

Science, Innovation and Technology Committee

Oral evidence: Innovation, growth and the regions, HC 538

Tuesday 11 March 2025

Ordered by the House of Commons to be published on 11 March 2025.

[Watch the meeting](#)

Members present: Chi Onwurah (Chair); Emily Darlington; Dr Allison Gardner; Steve Race; Dr Lauren Sullivan; Adam Thompson; Martin Wrigley.

Questions 63 - 127

Witnesses

[I](#): Duncan Johnson, CEO, Northern Gritstone; and Irene Graham OBE, CEO, The ScaleUp Institute.

[II](#): Henri Murison, CEO, Northern Powerhouse Partnership; and Dr Kath Mackay, Chief Scientific Officer, Bruntwood SciTech.

Written evidence from witnesses:

- [Bruntwood SciTech](#)

Examination of witnesses

Witnesses: Duncan Johnson and Irene Graham.

Q63 Chair: Welcome to the second session of the Select Committee's inquiry into innovation, growth and the regions. This morning, we examine a question that has bedevilled growth generally and regionally for decades, or you could say for centuries, which is access to finance and infrastructure. We are very pleased to be joined for the first panel by Irene Graham, the chief executive of the ScaleUp Institute. Duncan Johnson is joining us remotely. He is the chief executive of Northern Gritstone.

I will start with a question to each of you and then pass on to members of the Committee. Irene Graham, could you tell me what you see as the main barriers to accessing finance for start-ups and scale-ups in the science and technology sector?

Irene Graham: Thank you very much, Chair. I am delighted to be here today. The ScaleUp Institute, as its name indicates, is very focused on our scale-up economy, which is around 34,000 of our SME community today that generate over 55% of that SME economy, at £1.4 trillion, so it is very important that we get this right in terms of their needs. Access to greater capital, which I will come on to, is one of the key challenges, but we should not forget that access to markets, access to talent and access to space to grow are also critical. In looking at access to growth capital and investment, we should not forget that procurement is part of that as well. It is something that the Committee should look at in future reviews.

In our work, we have looked at sizing the overall growth capital gap for our scale-up economy across the country. In 2020 we estimated that to be £15 billion per year, with the alignment of the covid dynamic adding another £7.5 billion to that long-term growth capital gap. Some of the critical questions for us are: do we have the scale of funds that we need; are they coming in early enough to our scale-up economy as the life sciences and deep tech businesses grow and scale; and do we have the right institutional funds coming in? Over the last decade our institutional funds, which used to invest around 50% in equity, have reduced to 4%.

There are challenges in terms of accessing capital. Do the investors know the sector, and are they connected to the sector? If you are further away from London and the south-east, your inability to access the capital goes up; around seven in 10 of our scale-ups today do not feel they have the right amount of capital to fuel their growth. Many of them—six in 10—believe that money is staying in the south-east. How do we build the regional capability and connect the funding into our localities and the life sciences and science and tech community?

We have been very successful in raising funds from overseas. Looking at our industrial sector strategy overall, the majority of money coming in from series B onwards is from international players. How to get our UK



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community and funding available towards those UK businesses is critical, and being able to access that from a UK perspective.

Very good initiatives are taking place. The permanency of the British Business Bank is absolutely critical. There is the British growth partnership and how that will crowd in institutional funds, alongside the Mansion House reforms. We will have to build at scale the regional funds that the British Business Bank has, how we develop those further and the work they do around the country with a variety of our different private sector players.

Innovate UK has a critical function in terms of the early-stage risk capital for our life sciences community. The LIFTS initiative has obviously been born of the life sciences scale-up review. It is an important initiative that we must see continue, similar to the breakthrough fund. There are lots of different varieties and planks of opportunities to unlock the investment. We have to see that translate into the businesses and connect to localities across the country.

Q64 Chair: Thank you, Irene Graham. As part of your response, you posed a lot of questions. How do we get access to capital? How do we ensure that the capital which is there is focused on scale-ups? How do we get the British Business Bank to be more successful? Forgive me, but we have been asking these questions for decades. You have been at the ScaleUp Institute now for nine years. Should we not be seeing some answers to those questions? What is different now that you expect to ensure change, in terms of Government policy or the geopolitical situation? You talked a bit about pension funds and access to capital. The Government are specifically looking at consolidating defined contribution funds. How can the Government ensure that more of that capital goes to investment in our innovation economy, particularly across the country?

Irene Graham: To be clear, I think there has been a lot of forward movement in terms of the initiatives that are in play by the current Government. The importance of giving the British Business Bank permanency to invest across a cycle of growth is absolutely vital. The importance of the British growth partnership—a new vehicle that is going to be established that will be able to crowd in institutional money—is absolutely critical in building the scale of capital needed across the country and across our sector. These are very important, game-changing initiatives, alongside the Mansion House reforms and compacts, that are seeking to unlock that institutional funding.

The vehicles that we currently have in the British Business Bank and Innovate UK are going to be really important. How they partner with our private sector players as we seek to make sure the right capital reaches into the local environment is a really critical stage and a critical step forward.

Q65 Chair: But how will we know that it has been a success?



Irene Graham: You will notice. We are beginning to see some of the players like Phoenix and Schrodgers collaborating with the British Business Bank and with each other to develop funds. We will start to see it as we see more investment coming from UK players into our scale-up economy and tracking that overall. We will start to see it in what is already happening with Northern Gritstone and what is emerging in the south-west and Scotland, some of the innovation funds that are being established, with local pension funds collaborating with the university.

You will start to see new funds emerging. We should also see how that comes into the marketplace overall and backs the businesses that are growing overall. These are important planks for the future, and ones that we must double down on and deliver to. They are very important initiatives.

