



Communications and Digital Committee

Corrected oral evidence: Scaling up: AI and creative tech

Tuesday 19 November 2024

3.30 pm

[Watch the meeting](#)

Members present: Baroness Stowell of Beeston (The Chair); Lord Hall of Birkenhead; Baroness Harding of Winscombe; Baroness Healy of Primrose Hill; Lord Kamall; Lord Knight of Weymouth; The Lord Bishop of Leeds; Lord Storey; Baroness Wheatcroft.

Evidence Session No. 3

Heard in Public

Questions 39 - 51

Witnesses

I: Leo Ringer, Founding Partner, Form Ventures; Gerard Grech, Managing Director, Founders, Cambridge Enterprise; Susan Bowen, Chief Executive Officer, Digital Catapult.

USE OF THE TRANSCRIPT

This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.

Examination of witnesses

Leo Ringer, Gerard Grech and Susan Bowen.

Q39 The Chair: We are pleased to have another panel of witnesses. If our first panel were people at the coalface, we are delighted to have three witnesses today who no doubt have their own version of a coalface but are perhaps more involved in, or responsible for, various different parts of the framework within which AI-first businesses are operating in order to scale up. We are keen to hear, rather than from the businesses themselves, your perspective regarding the various aspects of the framework within which you operate.

I shall ask each of you to introduce yourselves and explain the organisation that you represent or are involved in, so that we have a clear understanding.

Gerard Grech: I am the managing director of Founders at the University of Cambridge and an adviser and former chief executive of Tech Nation. Founders at the University of Cambridge is a new initiative by the university to help support the entrepreneurial ecosystem, helping to accelerate the start-ups and spin-outs that are coming out of the university. We do that by giving them capital investment, intensive mentoring and access to a community of experts in the technology space, and as much support as possible to grow their companies. Previously to that, I was formerly the chief executive of Tech Nation, where we worked with the UK Prime Minister's Office to help grow digital ecosystems.

Susan Bowen: I am the CEO of Digital Catapult, which is one of the catapults supported by Innovate UK, funded through UK Research and Innovation. Prior to that, I have spent the last 30 years in the tech sector, starting as a coder, working in large corporate enterprises such as Hewlett-Packard through to more recent scale-up organisations funded by private equity out in North America.

At Digital Catapult, which is one of the catapult organisations that are funded through Innovate UK, we are focused on enabling innovation in deep tech—the likes of AI but, more curiously, recently in areas such as photonics and quantum. We have spent the last 10 years supporting AI organisations here in the UK and providing infrastructure and compute to innovation organisations to help them scale.

Q40 The Chair: I want to ask you one specific question before I move on to Mr Ringer. At Digital Catapult, is it all public funding that you use, or do you have some private funding?

Susan Bowen: There are three layers of funding. Part of the core funding is provided through the Innovate UK grant system. Another part is through collaborative R&D, where we go and bid for funding ourselves in collaboration with academia and other institutions. A third part is that we have started to create a commercial arm, which will be about creating productised solutions out of funded or academia areas, and then we will

try to sell those to the industry. There are four industries that we predominantly work in. The creative industries is one, hence why we are here today, and then there is transport, defence and energy. We will also work very closely with telecommunications and infrastructure.

Leo Ringer: I founded and run a venture capital fund called Form. We look for and invest in very early-stage technology companies. We particularly look for them in what we call regulated markets—that is, founders building companies in spaces where what the Government and the regulators do really matters to the outcome, which often means more complex markets such as financial services, healthcare and AI. Uniquely for a fund, I think—certainly outside the US—and given our background as a team in that world, we help them understand and navigate that piece, which can often be a really big challenge for entrepreneurs who are either great software engineers or brilliant entrepreneurs but do not necessarily come from a world of policy-making. This is alien to them, but has such a big bearing on their potential success that we think we can really help them on their journey to growth by providing some advice and guidance.

Q41 The Chair: In the time that we have with you, we will cover areas such as current and previous government initiatives, and then we will talk about the university spin-out review, and, finally, we will come on to the regulatory environment.

I start with a headline question: how well do you feel the funding ecosystem is working to help ensure that these AI firms get to scale up?

Gerard Grech: We heard about this from the previous panel. When it comes to starting companies, you need typically about 500 start-ups to create a unicorn; that was in the Scottish review that was done by Mark Logan. We have some great hubs for AI talent, among them London, Cambridge and Manchester, according to Data City, the Leeds-based data house that has produced many reports about this.

There is obviously a high concentration of AI companies in these cities—and I make a distinction between AI-first companies and AI-enabled companies. Given that we are just now maturing from the digital transformation and ecosystem development and entering a new wave of value creation from AI and more IP-rich businesses, the UK has a great opportunity to focus on making sure that these three cities, and others such as Oxford, have the facilities to enable more AI start-ups to be created. They tend to focus on the scientific discipline of AI development, rather than just creating AI companies for them to be implemented by large organisations.

