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Carlos Moedas – Commissioner for Research, Science and Innovation

Ladies and gentlemen,

It is a great pleasure to be here in Cambridge today. In March last year, I gave my first UK lecture to the Royal Society in London. I mentioned Professor Donald as someone writing new chapters in science history. Now, I finally get to meet you in person and I am very honoured.

Minister Johnson,

I think we share many views on the importance of investing in research and innovation for stronger economies. You have said, on many occasions, that you want Britain to be the best place in Europe to innovate, patent new ideas and grow businesses. I want Europe to be the best place in the world for excellent science and innovation, so I think we have a common cause.

Last year at the Royal Society, I said that I am a big fan of the United Kingdom's contributions to European research and innovation! And, in my view, your success rests on your openness. Because science is no longer a matter of national prestige or national security – like it was when Sir Ernest Shackleton set out to explore the Antarctic.

In the information age, Science is now a global endeavour that needs a global outlook to succeed. Last month, we were all inspired by the detection of gravitational waves. Now these ripples in space-time can even be your ringtone. Gravitational waves were predicted by Einstein's epoch-defining theory of general relativity. A theory that was influenced by thinkers from all over Europe.

Einstein was the youngest delegate at the first ever international conference in physics, which took place in Brussels: The 1911Solvay Conference at the Hotel Metropole in Brussels. Einstein was invited to present some of his ideas on radiation and quanta. There is an iconic photo of the 5th Solvay Conference on electrons and photons, often called the most intelligent picture ever taken. Einstein is seated next to Max Planck, Marie Curie and Hendrik Lorentz. 17 of the 29 attendees in that picture were or would become Nobel Prize winners.

In an article for Le Monde, Etienne Klein, philosopher and scientist, said: "One of the participants said to his wife in a letter, "yesterday, I had a Frenchman to my right and a Brit to my left and I had to talk to both!"" This was a new way of doing science. No politics, international and laid back. We have come a long way from the first Solvay conferences to the detection of gravitational waves. And I believe Europe must continue to deepen its research and innovation collaboration.

This is why I've made my 3 priorities open innovation, open science and open to

the world. Because, for the UK and Europe to get ahead in the information age of big science and big data, We need science without borders, We need innovation for global markets. We have achieved so much already.

The European Research Council has made the pursuit of frontier research viable in Europe: By providing grants to the world's best minds to pursue curiosity-driven research.

The UK is good at attracting international talent. Since 2014, over 300 European Research Council grants have gone to researchers in the UK. Over 100 of these have gone to Cambridge University alone: More than any other university and more than many entire countries! Because the British scientific community values openness and diversity.

Of course, the value of engaging in EU research programmes cannot be measured by the number of grants alone. The value lies in building networks: in exchanging information and experience. By strengthening our networks as a continent. By sharing our resources and pooling our investments as a community, I believe we can develop more European ideas in Europe and improve our competitiveness!

As I said earlier, science is now a global endeavour.

It's one thing to build European research capacity… But to truly benefit economically, we also need European innovation to create new markets. This is why I have made open innovation my first priority. I want Europe to embrace new approaches to creating and commercialising innovation. Because today value mostly lies in the data and not the product.

What do I mean by this? Before, companies told their customers what they wanted. Now customers tell companies. Before, the value was in the product. Now it's in the data that product generates. Before, the first and fastest companies took the largest shares of the market. Now we all want choice tailored to our individual needs.

The people who will capture value in tomorrow's knowledge economy will be Europe's innovators. Market-creating innovation is a term used by Clayton Christiansen. He points out that a lot of innovation is about improving existing technologies, or introducing improved products and services to existing markets.

Europe is good at this type of innovation. It is important for competitiveness – and I think we do a good job in supporting it –but there is another type of innovation that creates new markets. This is what U.S. companies such as Google, Airbnb and Uber have been so successful at. Their greatest innovations were their business models. Through open innovation we can innovate European business models together and create new markets too.

This all goes hand in hand with my second priority open science. There is a revolution happening in the way science works. Every part of the scientific method is becoming more open, inclusive and increasingly interdisciplinary too. I believe that is good news for science and innovation. If it wasn't for openness, if it wasn't for the dissemination of Einstein's work internationally, he may have had to wait a lot

longer than 4 years for his theories to receive their first peer validation.

While prominent German scientists, Weyland and Gehrcke, attacked Einstein's theories at every opportunity… It was a British astronomer, Arthur Eddington, Director of the Cambridge Observatory, who embraced them and enthusiastically devised a way to test them. And with that began Einstein's meteoric rise to fame.

Einstein was genuinely touched by the openness of the British, who had endeavoured to prove his theory amidst war with Germany. So he took the opportunity to thank them in an article to The Times stating: "It was in accordance with the high and proud tradition of English science, That English scientific men should have given their time and labour […], To test a theory that had been completed and published in the country of their enemies in the midst of war." So without a British astronomer's openness to a foreign scientist's ideas, Science history might have been very different.

At the European Commission, we want openness to be the cornerstone of EU research and innovation support. Already, all projects funded by Horizon 2020 have to publish results in Open Access journals. They are free to read for everyone. And I intend to make open data the norm for Horizon 2020 projects too. I believe that data generated through EU funding should be accessible and reusable by others. But focusing on open innovation and open science will have no meaning, if we neglect to adapt to a world that is: increasingly collaborative, increasingly digital and increasingly global.

Einstein was the sole author of his papers. The scientific paper announcing the detection of gravitational waves had more than 1000 international authors.[LINK][7] [europa.eu] The first Higgs Boson paper had over 5000.[LINK][8] [europa.eu] The big breakthroughs that will contribute to Europe's knowledge economy – and to solving global challenges – will not be from one person, or one university or one nation. They will be global.

The UK is an essential and valued partner in all of the EU's essential international research collaboration. And the UK's research is strengthened by its relationships with the EU and the international community. I have made open to the world my third priority because: I want to ensure the EU maintains its presence at the highest level of international scientific endeavour. I want to ensure the European Union's competitive edge in research in global knowledge markets in the information age.

And I also want to make sure researchers in Europe can collaborate with their counterparts in other regions of the world without administrative or financial barriers. For example, I agreed last year with my Chinese counterpart, a new arrangement for China to fund their scientists in Horizon 2020 projects.

So, ladies and gentlemen, If we are to reinvent European research for the information age, we must work together across Europe. We must be open to crossing disciplines and to disruption. We must foster open science and open innovation. And we must be open to the world. The students among you here, are all in the most remarkable position to make your own contribution to the

world. Many
of you have grown up in a connected world, making you the perfect people to help move us forward. So never stop pursuing what interests you. Because, like young Einstein at Hotel Metropole, your fresh perspective could be what changes everything.

In Einstein's own words: "The important thing is not to stop questioning. Curiosity has its own reason for existing. One cannot help but be in awe when one contemplates the mysteries of eternity, of life, of the marvellous structure of reality. It is enough if one tries to comprehend only a little of this mystery every day."

So I look forward to our open discussion later. I welcome your questions and I welcome your ideas.