Alongside what is happening in capital markets, there is a huge amount changing. There is the listings reform. New vehicles are coming online in terms of what the stock exchange and others are working on in PISCES to try to open up private sector capital to businesses across the country.

Q66 **Chair:** You mentioned Northern Gritstone, so let me now turn to Duncan Johnson, chief executive officer of Northern Gritstone. Let me ask you the same question with regard to the barriers to accessing finance for start-ups and scale-ups, particularly in the science and technology sector, and what role Government should play in addressing those barriers.

Could I also ask you to think about how the finance that is available—the UK has the second biggest finance markets in the world—is better directed to science and technology start-ups and scale-ups? The economist Mariana Mazzucato has argued that too much capital market funding is going to the financial instruments and trackers, rather than to the productive economy. How can we see that change?

Duncan Johnson: Thank you very much, Chair. That is an enormous question. I will have a go at answering some of those points.

The reality is that money likes going to where it has made money before. The early-stage venture sector in the UK has not produced as good a return as other areas. If you are a private market allocator of money, you will go to where you have made better returns. I remember at a dinner with David Willets about 10 years ago he berated me for investing in non-life science and deep-tech businesses. I said, "The reality is that I can't raise money for those other areas because we don't have the track record that you have in private equity or private credit." We have a situation where other areas have attracted the capital because they produce better returns. We cannot ignore the profit element if we want to crowd in private capital. It has to produce commensurate returns for the risk it is taking. That is really important.

At Northern Gritstone, we are a manifestation that people are willing to take on that risk. We went around it by talking about profit with purpose.



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It is not all about purpose; it is profit that has purpose, and the two are important. That was important in us raising the capital. As I think was mentioned, 60% of our capital has come from pension funds. A large chunk of that has come from local authority pension funds, who can see the impact we can have, initially locally but then regionally and then UK-wide, by what we do successfully.

It is important that we produce what I would call great product—great businesses that are capable of scaling and capable of being competitive on a world-class basis. For that to happen it is not all about money. It is about some of the other things that Irene mentioned, which are talent, space, infrastructure and culture. They are just as important but are not quite there yet either. Capital is one element; there are other elements that matter as well. We are making great progress. The very fact that Northern Gritstone exists is proper progress if we are looking for actual examples of the direction of travel.

Chair: We will look at infrastructure, transport, and so on later on this morning. For the moment we are going to focus on access to capital.

Q67 Adam Thompson: Good morning, Duncan and Irene. It is nice to see you today. We hear a lot, and we have had a lot of discussions in this Committee recently, about the innovation valley of death—the bit in the middle technology readiness level, where good ideas go to die. I am intrigued to hear your thoughts about whether you think the Government's proof of concept fund goes far enough to support innovators through that valley of death, and then how we can use the fund specifically to support regional growth.

Irene Graham: It is a great question. The proof of concept fund is great, but quite a small amount. The reality is that you have to look at the components of different pockets of Government funding at the moment. The proof of concept is one. Then you have Innovate UK and its grants and innovation loans. You then have what the British Business Bank is doing with regional angel programmes and regional funds. What we have to do is connect that capital. This is not about multiple funds, but how we make sure that the fund is followed on.

If you have the proof of concept fund and it actually proves the concept, and it works, how are we going to then connect it to the next level of funding, which might be an innovation loan or an angel funder that is backed by the BBB? That will be critical. The proof of concept fund is great, but it is a small amount for what we really have as the opportunities ahead of us. You have to get that connected.

The other thing that we hear quite regularly from businesses that have had a proof of concept, whether it be through a grant project by Innovate UK or indeed this initiative, is that there is then the opportunity to buy from that business. Are we doing that well enough from a public sector point of view, particularly if you look at the life sciences environment? There is real opportunity there.



Q68 **Adam Thompson:** Brilliant; thank you, Irene. Duncan, do you want to come in on that?

Duncan Johnson: The point Irene makes about the scale of the proof of concept fund is absolutely spot-on; £40 million across five years is £8 million a year. That is not a proper amount of money for this. If it was £40 million a year, I would still be saying it is not a proper amount of money. The scale of it is not where we want it to be for the ambitions we have for turning one of the UK's global-leading positions, which is research coming out of our research-intensive universities. We are No. 1 per capita in the world. If we think putting in £40 million over five years is the right amount, that to me does not match off quite right. There is a scale issue.

The other issue is around what I describe as getting businesses match fit and ready to start the journey. One of the areas we have had to invest in, and we want to invest in, very early is before businesses ever start the journey of leaning in, with mentors and with our talent and growth function, trying to help entrepreneurs, founders and the teams to be ready for the race. It is a race, and to be successful and to get through the valley of death, you need momentum and commercial traction. The earlier you can get that, the better. If you can start the race fitter and better prepared for it, you have more chance of being successful. That is one of the areas that we are trying hard to lean in on, before stuff ever emerges from the universities. It is that bit of the journey.

Q69 **Adam Thompson:** Building on the points you have just made, particularly about the funding pipeline, how do you believe that Government support should be structured so that we can de-risk the private sector investment in long-term innovation?

Irene Graham: As a Government it is really important that we maintain and make consistent and permanent the agencies we have. I have mentioned the British Business Bank. Innovate UK plays a critical role in this commercialisation; we need to make sure that has the permanency and scale that it can bring. To Duncan's point, it also has IQ that helps the commercialisation stage. It has its growth and scale-up programme, which is really leaning in very proactively to the businesses that have the highest potential to go global and make a significant difference.