Wayve was mentioned earlier. It recently secured over \$1 billion in investment, which is a great accomplishment by a UK company. It is still commercialising and developing its technology, so it is on the way to becoming an even bigger company. The reason it is based in Kings Cross is that Google DeepMind is based there, which attracts a lot of talent from all around the world.

There are different reasons why these hubs exist, and every effort should be made to ensure that they have the resources when it comes to data centres, AI labs, machine learning labs and drone labs—anything they need in order for them to be successful.

- Q42 **The Chair:** Let me ask you this before I move to Ms Bowen. How do you reconcile the challenge for the Government in developing this country's potential in this technology in the way that you have described, if you are arguing that it has to be concentrated in these hubs? How can they achieve that while at the same time promoting more widespread growth in all parts of the country? Do you see that tension? Can it be reconciled?

Gerard Grech: You can turn it into an opportunity. It is a delicate balance, because there is a critical mass of expertise in a certain domain, and that has taken decades to create. That is not to say that the two are mutually exclusive; when I was running Tech Nation, we were trying to make sure that we were working not only with London-centric businesses but with businesses from all around the UK. When I first started, fewer than 15% were outside London, but by the time we ended, in 2023, more than 60% were outside London.

One needs to make sure that AI companies in these hubs are able to share tools and resources as quickly as possible with other AI companies around the UK, because obviously talent is everywhere but opportunity is not. One way that can be done is through growth programmes and cohort-based programmes, where you take companies from all over the UK, mix them together and take them through a six-month or one-year accelerator programme. You are trying to build collaboration via the programmes that the Government can fund.

- Q43 **The Chair:** Ms Bowen, what is your view of how well the ecosystem is working? I wondered whether, given the role of Digital Catapult, you could give us your perspective on the government-backed scale-up programmes, including access to compute, and perhaps how the Innovate UK grant system is working. We heard a passing reference to the latter a few moments ago but earlier witnesses were not very positive, let us put it that way.

Susan Bowen: I was listening to that, so I hope I can address some of the comments.

We are in a really exciting time when it comes to some of the commitments by the new Government that have just been mentioned, thinking in particular about the manifesto commitment on 10-plus years rounds of funding. I refer to the comments that were just made about the opportunity for us to drive acceleration programmes. One-year programmes were mentioned, but we have to recognise that AI and other deep technologies need access to much longer streams of funding. My opinion is that one-year programmes or shorter terms of investment—\$100,000 was mentioned by the panel prior to this one—would not be sufficient to drive any form of scale.

On the hubs and the opportunity that we have in front of us, investment is definitely happening in London and in areas such as Cambridge, and, if we talk about the creative sector, there is great investment happening in other hubs, such as the south-west and the Bristol area.

To touch on your question more specifically about whether we have the right access to funding beyond these hubs, and whether it is right to go beyond those, we do and it is. However, there are pillars that need to exist in order for those hubs to be successful: you need the collaboration of education and academia establishments, along with longer-term investment, definitely beyond one year and predominantly five to 10 years.

You also need to have access to creating both supply and demand. This is a topic that I do not feel is given enough time, particularly when it comes to the creative industry and other sectors. When organisations are trying to create new technologies and solutions, they are doing so because either a market is about to open or there is a gap in the market that they are trying to address. That is not defined or restricted by location, so in my view these hubs often occur for two reasons: the first is access to talent, which is why you will find them centred around research and academia areas, and the second is access to infrastructure.

We have heard the word “compute” in this room, which we often think about in terms of large-scale data centres or access to processing power—we talk about the large-scale companies of this world, such as Nvidia, which provide GPU processing—but another important aspect to this is access to telecom infrastructure and the network. A low-latency network is essential to the development of AI technologies and other deep tech. In UK infrastructure, we are limited in the rollout of our telecommunications network and the investment that has happened in that space.

Through collaborations with both the current and prior Governments, there has been great investment in areas around open RAN—radio access network—which is all about focusing on security and the future state of networks. We at Digital Catapult have been setting up four or five test beds using funding from central government, as well as working with industry, to provide a vendor-neutral and access-neutral set of equipment.

Your point about access to compute is valid and definitely a tremendous question that needs to be asked, but it has to be vendor agnostic. The reality is that these large language models need access to infrastructure and compute power that allows them to span any technology owner or any company owner. The opportunity for us to put more funding into creating vendor-agnostic test beds will be critical if we are going to provide platforms for new companies to be able to grow and scale.

The Chair: We may come back to some of that in more detail when we move on to Baroness Harding’s questions. Mr Ringer, what is your view of how the funding ecosystem is working? I remind the witnesses that we are focusing today on AI-first scale-ups. That is our area of concentration.

