University'. It's a great read and has much broader applicability for research universities in this country than the title would suggest.

The great universities of the world together in Professor Crow's view can only offer their great education experiences to a small fraction of the young people who may benefit from them. He argues that offering an outstanding educational experience through the distance E-education route may enable many more people to benefit from rigorous academic education, strengthening economic productivity and social mobility. There are of course very many more fully qualified students out there than we can currently accommodate on our campuses in London.

He also makes the point that in a number of countries, including the United States, gross inequities persist between wealthier students and those from lower socio-economic backgrounds when it comes to university entry. Entry from the upper socio-economic quartile has steadily increased over the last 20 years to well over half of all students, while from the lower quartile is stuck at around 5%.

Largely because of very ambitious outreach programmes and statutory access agreement, the situation is better in the United Kingdom but when one comes to the top 10 or so most prestigious institutions, the great preponderance of students come from upper middle class backgrounds.

Let me turn briefly now to equity issues more broadly. We live in a society where, legally and morally, young people should have equal opportunity to succeed, if they have the talent, in the study programme and career of their choice, regardless of their background.

It follows that one measure of a university's effectiveness and relevance to modern society is how well it meets square-on the challenge of becoming broadly representative of the diversity of modern society in the make-up of its student population and workforce.

At King's under the leadership of Professor Karen O'Brien and Anne-Marie Canning, we have a highly innovative portfolio of Widening Participation outreach schemes, additional consideration policies for admissions, and an increasing range of targeted bursary schemes and study support and employability programmes to help WP learners make the most of their university experience.

We also have to do far more, beyond the context of socio-economic under-representation, to address asymmetries in the make-up of our student and staff population in terms of disability, gender, race and sexuality, through positive action policies and training to tackle unconscious bias.

So we're engaged and very much in listening mode, but we recognise that King's and many other leading universities in this country still have a mountain to climb if we're truly to become opportunity ladders for social mobility, social equity and diversity.

Let me turn now to globalization and the manifest impact this is having in the university world. At the highest level, this is an immensely positive impact, but it brings with it operational challenges and added responsibilities for universities, as well as important public policy considerations.

From the earliest days of universities in the West, movement of talented people both to teach and be educated has been a key part of the university proposition. Universities have never been about national borders. It doesn't matter to the world at large that Newton worked at Cambridge and James Clerk Maxwell at King's. Their contributions and those of many others in many fields benefitted the whole world in their age and ours.

Many of the great universities of today are becoming increasingly trans-national, with significant proportions of international students and staff. Many of them now operate in more than one city, and in some case in more than one continent. Before coming to King's, I was previously Vice Chancellor of the University of Monash which operates teaching and research facilities in 7 countries around the world.

It goes without saying that a crucial element in the success of many leading universities in the west has been the relatively free flow of students across the world. We've seen enormous growth in this in recent times in Britain, but we need a student visa and post-study work visa regime that is internationally competitive with the arrangements in place in Australia, Canada and the United States.

The international graduates we educate return home with not only globally respected qualifications, which give them an edge in their domestic labour markets, but with experience of studying with people from diverse backgrounds, and of debating differences sensibly and respectfully.

It is essential that we remain an oasis of reasoned debate, a beacon of communication across nations in an increasingly challenged world. For this reason, academic boycotts are totally incompatible with the *raison d'être* of the university.

So we do a lot already, but I believe we can and must do more to contribute to international understanding and societal and economic development.

This should involve contributing in whatever way we can to securing humane, sustainable solutions to the present crises in the Middle East and playing a role in regenerating the academic base of war-torn areas of the region in future.

It may equally involve, as Labour's Liam Byrne has argued persuasively, placing ourselves at the heart of emerging relationships between sub-regional tech clusters in the UK and the rapidly growing cities and innovation precincts of China.⁶

This will bring benefits to both countries. It's not unreasonable to expect that China, even taking into account the present instability of its stock market and banking system, may still go on to surpass the United States to become the largest economy in the world within the next few years, with climbing standards of living but also growing societal challenges.

I also believe universities like King's can play a supportive role in helping China's policymakers and universities ensure their key institutions continue to become more open, pluralist and responsive to China's civil society.

China's government is presently investing 5% of GDP in science and innovation and is rapidly building one of the strongest university systems outside of Europe and the United States. While there has been very little change in the relative ranking of the world's great universities over the last 50 years, that is about to change quite dramatically.

I believe that within 20 to 25 years there will be one or two Chinese universities that may potentially rank with Oxford, Cambridge, Harvard and Yale. There could be a larger number of institutions that rank with UCL, King's, Columbia and Chicago. These institutions are open to collaboration and friendship.

At the heart of the international strategy Dr Joanna Newman has coalesced at King's is an ambition to maintain a really strong base of strategic partnerships and relationships with a relatively small number of international institutions that are either already world-class, or well on their way to becoming world class. These institutions share a similar ethos and level of ambition with regards to generating substantial social and economic value.

Indeed, we will shortly be launching a major trans-continental university partnership, called the PLuS Alliance, with two prestigious universities in the United States and Australia, ASU and UNSW, which I believe will provide considerable added value to our research area of global great challenges and ensure we work with the leading universities in developing new pedagogues.

⁶ Liam Byrne, *Turning to Face the East: How Britain can prosper in the Asian Century* (London: Guardian Books, 2013).

In closing, when one puts all of these themes we've discussed tonight together, the conclusion is inescapable – universities continue to be centred around the production and dissemination of knowledge in all of its aspects, but we have an increasingly pro-active, engaged role to play in a more interconnected, complex world.

We must do more to draw in a wider range of businesses and partners, beyond the 'usual suspects', who could readily benefit from interaction with university researchers and students, and from whom there may be useful approaches to learn. We must not be held back by overly conservative views of who we are or what 'universities do'.

We must be more ambitious in our efforts to foster an entrepreneurial, change-making spirit in our students and our staff. Students shouldn't simply be taught but truly educated to become rounded, critical thinkers with the skills, resilience and confidence to build successful careers and make a difference to the world around them.

We should see them as co-producers of a thriving learning community. Indeed, great research universities should always aspire to be the intellectual water-well where change-makers, problem-solvers and innovators in all walks of life will look to return, source ideas and exchange knowledge with throughout the course of their lives.

In short, universities must be more attuned and responsive in real time to challenges facing their communities, countries and planet. We must be bridge builders between cultures, governments and the key institutions and opinion-formers of global civil society. Our role in international dialogue and policy development is more critical than ever.

This will be essential if we are to bequeath a world to our grandchildren where they can have a reasonable expectation of enjoying higher standards of living, better work life balances, cleaner air, and longer life-spans. Indeed, we have a responsibility to bequeath these objectives to future generations across the globe.

All this necessitates a greater degree of flexibility in how we envision and deliver our key activities, and engage with external societal audiences. Thus, we will sometimes be pushed outside our comfort zones as academics and as professional staff who are used to long-established ways of doing things.

But the prize of upping our levels of external societal engagement – to thrive as institutions into the next century and to make a greater contribution to humanity – will be well worth the struggle.

Thank you for your time.