In one sense it cannot manage our most innovative businesses. The private sector is starting to bring in high-growth teams and account management. You see it with a number of the banks. They are segmenting and being laser-like, as Duncan says, in the way in which they seek to support the business through all its different needs. In the UK, Scotland does that well, Wales is doing that well and Northern Ireland is doing that well, but in England, we don't really have a proper local level of account management structure that spots the businesses early and then helps them to access public resource effectively. That is something that could be done using existing resources, but better and pointed towards those businesses, including the sort of concierge service



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that France does on top of that. There are practical ways that you can get to the businesses early and then hook them into the public and private resourcing.

Adam Thompson: Duncan, do you want to add to that?

Duncan Johnson: I think those points are all really well made. One of the things that surprised me most when setting up Northern Gritstone was the thin nature of the local ecosystem for helping businesses accelerate through. That is one of the things where we spent a fair bit of time at Gritstone trying to crowd in a quality ecosystem around the businesses, in terms of accelerating that journey.

One of the reflections of the north-south lack of level playing field has been how that ecosystem is very concentrated in London. London is only two hours away from Leeds, Manchester and Sheffield, but sometimes it feels a lot further away than that. Having it as a local thing matters. Starting up businesses and scaling them up is what I describe as a contact sport, and it needs to be local. In places that do that really well—I call out Kendall Square; I know Committee members have been there—it is so inspirational when you go there and see the ecosystem working really well. That is what we are trying to create around the northern triangle with Gritstone.

Q70 **Adam Thompson:** Thank you, Duncan. That leads well into my next question. You talked about London-centricity. Could I have a very quick, one-word answer from you both? Of companies backed by British Patient Capital, 72.9% are London-based. Do you think that is good enough: yes or no?

Irene Graham: Simply, no. We need to get more regional. To be fair to the British Business Bank, they are seeking to do much more regionally. They want to expand their remit to do that. We need to give them that opportunity.

Q71 **Adam Thompson:** Thank you, Irene. Duncan—yes or no—is it good enough?

Duncan Johnson: It is clearly not, but you need to have a more nuanced answer than a yes/no.

Q72 **Adam Thompson:** Don't worry. Given that you both said no, and I admit I predicted that you probably both would say no, how do you feel that we should be doing a better job of supporting businesses outside London in that case?

Irene Graham: It is important to reflect that the British Business Bank, in the 10 years that it has now existed, has a regional network. That is vital. It is doing a lot of partnerships at regional and local level, which we want to see expand. That is important. It is making a difference. When you look at the businesses that are being backed, it shows their influence on the market, particularly with the European removal of the EFIB. We



need to make sure they are able to do that even more, and be more flexible in that regard, coupled with the Innovate UK dynamics.

Picking up Duncan's point, there are three critical things that make a difference to driving local scale-up growth. It is not the number of start-ups or the density. It is not the transport links. It is access to skilled talent. How are the universities aligning towards your innovation companies? It is access to clusters and hubs. We are going to hear from Alderley Park later about infrastructure. Place and space to grow are vital because it crowds in the mentors and the funders. There also needs to be access to local growth capital. We have to give the British Business Bank the ability to continue to build that. I think the British growth partnership must have distribution that goes regionally.

Q73 Adam Thompson: Thank you, Irene. Duncan, what are your thoughts on supporting businesses outside London?

Duncan Johnson: I have a slightly nuanced view of that. One of the amazing things about capital is that it is very good at finding the best places to invest. It is remarkably fluid. I have been investing in private markets for 30 years, and it has always amazed me where capital gets to. The fact that only 28% makes it out of London also tells you something about the product. The product needs to be stronger to attract that money. What we have started doing is dragging up London people with skills into the region; over 20% of Northern Gritstone's team have relocated to the northern triangle from London. That is a really important change in polarity.

We have an arrangement with a Cambridge-based venture builder called Deeptech Labs, bringing that skillset into the northern triangle. We are just about to launch something with the Crick Institute, with KQ Labs, to bring that in. It is a two-way process. We have to create great investment product and that will draw the money in. There is a definite flywheel effect. We have to help the money help us.

Q74 Adam Thompson: Thank you both very much. I have a final question. I want to focus again on the British Patient Capital scheme. In your view, do you think it is suitable for the science and technology sector, or do we need some bespoke approach?

Irene Graham: It has done a very effective job when you look at the raft of different products underneath it, including future fund: breakthrough and the LIFTS initiative. We have to have, under that overall umbrella—I keep referring to the British Business Bank—the nimble and agile ability to become more sector specific when we need to be. We have been agnostic previously. How do they dial up more sector-specific initiatives? How do we crowd in, as Duncan said, the institutional investors? The British Business Bank and British Patient Capital have a role to play with the British growth partnership on the translation of large-ticket institutional money coming further down the chain into the growth economy. That is what we need to see.



Our international investors are very proactive. They are calling up businesses around this country to invest in them, and we need to see that risk appetite. The British Business Bank and British Patient Capital is a translator to bring that risk capital in from the private sector.

Q75 **Adam Thompson:** Thanks, Irene. Duncan?

Duncan Johnson: BPC is on a journey, as is all of the sector. The new leadership change at the bank with Louis Taylor and Stephen Welton is taking it to the next stage, building on what was done previously. The initiatives and changes we are seeing—Irene commented on the permanence of the capital—are really important. BPC is an important player in the landscape, and it is on its own journey and going to a sensible place. It will be interesting to see whether it is successful in the fund it is looking to raise. That is an important element to seeing its strategy and whether it can do that.

Q76 **Steve Race:** I want to challenge Duncan a little bit on his penultimate answer in that section. There are certain things. We know that in my region—my specialist subject—2.7% of all private equity and venture capital invested in the country goes to the south-west region. The south-west has Bristol University, Airbus and various other big tech clusters. Exeter has the Met Office and life sciences. Plymouth has a good university, maritime and defence. There are a lot of start-ups.