Leo Ringer: My view overall is that the funding ecosystem in the UK is reasonably robust. I do not look around and see really big problems that need addressing from a policy perspective that are not in some way being addressed. Look at the many ways in which the public policy framework supports early-stage investment and scale-up investment. We have a number of schemes, including tax schemes, direct funding and indirect funding through funds like mine. I do not see a huge amount of headroom to massively change the picture there.

On AI-specific companies, within the context of a couple of the specific schemes that people have mentioned, Innovate UK is one that I think you are interested in. Innovate UK is broadly doing a pretty good job. There is a sense that some of the funding can be piecemeal. AI as a technology—it is not a sector, in my mind—is strategically important to the UK from an industrial strategy perspective, and we have Matt Clifford's review of AI opportunities coming. I would like to see more of an overall view of technologies such as AI pulling through into Innovate UK's funding to say, "This is a priority over here. Therefore, we will run competitions that have the following characteristics".

At the moment, it feels hit and miss to bid for pots of money that seem a bit random. It is valuable when you can see them and our portfolio companies can bid for them, but there does not seem to be a huge connection back through to an overarching sense of strategy in a sector. With AI, there is a well-defined technology that you could coalesce more focus around. From an Innovate UK perspective, there is headroom to be a bit clearer about what is coming down the pipeline.

The other factor that was mentioned earlier, on which there has not been enough debate so far, is the R&D tax credit mess that we have been through in the past two years. It was a scheme that worked reasonably well. There was fraud in the system, but the fraud was not attached to high-growth, interesting, innovative software start-ups, particularly in AI. However, it was those companies that faced the brunt of an HMRC crackdown, which was delivering in-year cuts to the funding that had been pledged to start-ups that were building in AI.

There is a challenge around the way that HMRC prosecuted that crackdown, as well as the fact that we got in a tangle over questions such as, "Are you really doing science and R&D in your start-up?". We have cases in the portfolio of HMRC trying to claw back tax credits from companies because it had decided that the science that they were doing was not sciency enough. Then we got in a huge tangle about what tax law says about what R&D and science are. Of course, AI has changed the definition of what frontier software development is, so a 20 year-old tax code that is giving R&D support for AI start-ups collided with the reality that, in my view, HMRC could not understand.

We see this across the piece, not just in relation to R&D tax credits and funding. Policymakers and regulators—in this case, the tax authority—are trying to deliver a program into a sector such as AI without having thought about what AI is or will mean for that programme. Then we get this snap-back effect when people think that something has gone wrong.

To be specific on AI, there are a couple of points to consider, but it feels to me that R&D is where things have gone most wrong in the past two years.

Q44 Baroness Harding of Winscombe: Ms Bowen, you started to answer my question, but can you give a little more detail on how effective you think previous and current government initiatives have been, or are being, at improving the availability of compute, data and other core resources?

Susan Bowen: Over the last five years, very good decisions were made, as I mentioned, on investment into networking, open RAN test beds and the acknowledgement that we needed to build more security-focused network development. Initiatives such as the UK Telecoms Innovation Network, bringing together the industry to have a single voice and to work together collaboratively, were part of a very good response to some of the challenges that we have in the UK.

We are yet to see the outcome of the current Government's Budget decisions, so I am not in a position to talk about those. I hope that we get decisions soon, as we are now coming up to a couple of months since the Budget was announced. We have not seen where that money has been allocated yet, so I cannot comment on the current Government. However, we are keen to see further investment, such as the 10-plus year cycles that were mentioned in the manifesto.

We have also seen very positive announcements in the south-west, with organisations such as SETSquared getting funding. We have also seen a commitment to scale up, but how those initiatives will play out is yet to be seen. From my perspective, we are yet to get through the spending review processes.

Baroness Harding of Winscombe: Mr Grech, what is your view? Are the Government doing enough to provide availability of compute and data?

Gerard Grech: The announcement made in August to cancel the exascale compute facilities in Edinburgh was a huge surprise to many people, given they had worked so hard on that bid, not least because this Government are very focused on growth and productivity. AI is a general-purpose technology that allows a lot of companies to be a lot more productive. We need not only the fast adoption of AI tools but to create AI-first companies, and the right conditions to help companies use such facilities to speed up their development.

In some circles there is an expectation that there will be an announcement of more exascale-type facilities in many parts of the country, not least because of the timing. I would encourage the Government to reconsider their current priorities around that.