On your point that, if the quality of the product is not good enough the capital won't flow, we know that the capital is not flowing into the regions well enough anyway, despite the fact that there are good products there. The flip side of that is that people who want to start up or scale up businesses feel like they cannot access capital and so move to London and the south-west. I do not necessarily think it is good enough to say, "Oh well, the capital will flow where the products are." In fact, what you have done is to set up specifically in the north and to encourage capital into the north to find the good products. Can you expand your answer a little bit more?

Duncan Johnson: Unless I had good product, I wouldn't have raised the money. It is very clear. I had to set out why investing in Northern Gritstone would give people an acceptable market return. There are lots of elements to that. There is density of research; there is some level of track record. We did quite a few things to make it a more attractive offering to the pension funds, so there were some things in the structuring and what we were going to put into the portfolio, which I do not think are sensible to talk about here.

The density matters. I could say that between Leeds, Manchester and Sheffield universities together, they were the No. 1 producer of R&D in the UK. That is a really strong statement. I could show there was enough flow of opportunity set to raise something of the scale to do what we need to do. That is one of the issues of thinking that you can replicate



this everywhere. There needs to be a level of clustering and density to attract sufficient capital for something like Northern Gritstone to exist.

We do a lot. We have an investment team, and we also have a whole level of venture building that goes on, and that type of thing. Clustering is very local. Plymouth and Bristol are not a cluster. They are in the south-west, yes, but if you go to the US, they will tell you that a cluster is an hour's travel or 10 miles. It is a very local thing for the contact sport occurring. There are some interesting things going on in Bristol, and SETsquared have tried to do that. There are also reasons why they find it a little bit harder. Scale is one. Proving outflow, and that type of thing, makes it difficult.

Q77 Chair: Thank you. I am sure we will come back to discussing the ability or the success of capital in finding the best products in which to invest. As we know, there are structural concerns with regard to the amount of capital that flows to women founders, as well as the regional dimension. I think what you are saying, Duncan Johnson, is that there needs to be work on shaping and signposting capital to where the good products and the good investment targets are, as well as improving the amount of capital which is available.

Irene Graham: Perhaps I might add something on the south-west. In the north, you have the northern powerhouse brand and the midlands engine. There is a sort of branding there. Northern Gritstone has been a real trailblazer. What is happening now with the south-west fund, which is British Business Bank-led—a lot of us worked on making sure that something like that got established there—is a big market. With what is happening with SETsquared and Quantexa, and how that is brokering into Wales and local pension funds, there is a huge opportunity. We are seeing what works elsewhere being replicated. You have terrific space and players in the south-west. There is a real opportunity now to drive that forward.

Q78 Steve Race: It is less about the south-west and more about not London and the south-east.

Irene Graham: What you are seeing now is the universities stepping up to collaborate more. The funds that are coming in with the British Business Bank create the identity and the recognition that it is not just about the start-up but the scale-up opportunity that is there.

Q79 Emily Darlington: Can I stand up for the south-east? We are not all London. We don't all have access to finance in the same way as London does. The triangle is not a triangle; it is three spots.

Steve Race: Isn't Milton Keynes getting into the Oxford/Cambridge arc—

Q80 Emily Darlington: We have had to make the case that we are actually important to the arc.

Steve Race: Even more on top of everything you've got already.



Irene Graham: That is a really valid point—the British Business Bank regional funds in the outside-London south-east. We probably need a south-east fund as well that is regionally deployed.

Chair: Lauren will take us on.

- Q81 **Dr Sullivan:** I have a question about investor knowledge as a barrier to science. Coming from a science background myself, going on a weekend—“This is how you can do spin-out; this is how you can do business”—was absolutely mind-blowing. For many scientists, you get into it to make discoveries. You mentioned earlier a concierge service and connecting your scientists with your businesses because they are very different skillsets, and when they coalesce it is amazing. Can you talk me through the barrier of knowledge and being able to understand the science and its potential, as well as the investors who can then tap into it?

Irene Graham: The knowledge asymmetry. First, in our institutional investor base we have a gap in the knowledge of our industrial strategy, our sectoral strategy and growth economy. What do we do to make sure we are showcasing that around the country? Can we develop better and invest in creative life sciences? There is some work looking at how we can build the right toolkit to enable our investors to fully understand what is around the country. That is one thing that could be done.

- Q82 **Chair:** Could you be more specific? Who should do that?

Irene Graham: We have seen progression with Innovate UK and the British Business Bank. That is an opportunity, working with industry, the life sciences sector and the creative sector, to build those toolkits overall.

On building the knowledge of investors, something that has been piloted and is working very well is the science and technology venture capital fellowship that has just commenced with the Royal Academy of Engineering and Imperial College. That seeks to replicate some of what happens in the US under the Kaufmann initiative. That is a really important initiative that needs to be expanded. It has just started; it has just launched. It tries to build investor capability into the science base and life and quantum dynamics. That is a real opportunity to take forward.

- Q83 **Dr Sullivan:** Is that like a speed dating list: “Here are all our amazing investors who have interest in this space and here are our scientists”?

Irene Graham: It is that simple: bringing the investors together into actual clusters, into the place is important, so how do we do that better in that connectivity than online and through education? How do we raise the knowledge of the sector and the region? The science and VC fellowship is actually how we build our investors for tomorrow in terms of the future opportunities. That is a much more structured way in which you seek to get investor knowledge up on what the opportunity is—quantum is an example—and how we connect that and raise the



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understanding of our investor base. That is a really important initiative. The US has undertaken that in a great deal of focus over a number of years.

Going back to the other point, it is account management. If we use HMRC data to pinpoint the businesses early, get them account-managed by our local government resources and teams, and then connect the investor base through the parts of services based in the public and private sector, that will make a big difference. It is in Scotland, Northern Ireland, Denmark and elsewhere.

Q84 Dr Sullivan: Duncan, do you want to add anything to that?

Duncan Johnson: What we have an absolute surplus of is the science. At one level it is almost the commodity of our equation. The key piece is the talent and it is at many different parts. Irene mentioned the fellowship scheme. That is a really important scheme to train more investors, but it is about the talent to help grow a piece of science to create a world-class product that you can base a world-class business around. That is the bit we work hard on, but it is the bit that I think is most scarce. It is helping entrepreneurial scientists to found a business that has that potential and ambition, and it is about creating a team around those people. We have a whole function that does that and it is a pretty important part of our business, leaning in early to understand about creating a high-performing team but also to take what is essentially a technology product-led business into a customer-led business as quickly as possible. That is the thing that allows you to accelerate the development of the business and raise the capital.

Q85 Dr Sullivan: Is it just the team and the incredible amount of expertise that is there to take the science to the next level with investors? Why do we see so many companies go overseas? Is it the long-term investment space? Is it regulation? What can we do at this size to try to push the case for that investment staying in this country?

Duncan Johnson: There are vastly bigger capital markets in the US with a lot more history of doing this. It also has a vastly bigger market for selling your product to, so it is a pretty natural journey for most high-tech businesses. In fact, for any business with that type of ambition, having a US presence is a pretty natural part of the journey. I don't think that is necessarily something we want to rile against and say it is a bad thing. To get a UK business to be global-leading it needs a presence outside the UK. That is pretty obvious. The US has a lot of capital to back those businesses. It also has a lot of people who have been there and done it, and it is important we tap into that talent. Gritstone has 31 investee companies at the moment and we have US chief executives who come in to run three of those. One has relocated here and two are doing it from the US, but essentially they are still mainly UK-based businesses. That is us trying to access the talent.

Q86 Chair: Duncan, you say that the US has vastly larger capital markets, but



the City is the second largest financial centre in the world. Does the US have larger capital markets, or does it just tend to invest more in the productive economy?

Duncan Johnson: I don't know the actual stats on that, but the US capital markets are vastly bigger than the UK's. It is a much bigger economy; it is the biggest economy in the world. It also has a history, and not just silicon valley and Kendall Square; it is more advanced on the venture route, so there is more capital there. The fact that the UK capital market has gone backwards—I think that now only 4% is invested in UK things—is really unhelpful. I think the London stock exchange is doing a good job trying to reverse that trend.

Irene Graham: Whether it is the US, Canada or Singapore, they are all investing in our scale-ups and coming in early, as I said earlier. That is because they have scale; they are patient; they are putting more money in; they are following on; and they are very proactive. It is important that we get right what is currently happening in the Mansion House reforms and through the planned British growth partnership, making sure that institutional money comes through and translates its risk appetite earlier than just at the scale-up phase, because that allows you to follow on and take that company through the journey. That is a critical moment. We all have the capital supply released, but how that translates into players like Northern Gritstone, Business Growth Fund and new vehicles will be very important. That is why I think the roles of the British Business Bank and Innovate UK and how we join that up in a more effective way will be critical, which is why I keep coming back to proactive account management and concierge and how we connect things through.

Q87 **Steve Race:** I want to touch on some of the initiatives—the long-term investment for technology and science and the national wealth fund—and the extent to which both of you think those have improved access to finance for the science and research centre.

Irene Graham: It has been very positively received. I sat on the life sciences scale-up taskforce. This is a really important step that has been taken. We need to see the ability for it to scale. It is crowding in more private sector funds at the scale we need it to be, but we need to see that followed on with the British growth partnerships and the other initiatives we have spoken about, and given enough scale to invest in.

On the national wealth fund, any other country that has a scale-up economy has a wealth fund. It is important how it invests in the infrastructure and collaborates with the British Business Bank as well, as we see the journey of the company through its growth cycle. As a country, instead of doing project-based activity, we need to be more client and customer-centric in how we follow through and connect the dots.

Q88 **Steve Race:** What does that mean in terms of how we need to change?



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Irene Graham: If a business is successful in gaining a grant and has proof of concept, or a product that is working, we need to think about how that connects to the next stage of funding that it will need. That means connectivity. Innovate UK and British Business Bank now have a memorandum of understanding to build connectivity better, but it also goes into how we buy from those companies as well. We need to see that becoming more effective overall.

Q89 **Steve Race:** Duncan, how do you think they are working at the moment?

Duncan Johnson: We have not seen a huge amount of change from the LIFTS programme; it has not flowed into what we are doing. We are mainly an investor at seed series A and we do some later stage investing into the portfolio, but we have not seen a real change with those initiatives as yet. We need to see how the national wealth fund comes in and how it is going to play out.

Q90 **Steve Race:** Do you have a view on what it sounds likely that it will be doing? Do you think it is going to be doing the right thing, or do you want to see some change? Does it sound positive to you?

Duncan Johnson: It has not really done much yet, so it is quite hard to know.

Irene Graham: It is interesting that it has been given a remit for the defence sector. I think it gives you flexibility. If you can be agile and flexible about where you direct certain of your strategic investment, that is going to be important.

Q91 **Steve Race:** The LIFTS and tax credits seem to focus quite a lot on the life sciences sector. Are we over-indexing on life sciences? Are we not doing quite enough for various other sectors?

Irene Graham: The industrial strategy will be a very important lever as to how we align across sectors. I still think we have to be agile enough to look at future emerging sectors that we won't even know about yet, which is why future fund: breakthrough is important, because that is almost a newer element. We have to be agile. The industrial strategy should be a good opportunity to learn from what is happening in life sciences to take it across to the other sectors, and we have to be agile enough to spot where the opportunities are across the country.