Leo Ringer: I have always found the debate about this slightly confusing. There are probably three or four different arguments going on about why we need compute in the UK and what we need. There is an argument about the very specialist, frontier capability for science-based,

and probably university-based, teams to do the science that this compute capability can deliver. That is the isolated question of, "Do our universities have access to that?". For me, that sits within the question of the broader £15 billion or so of public funding for blue-skies R&D. It is a subset of that question; it is not really a subset of the question about AI as a sector. The answer is that probably we do, and the review into the future of compute, which concluded a couple of years ago, makes that case well.

There is then the question of whether we have enough horsepower of infrastructure in the UK data centres and access to low-latency compute, which is a more general problem for any scaling company that will need serious compute demand. There is an argument about having that in the UK, and I think we are shockingly bad at building physical infrastructure in this country. The data centres and grid connectivity are unfortunate examples of a much bigger problem around our ability to build things. That is a huge problem that is also probably separate from the AI question, but it is a big part of it.

Then, as Gerard touched on a little, there is the question of what signal is sent when you announce and then cancel a project such as this. A lot of the push-back from the sector has been, broadly speaking, that it sends a bad message to entrepreneurs and to the rest of the world about how serious the UK is about AI specifically or frontier technology in general.

There is an open question as to whether £1 billion is worth the signal, from a spend perspective, but we need to consider the communications around this. A fiscal decision was probably made somewhere in the Treasury, but it has not really bled through. We need to ask what message is heard by the entrepreneurial community in the UK and internationally, and whether it is one of support. There is a big disconnect somewhere between the fiscal decision and the ROI decision from a business-case perspective. What do people then think about this when it lands? I think they are deeply unimpressed in this case.

Q45 **Baroness Harding of Winscombe:** I have a follow-up question about data. How should public data resources be deployed to support AI innovation in the UK?

Gerard Grech: Make as much public data available as possible, because a lot of founders like using lots of data to train their models. The UK has a great track record in making a lot of datasets open. However, I would go even further and encourage the regulators to create the conditions under which founders can test new business models using some of the data that they have, which is perhaps proprietary, and allow them to build small language models as a result of that.

There needs to be much more porosity between the regulators and the entrepreneurs and innovators. We should not treat those two domains so differently. That is where the sandboxes come into play. At one point, the FCA was the envy of the world because of the sandboxes that it created 10 years ago. Why has not that followed through with the other

regulators, given that AI will now impact many of them? That is how I would do it, but I am sure that my fellow panellists have other ideas.

Baroness Harding of Winscombe: Reading the briefing we were sent for this meeting, my heart sank when I saw the quote from the Secretary of State, who said, in the Science, Innovation and Technology Committee, that it would take beyond one Parliament to establish a national data library. Is that the wrong approach, if it will take that long? Should we do something different that provides a more agile way to get public data into the innovation space?

Susan Bowen: I am very happy to answer that question—I could talk about it all day, but I will try not to.

There are two parts to your question and, if I may, I will comment on the first part. The national data library and access to data will be critical to all of us for the future. There are obviously very serious concerns about the security: why would areas of the NHS or general practitioners provide that data for somebody to put it together and make it available to people to use when playing with their technology systems? That is the essence of what we are being asked to do.

The advocacy, which is critical for us to accelerate the way that we build large language models and then AI compute on top of that, is to start working very hard on curated datasets and to identify the social and economic challenges that we are trying to address. If we start from the problem that we are trying to solve and identify the datasets that we need to solve it, we will go a lot faster than the end-state goal of a national data library. I am fully behind, as is Digital Catapult, the need to build data libraries that have policy and regulation around them.

On the pace at which we can go—we contributed to Baroness Jones's recent piece of work on this—I strongly believe that we should start by curating datasets that allow us to do spot testing and to create the AI-first developments based on the outcomes and solutions that we are aiming for.

Baroness Harding of Winscombe: In layman's terms, eat the elephant one bite at a time, rather than try to do the whole thing in one go.

Susan Bowen: That is the quickest way of saying it.

Baroness Harding of Winscombe: That is extraordinary.

Gerard Grech: I will add one small point, which I think was touched on in the earlier panel. We have really missed the boat on pretrained LLMs. The whole of Europe has missed the boat on that.

The Chair: Is that including France?

Gerard Grech: The answer is a controversial yes. What I am trying to say is that the layer on top includes the applications and the small language models that come from proprietary datasets, and which the Government have access to. If we are serious about transforming public services, that is where there is some magic in how we can come together to make these public datasets available or to give privileged access to

certain founders and developers, which can allow them to develop very specific applications for hospitals or education departments. That is where opportunity is being missed.

Baroness Harding of Winscombe: Mr Ringer, do you have anything to add on the subject of data?

Leo Ringer: Only on the question of time. If you were to ask any start-up founder whether the length of a Parliament is a guide to getting anything done, they would have a very different expectation. My understanding is that departmental and regulatory reluctance to give up or provide control of datasets is at least one part of this. Somewhere, the incentives need to be created for that to change. There are plenty of ways you could do that, but the idea of a five-year window to gather data and curate it properly is unacceptably long in the eyes of the founders that we invest in.