Duncan Johnson: I was quite surprised when I heard the stats on the R&D tax credits. I had not realised it was quite so vast in life sciences. One of the realities is that life science investment absorbs a vast amount of capital. It is very expensive to build great life science businesses—in the main, more expensive than deep tech. If you look at it through that lens, the fact that there is more R&D support going into life sciences probably makes sense. I agree with Irene. We don't know where the winners will necessarily be. We have amazing, world-beating science going on in the UK. I am absolutely convinced that the UK's next megacompany will come out of one of the things that Northern Gritstone,



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OSE or CIC are doing, but I do not know where that will be. Things like the R&D tax credits play an important part in the early-stage funding of those businesses.

Q92 Steve Race: Do you think they are flexible enough to identify and support the future sectors that we might not know about at the moment? Are they flexible enough for people to be able to access them?

Duncan Johnson: You have to convince people that you are doing R&D. To the extent you can do that, I imagine they should be flexible enough, but this is not my particular area of expertise.

Irene Graham: The creative sector has given suggestions for how it can be further moulded for the creative sector. We have to be open to those types of abilities to tweak.

The other important taxation we have not talked about is EIS and SEIS. One thing about EIS is that when some of the life sciences and other businesses become at scale and commercial it is beyond the seven years for which EIS currently exists. In that area, if we have a growth EIS, how do we make sure we are not creating false cliff edges, which is quite important for our growth economy and deep tech?

Chair: We have only about five minutes left for this panel and a number of questions, so we need to make progress. We have the absolutely critical issues of angel investors and venture capital.

Q93 Steve Race: Are there enough angel investors for science and innovation outside London?

Irene Graham: I have mentioned a few times the regional angel programme, which is really important. One angel syndicate at Cambridge probably invests at the size of all of those in the midlands, south-west and Manchester. We need to see the regional angel programme continuing to be developed, and to grow that angel community and the lead angels that can invest in some of the emerging sectors. That is important work. We should make it flexible enough so that perhaps not all angel syndicates have to be FCA-regulated to gain access to British Business Bank collaboration. That is one area where we can come back and give you more briefing.

Q94 Steve Race: Duncan, staying on angel investors and venture capital investment outside London, which we touched on earlier, when we talked to Dame Angela, the chief scientific adviser, she said she has a joke with some northern and other universities that the best thing you can do is invest in a few helicopters to get people out of London and up to places that need investment and have great ideas and products, as you call them. She admitted that was slightly facetious, but, given we want more capital investment outside London and the south-east to support good businesses and ideas being generated, what more do you think we need to do? Is it about connecting those to the London network? For example, we know that you are more likely to get international capital finance



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invested in the regions than you are UK-based finance. What can we do to spread it around more equitably?

Duncan Johnson: The game changer here is going to be poster children coming out from what we are doing to show that we have all the things we say we have. We do not have enough poster children. I am talking about the deep tech and life science spaces in which Northern Gritstone operates in the northern triangle. There isn't enough historical success to get people to sit up and say, "I'm really missing out here. I've got to be part of it." The moment you create that FOMO you go to a different place. As you can probably tell, I am not a northern person. I live in Hampshire. I can travel round the whole of the UK each week, so I am pretty sure that to find these great opportunities other people will do that as well. I am not unique in doing that at all.

Q95 **Steve Race:** Do you think it is just marketing? Is a lot of it about vibes?

Duncan Johnson: Northern Gritstone coming into existence has absolutely led to people saying, "Wow. They've raised nearly £400 million of long-term investment capital for this from people who, frankly, should know better, so there must be something going on there that is really interesting." We run demo days when we get 400 people coming along to look at the product we are creating with the universities in the north. It is starting to happen, but we have to fire it up by making sure they are really successful businesses.

Q96 **Steve Race:** As a final note on that, I want to touch on the British Business Bank. Of the enterprise capital funds, 60.6% is invested in London and the south-east, for example. How can the bank better support regional capital?

Irene Graham: They have their regional funds as well, and that has been expanding. We were very active in the south-west fund. The south-east is another area they want to come into. We have to give them the opportunity to continue to expand and build those out. With their regional network, it is very important that that is what it is being allowed to do.

Q97 **Steve Race:** Are they showing willing?

Irene Graham: They are definitely very focused on that. That is one of the major planks of their objectives, and how future funds connect into the regions as well. That is incredibly important, and their regional network is important in that.

Q98 **Chair:** When should we expect to see change? The Startup Coalition found that 80% of VC funds are based in London and deploy 69% of their funds in London and the south-east, and we have the British Business Bank, as Steve said.

Irene Graham: If you look at our development banks, you have the Scottish National Investment Bank and the Welsh Development Bank. The British Business Bank works with them as well. Then you have emerging funds. We are already seeing change. I am very happy to come



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back with some of our latest figures on that. We must continue to give the British Business Bank and our development banks across the different nations the support to be there for the long term, which is why the British Business Bank having permanency is really important.

Q99 Chair: I suppose my challenge is that you seem to be looking at very incremental change, whereas I would argue we need to see some quite radical change because we have not seen significant improvement for some time.

Irene Graham: The radical change comes when we unlock institutional money. We need to see that shift from 4% into equity much closer to the 50% it once was. We are on the cusp of radical change, and the British Business Bank will be critical.

To pick up Duncan's point, we should not lose sight of what is happening with the capital markets industry taskforce, PISCES and some of the initiatives of the stock exchange, like Floww and its regional network, to connect businesses.

Q100 Dr Gardner: I want to jump back to the issue of angel investors. I cannot let questions on that go by without mentioning the fact that it is hard to get angel investors to invest in female innovators and entrepreneurs, so in addition to regional inequalities we have those inequalities. There are other diverse groups as well which could enhance productivity and growth in the country and in the regions. What can be done to address that bias?

Irene Graham: I am part of the Invest in Women Taskforce which is raising a specific fund of £250 million to invest in female founders. The British Business Bank is committing £50 million to invest in female-led funds. The regional angel programme is expanding and more women-led angel groups are being developed. The UK Business Angels Association is doing an awful lot in that regard. I sit on its board. We would be very happy to come and brief you separately on some of the developments there and what the opportunities are.

Q101 Martin Wrigley: Some very interesting comments are coming through. I am an engineer by training and normally finance switches me off entirely. I understand more of what we are talking about here than I did about protein folding—or just a bit. You made some interesting comments, Mr Johnson. You talked about plenty of science but a lack of talent, by which I took you to mean business people who understand the science, innovation and the financing. Is the problem we are looking at here less of geography but more of language? People invest in people; financiers invest in people who can put up the financial arguments and explain the science as well.

Irene Graham, you talked about concierges and account managers. Are we missing translation between finance-speak and technology, engineering and science-speak? If that is the case, how do we build it? Do we teach our innovators to speak financier, or do we teach financiers



to speak innovation language, which clearly some of your people already do? You described some of that earlier, Mr Johnson. When I was in silicon valley it was very clear that the engineers understood much more about finance than I hear from the scientists I speak to here. How do we fix that gap?

Duncan Johnson: Talent is a team game; it is not just about individuals. What we are looking to do is create teams around the science and the opportunity set. There are not that many people who have been there and done it. That is why having people who have been there and done it is so helpful. What you find in silicon valley is people who are doing their fourth or fifth start-up. We don't have that many people here who have that kind of experience to help sit alongside the engineers and scientists. That is the bit where we want talent. If I could unlock lots more of that, it would be brilliant; it would be fantastic.

Irene Graham: When we look at Skills England and our talent, we have to embed this far more into the school curriculum and then into our university college curriculum as well. The States does that very well. Then there is what we build around it. I have talked about the science and venture capital fellowship. There is a lot of that type of activity taking place in the US, and we need to build that for the long term.

We talked about IQ; there are also some of the team aspects Duncan talks about. There are some good initiatives, whether it is the private sector with its talent pool, like BGS and Northern Gritstone that brings it into the business, and the things that Innovate UK is doing with its scale-up programme. It is bringing that team around the scientists and the founder to help them into the next stage, whether it is commercialisation, branding expertise or fundraising expertise. There are opportunities to build that out.

Q102 **Chair:** Where would I go to find a list of Geordies who have been there and done that, for example?

Irene Graham: We can give you that. We are very happy to give you that. We are sleuths; we know all the scaling-up businesses in every one of your constituencies and regions and your women founders locally, so we can give you that information.

Chair: Everyone is very excited about that. We are running over, but there is a very important aspect which Emily is going to ask about now, and then we will finish.

Q103 **Emily Darlington:** I think it is quite a nice way to end this series of questions. We have talked a lot about the regional dimension; we have talked a lot about how we match skills, finance and ideas. What role should local government play in that? I am also thinking about the Mayors. What should be their role potentially in marketing, as I think Steve called it, but also bragging about and creating opportunities for connection in their area?



Irene Graham: The Mayors have an absolutely vital role. Given what has been achieved in London with the Grow London programme, we think every mayoral authority should have a scale-up plan in their local growth plans; they should address talent, how they develop clusters and hubs and how they develop local equity, leveraging local pension funds and players like Duncan and others who exist elsewhere. It is so important. They have a real criticality around the brand, the positioning and making sure that the ecosystem is leaning in. We have done a lot of work with local areas on how they build that ecosystem and we want to see it continue, but local growth plans should have a scale-up plan.

Q104 **Emily Darlington:** What role should local government leaders and Mayors have in the priorities for the British Business Bank?

Irene Graham: The collaboration that is happening between the British Business Bank and local mayoral authorities and what was there previously is strong. That still needs to dial up, but there is a strong connection that can be built on. We have seen that in some of what has been rolled out as part of the British Business Bank's current regional framework. That partnership is important. Mayors should also learn from others and expand programmes that work elsewhere across the country.

The final point is about space to grow. What is happening in Manchester with Alderley, or what has been expanded elsewhere, is important. How do you get the space that brings together the innovators, the mentors, the academics and the funders? That is what you would see in our science parks in places like Alderley, and in what Bruntwood and others are doing. That is critical.

Duncan Johnson: We are very fortunate to have Andy Burnham, Tracy Brabin and Oliver Coppard investing in Northern Gritstone through their mayoral funds. They have invested in Northern Gritstone. We have good close relationships. It is a two-way dialogue on things we can do to help in those local scale-up economies. An important part of why Northern Gritstone has had the success it has had to date is connectivity to the locale and local impact and how we can work together.

Chair: Thank you very much. That is a very good note on which to end. We will be talking about local infrastructure with our next panel. For the moment, a huge thank you, Irene Graham and Duncan Johnson. We have found your contributions very insightful and we are very grateful.

Examination of witnesses

Witnesses: Henri Murison and Dr Mackay.

Q105 **Chair:** Welcome to the second panel in this morning's session. A big welcome to our two panellists. I start by following on from what we heard earlier in the session about the differences in access to finance between the regions and the golden triangle. We heard concerns about infrastructure gaps, both nationally and regionally, affecting start-ups and



scale-ups in science and technology. We have immense infrastructure gaps. For example, just to set the context, investment in the Greater London Authority on public infrastructure funding was £34 per head, whereas in the North East Combined Authority it was £4.77.