Q46 **Baroness Harding of Winscombe:** I have a final follow-up question. Are there resources beyond compute and data? Susan, you referenced the telecoms network, which is dear to my heart, but I read recently that some of the issues with scaling up compute are more to do with our power transmission network than anything else. What are the underlying core resource constraints that we should think about, if we are to build this AI-enabled layer for the country?

Susan Bowen: Having just spent eight years building data centres in North America, including Canada, I feel able to answer that question. Fundamentally, access to flexible energy sources, and to energy itself and power, is extremely limited in certain areas of the country. If we were looking at building data centres 10 years ago, we would be looking at 1 megawatt or 2 megawatts and feeling happy with that. Now, you would not go anywhere near a data centre if it had less than 440 megahertz. We have to think about our energy infrastructure.

It is extremely pleasing to see the level of investment going into flexible energy sources. We have a very good opportunity with water and cooling, given our proximity. There is huge ambition for flexible energy sources and new modern data centre builds. We have an opportunity, under the new Government and new structures such as Great British Energy, to support those infrastructure and industrial strategy developments. All of that would enable AI-first organisations to thrive, which is about bringing together the different aspects of policy into one place.

Q47 **Lord Hall of Birkenhead:** Let us now talk about university research and turning that into commercial success. Some 18 months ago, there was a university spin-out review. We have heard that progress on implementing that has been slow. Mr Grech, is that the case? If it is slow, where do the Government need to prioritise to facilitate growth?

Gerard Grech: The word "slow" is relative. Over 50 universities have signed up to the recommendations and they are in the process of implementing them. At the University of Cambridge, not only have we

implemented a number of programmes to accelerate the AI start-ups and the AI-based and IP-based spin-outs but we have gone further by looking at the IP policy of the university. Among the IP policies of universities in Europe, Cambridge has done well over the last 20 years because its IP policy gives a lot of freedom to entrepreneurial academics.

In one of the latest reports from the Royal Academy of Engineering, the average stake in a Cambridge spin-out is about 10%, versus the national average of about 23%. That is important, because you want to attract investment and more capital. If the university's stake in the company is too high, it will prohibit and alienate investors from coming in and investing in the company.

We have gone further at the university by increasing the transparency, consistency and speed of the spin-out process. We have now agreed a number of landing zones for anyone looking to create a company from the research. This is with Cambridge Enterprise, the innovation unit of the university.

Another point is that the landing zones are making it easier for any entrepreneurial academic to say that, for a software company, it is 5% dilutive, 10% on advanced materials, 15% on biotech and 20% on therapeutics. This is dilutive equity, whereas in the US it is non-dilutive up to series A. It is very competitive, so we need to change the narrative. Universities here in the UK are doing everything they can to be a lot more wary of this, but Cambridge is leading the way.

Lord Hall of Birkenhead: When you say wary, do you mean that they are taking too much of an equity stake? What is it in the US? I think it is between 3% and 5%.

Gerard Grech: At Stanford, it is 5% non-dilutive up to series A. In the UK, I can speak only for Cambridge, where it is 5% dilutive for a software business. There is a real recognition of this. The spin-out review helped by acting as a catalyst to make universities realise that university ecosystems are very important to any economy or jurisdiction for growth. I firmly believe that real evidence of that is the fact that we are investing in putting together multi-stage programmes to help companies go from a research-based initiative or project and into a commercial venture, and helping them to connect with investors.

Technology transfer offices, as they are well known, need to become innovation units. Rather than becoming regulators, to some extent regulating how much equity they should take, they should become service-led and enablers of value creation, rather than enablers of value capture.

They obviously have a role to play in capturing some of that value, because they have been an integral part of the research process. That is happening more and more, but, honestly, we are probably a few years behind the US, in particular MIT, UC Berkeley in California, and, to some extent, Harvard. An evolution is happening, but it could go faster in some universities.

Lord Hall of Birkenhead: I have a couple of other specific questions

but, Ms Bowen, is there anything you would like to add on the role of universities?

Susan Bowen: I agree with what has been said but will make some additional points. There is a big difference between being in research and creating ideas and productisation or commercialised management, which I am sure everyone in this room knows and understands well. Universities do a great job of nurturing ideas and enabling talent, but where we then struggle is the conversion of that into commercialised products. There is a role for the Catapult Network, of which we are a part, to do more on that. If we do more around that, we can then help.

Some of the catapults have been around for 25 years. The National Composites Centre in Bristol, and its equivalent, the MTC, working in the defence sector in the north, are great examples of where they can take that translation into very strong products and then out into the defence sector. That is for public good as well, particularly when it is tackling security. I am not sure that we are shining a light enough on those positive stories, which would then give much more ambition to the university networks and graduates who are coming out with good ideas. We have a responsibility to shine a light on that good work.

Lord Hall of Birkenhead: Mr Ringer, do you have anything to add?

Leo Ringer: Only to echo a point that was made already. If we receive a funding pitch from a spin-out, the first thing we will do is open what is called the cap table—the shareholder register—and see how much equity the university wants. Unfortunately, more often than not, it is a non-starter, and we would not even take the call.

Lord Hall of Birkenhead: It is too high.

Leo Ringer: It is up to the university to decide that, but for us it is just too high. The universities have a choice: do they want to hold on to a big chunk of nothing or have a smaller slice of what could be a huge opportunity? That is their decision to make.

The review was a very good exercise in unpacking those issues. The question for policymakers probably is whether the Government want to take a firmer hand if they think that there is a policy problem in the universities receiving public funding for that research. That is a question for the Government.

On AI, we have seen a couple of tangles where the training of data for products or services is separately owned or separately licensed from within a research institution and is then being productised by the spin-out. For AI spin-outs, the sets of issues are 99% the same as for non-AI companies, but there are a couple of areas where there is an AI-specific consideration. That goes back to the conversation with the previous panel on ownership, IP and copyright.

Q48 **Lord Hall of Birkenhead:** Mr Grech, we heard that, in California—as also happens in France—there is a much closer relationship between unis and business. In France, a PhD person can move from academia into doing part of their work in industry. The same thing seems to happen in

California in its own way. Should we be encouraging that more?

Gerard Grech: For sure. This is about the high porosity between the market and academia. How do you create the conditions under which businesspeople and investors can come in and engage with the research that is happening in the university. Making time in industry as part of the tenure for a professor would go well in some circles.

There are two things to point out. You have people in academia searching for the truth in many scientific areas and then you have the market. There is a bit in the middle where it is all about derisking the technology, the team and the product—and that is a cost that, right now, the university is having to bear immediately. In some cases, they are not even going far enough, because it is not necessarily a priority.

If we are serious about growth, and the next 10 years versus the last 10 years, this is such a big area of growth and opportunity for this Government. Some £20 million has been set aside for a proof-of-concept fund. When the Government look at research funding, they should look at research funding plus what it takes to make that research become viable and useful to society. Whether that is in the UK or globally, it does not really matter; the point is to ask how we spend more time and effort to create the right conditions for that research to come out of the university faster than in other parts of the world. That is what I call infrastructure.

In our case, we are building specific programmes that help AI companies spin out faster from the university. Not every university has that capability, so that ought to be funded. The investors will not fund it; they will just look around and pick the best. To go back to the point that Susan made, the investors will not necessarily spend the money in nurturing the researcher, who has spent so much time developing the technology, to bring it out and make it into a commercially viable product.

I say we should deploy that money—the proof-of-concept funding—as quickly as possible. I think £20 million is not enough, given that the research budget in this country is over £6 billion. Putting £20 million on the table for a proof-of-concept fund does not make any sense. It must be significantly larger. We must not think of research in its purest domain; we should think about how to translate it and make it useful for society. That is the big emphasis in the States that you do not necessarily see as much in Europe and the UK.

Lord Hall of Birkenhead: Ms Bowen, do you have anything to add from your perspective on the symbiosis, or closer working relationship, between universities and business?

Susan Bowen: The opportunities that have been created through programmes such as Innovate UK's BridgeAI programme have been really well received. That is bringing universities and other establishments and opening the door to enterprise.

The other side of it is that, quite often, if you get more involved at the early stages—TRL levels 1 to 3—and bring industry into those academic

developments early on, you can then move into the application and adoption of those programmes. You have already created the market, and you are not conflicting with the industry that is itself trying to solve that problem.

It comes back to the points made earlier about universities needing to think differently about the equity release that they have in these projects if they are only going to scale. It is highly restrictive to private equity firms to invest where the university has such big stakes.

Q49 Lord Hall of Birkenhead: Mr Ringer, I have one final question. We also heard evidence suggesting that entrepreneurship training ought to be promoted much more. Do you have a view on that?

Leo Ringer: That is a good question. Part of me thinks that it makes perfect sense, because what entrepreneurs have to do is not obvious. No one tells them how to do it; they go and figure it out. Apart from some characteristics such as tenacity and grit, we can take for granted the sheer mechanics of what it takes to start and found a business. To a degree, the basics are a question of education. As to whether we need entrepreneur-specific programmes, and whether that stuff is learnable or teachable by and to people doing their own research, I am not so sure.

I am smiling slightly because my first boss was Richard Lambert, the CBI director-general. He wrote a review of business-university collaboration in 2003. I remember reading that and thinking that it had a lot of the answers to these questions; it turned out pretty well. For universities, the challenge is around how seriously they want to take the hand-off to entrepreneurship.

There is one caveat with the US comparison. In the US, the pattern that VCs seem to like and talk about is the college drop-out; it is the person who stops their course and then starts a company. It is almost in spite of having not finished their studies that they are successful. I do not think that we have in the US a system where there is a seamless hand-off from graduates and post-docs who incubate this research in the university and then commercialise it. That probably does not happen as much as we think, compared with the other route. There should be some caution on that comparison.

Lord Kamall: Leo, you said that when you look at whether to invest in some of these start-ups or scale-ups—Susan addressed this as well—you look at the percentage that the university wants to help you decide. Have you had those conversations with universities? Have you said, “Hey guys, look at what you’re doing; you’re stopping us investing”, either because of greed or because they want to take a large percentage of the scale-ups and start-ups? What has their response been?

Leo Ringer: We do occasionally, but this conversation was had on a grand scale in the review that was talked about earlier. I do not think that universities are unaware of this being a blocker to VCs coming in. Those that are clinging on to 30%, 40% or 50% of equity, even for software companies, are doing so knowing that that comes at the cost of

funds investing in those start-ups. Institutionally, they are just not capable of aligning their incentives with the incentive of the company.

Someone mentioned earlier the idea that we have not had enough success stories to show universities that they can still have a good outcome economically by owning a little less but having more shots on goal. That is the venture model: in our firm we will invest in 30 companies, but the reality is that, at the end of the day, a small proportion of them will deliver the majority of the economic return. It is what we call the power law distribution in venture capital. The mentality of universities seeing their spin-outs as a diversified set of shots on goal, with those that succeed reimbursing the rest, has not seeped in. It is a mentality and a culture, as opposed to awareness of the issue per se.

Gerard Grech: I think the evidence is there. Looking at the Cambridge spin-outs, we have had 23 unicorns coming out of Cambridge, which is by far the highest in any university town in Europe. It is because of the IP policy that exists in Cambridge, which gives entrepreneurial academics freedom to grow businesses out of their research.

Q50 Lord Storey: My question is on the regulatory environment, both positive and negative, and how you see it impacting AI growth. We know that US companies are less likely to invest in heavily regulated foreign markets, but I was interested to read in our notes that "AI hyper-centres require forward-looking regulation to attract researchers and give them a safe harbour to experiment without the fear of personal legal liability".

Leo Ringer: I agree that the right kind of regulation can be an enabler for markets. I do not agree with the characterisation that wherever regulation goes, technology and innovation die. I think the characterisation of the US as the land of the free-market entrepreneur, unbound by any government body or regulation, is completely untrue. The US has a highly litigious and highly regulated market, with both federal and state laws. There are, I think, nine financial services regulators to deal with. Insurance licences are on a state-by-state basis and if you get it wrong you get sued and go out of business. The idea of the US versus UK contrast is a false start.

One of your witnesses talked about how Silicon Valley is nearly 3,000 miles away from Washington, DC. In London, we have the centre of regulation next to the centre of start-ups. That is an asset. If you have regulators who are well-resourced, well-incentivised and have the frameworks around them to understand and enable innovation, that is an asset for the UK start-up base rather than a liability.

We have done a lot of thinking about this. We see all the time in start-ups—whether in drone technology, medical devices or financial services—the same issues colliding. An innovation is brought to market using all the funding and talent that we talked about, and then it hits a regulator that does not have either the incentives or the resources to understand and enable it and instead has the incentives to be risk-averse. We have a lot of recommendations around how to solve this from our work with individual start-ups, but, overall, it is about seeing the regulatory

apparatus as an asset and not a liability, and asking how we can harness it, rather than avoid or get round it.

Susan Bowen: The announcements on the Regulatory Innovation Office are encouraging. There is a good opportunity to bring regulation into the R&D cycles earlier. If AI-first organisations are clear on the regulations that they will have to work within and do them early enough, there will not be all the repetition that was mentioned in the previous panel, where you can lose a billion by having the wrong dataset in your next release of a minimal viable product. You just cannot repeat those kinds of mistakes. Bringing the regulators in can be, rather than a friction to scale, an enabler to scale.

Gerard Grech: To add a bit more colour to what I said earlier, if we are serious about being pro-growth, and now that we have left the European Union, we must think about our regulators and equipping them with everything they need to be a lot more data-driven and AI-driven, and understand what will happen in the next 10 years. Can we find a way of opening them up, making them more porous for innovators to come in and talk to them?

In my experience, which may be too heavily in the financial services area, fintechs that have gone in have found the environment to be a bit hostile—though I understand that that is for good reason. Innovation is a human business. Can the Government find a way of convening all the regulators in one place with cutting-edge innovators and get them to realise that, if we are serious about growth, we have to realise how to open the door and innovate within regulators, rather than go down the route of the AI Act in the EU, which is risk-based?

We need a responsive regulatory regime that will learn from what is happening in the market. That is nuanced, obviously, but I think it can happen. The UK has a great opportunity to be between the US, which is known to be very pro-innovation, and the EU, which is known to be very pro-regulation. It has a very good space to occupy right now.

Lord Storey: We are likely to have an AI Bill at some stage to support growth and innovation by strengthening public trust and giving business confidence. Are they mutually inclusive or exclusive?

Leo Ringer: I will have a go at answering that. I think they can go together. I was at a dinner recently where this exact question came up. The challenge for model developers and those building use cases is that people are now looking at the social media experience and the trust question. The public concern is there and so it must be met.

I am less worried about the overarching AI safety-focused Bill, because there are ways of dealing with that. I spend much more of my time worrying about each individual sectoral regulator's interpretation of that and application to a specific company. The companies that we see building and succeeding are not doing so while wondering about an overarching AI Bill. They are thinking about, in wanting to fly drones or to develop lab-grown meat—and there is a lot of AI-driven work behind

that—how the food regulator will determine whether the AI they used in devising how to grow meat at scale in a lab is acceptable.

That is not a question of an AI Bill but of a set of people at the FSA who are empowered and well-resourced to do the work to understand it. If we all stare too hard at the overarching AI Bill question, we lose sight of where the rubber hits the road for each individual business building its technology and thinking, “Can I get this to market? Can I sell this to consumers, or will the regulator get in the way?” We would then, to a degree, miss the wood for the trees.

Susan Bowen: For me, it is not about the development of the AI models and tools but the data. Ethical access to data should be part of that regulation and policy. That is more important than the freedom for the AI developers and the application of the products. That is what it will be important to be explicit about.

Gerard Grech: I have a few words to add to Leo’s point. Properly equipping our regulators is something that we ought to take very seriously, because of how each regulator interprets the impact of AI, especially in the food example that was given. We cannot afford to have inconsistency between the regulators when it comes to AI. If there is any way that we can better equip the regulators in that regard, it will be a good thing.

Q51 **The Lord Bishop of Leeds:** Ms Bowen has touched on my question in her comment about ethical access to data. Running through both panels today has been the issue of caution on many parts in the face of innovation. Are we right to be cautious, particularly about data security? It is an innovative area of life and business and, by definition, we do not know where it is going. Is it justified that, when industry and entrepreneurs are trying to race ahead, there is a cautionary pullback to say, “Hang on a minute, is this safe?” I will accept a yes or no answer.

Leo Ringer: Yes. We spend quite a lot of time explaining to start-ups that we back why policymakers arrived at some of these decisions around things such as data security. These frameworks are in place for a reason.

Entrepreneurs just want clarity. Where the dial is on anything—whether that is information security or product safety—is less relevant than there being a dial with a clear number on it that they can work around. I do not think that many entrepreneurs wish for even lighter regulation or deregulation in the traditional sense. They just want clarity and certainty that they can go off and build their business around.

Susan Bowen: I repeat what I said earlier. Bringing industry and regulators in early to innovation and innovation hubs will make the biggest difference in confidence, as those innovators take their products to market.

Gerard Grech: The UK is well-placed in being quite nuanced about this. It led the way with the AI Safety Summit, just over 18 months ago, and clearly is a hub for a lot of AI innovation outside San Francisco. I would

encourage us not to be all that cautious, if we are putting the right precautions in place between the innovators and developers and the regulators. That conversation needs to be a bit more open and structured. I have seen it before. It can unlock a lot of value in certain ways, but I do not see that happening at the moment.

The Lord Bishop of Leeds: I would like to know why not, but that is probably too long a conversation.

The Chair: Do you have a fairly short answer as to why it is not happening?

Gerard Grech: It is partly cultural. How do you transform cultures in regulators? One of the panellists earlier talked about how they are all about de-risking everything. How do you get that nuance between consumer protection and enabling businesses to grow? That is a very delicate position to be in. Some of the best ways to do that are by creating innovation units within the regulators that can have that conversation with the developers and innovators and be able to decode and encode what they are saying, so that nothing gets lost in translation with the main regulatory team.

That has happened multiple times in the private market, where a company is trying not to cannibalise itself with its own business model. It is the same principle. If we can bring that in and make it acceptable for them to have innovation units that really understand the needs and wants of the innovators, that would be a good thing. I do not see it happening much in Europe. It could be an edge for the UK.

The Chair: I thank all three of you for giving up your time this afternoon. We have taken up quite a bit of your time, as you were good enough to listen to the panellists before you. It has been hugely helpful. Thank you.