Can I ask our two panellists to introduce themselves briefly and give the Committee a sense of the key challenges when it comes to infrastructure, and how they propose the Government should address them?

Dr Mackay: Thank you very much for having me here today. I am Kath Mackay, chief scientific officer at Bruntwood SciTech. Our role is to create and operate innovation districts across the UK. We are effectively in the infrastructure business. The majority of our investment and sites are in northern and midlands regions, and we also have sites in Cambridge and London, which I am sure we will talk to in this panel. We have nine campuses in those locations and 31 innovation hubs in those cities, which are Manchester and Cheshire, Birmingham, Leeds, Liverpool, Cambridge and London. Our reflections are that that infrastructure is absolutely critical to driving economic growth, scaling and commercialising scientific endeavour. It supports scientists and innovation at all stages, from single innovators right up to multinational companies. The infrastructure acts as a magnet for talent and investment, supporting both national and local economies.

The innovation and research infrastructure across the UK is incredibly diverse and made up of investments from both the public and the private sectors. As a private sector organisation—I have spoken about where we have infrastructure—we have built and developed over 5 million square feet of laboratory and office space for science, tech and innovation sectors, and we are working to support over 1,100 science and tech businesses across the various UK locations in the cities and regions that I mentioned. Those companies are start-ups, scale-ups and global businesses that have chosen to put themselves in our cities in the north and the midlands. We have over £300 million of development spade in the ground ongoing. We are continuing to develop. We are looking to bring another 1.5 million square feet of labs and infrastructure into those locations. That will mean an uplift to supporting 2,600 businesses by 2033, in London as well.

You have heard about Catapults in previous sessions. That infrastructure is spread out across the UK, but it is not evenly spread out. It is obviously a challenge in terms of public sector investments that there isn't evenness. We heard from Duncan earlier about the strength of research and the quantum of R&D coming out of Sheffield, Leeds and Manchester, but where the public sector chooses to put its infrastructure investments does not match that concentration in our regional cities and locations.

UKRI mapped out their infrastructure investments quite well, and they published those in their 2023 infrastructure road map. That is a good resource for seeing the types of investments that have been made by the



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public sector, what it is working on, and the types of industrial sectors it is looking to support. Even in that report, there is very little on how you can unlock those public sector investments to grow regional economies. In that report, there are 170 pages, and half a page is focused on regional economy and leveraging innovation assets to support regional growth. There is a lot more that can be done in terms of the placing of public sector innovation and the infrastructure assets and thinking about, more formally, what the regional KPIs are and how they work in regional economies and regional businesses. It seems to be not happening by serendipity. We accept there is a positive impact on a region, but actually what is the strategy and what are the KPIs that sit alongside those investments? We could do more to map that together.

We know at first hand how important it is having public infrastructure in a cluster. Our site, which Irene mentioned, Alderley Park, is home to the Medicines Discovery Catapult. UK Research and Innovation worked with Bruntwood to place that in 2016, and it was absolutely fundamental in the early creation, as well as the start-up and scale-up phases of the Alderley Park cluster, having a piece of national infrastructure in Cheshire, where it is bringing world-class scientists to the site to collaborate, and hosting events. They really draw businesses in, and I know that is something that has been spoken about previously and well documented through the work of Richard Jones.

Q106 **Chair:** Thank you very much.

Henri Murison: I will carry on where we just left off with Richard Jones.

Q107 **Chair:** Could you just introduce yourself.

Henri Murison: I am Henri Murison, the chief executive of the Northern Powerhouse Partnership. Richard and his co-author, Tom Forth, did a piece of work for Nesta called "The Missing £4 Billion", which outlined the fact that actually in many regions of the UK, including particularly parts of the north-west like Cheshire, the amount of public investment was vastly lower than the amount of private investment at comparable levels, whereas there were some regions, particularly London, that over-indexed massively on public investment but had less private sector investment. Tom Forth particularly cites the example of Paul Nurse, who was involved in the founding of the Crick, and whose argument about the Crick was, "This could only be in London." The challenge with that is that the N8 response, given to this Committee in its written evidence, highlights very clearly that the disparities in health funding are largely to do with the Crick being in London. That is what has driven that. If you then look at the major decisions made by the last Government, when they decided to put ARIA somewhere, again, it is in London. ARIA, to be honest, is going to draw money out of the rest of the science budget; the evidence for ARIA necessarily working is not really there.

You have a real challenge, which is that I want growth everywhere in the country and I do not want a zero-sum game, but policymakers and



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people in the science community have made active decisions to put all the major national institutions largely in London, and that is problematic. It means that, when we want to have a debate about regional growth, we have to find extra money out of the science and innovation budget to do that rather than having used some of those major national institutions to drive it. Now there will be a choice between spending money on ARIA and spending money on science and innovation in the regions, because Government made some poor choices.

I do not want to have that argument. I also chair something called the Growing Together Alliance. We have done work on connected clusters, which I am sure we will talk about. I want to be having positive conversations with other regions. With my fellow business group and employee group leaders, we have very grown-up conversations about how we can work together. The people I don't think have been behaving particularly well over the last 20 years have been the people making major decisions about where to put big national institutions. The interesting thing about Tom's most recent work is that he charts how the leverage of extra money in London has brought with it more private funding. Now London is catching up in terms of its leverage. Because so much money has gone in, it is attracting more private money. That shows you that, if you put more public investment into science outside London and parts of the south-east, you could have a big impact—particularly the sort of science that Patrick Vallance talked to you about when he gave evidence here, which leads more directly to growth; not just pure research but applied research. At the moment, unfortunately, we have not had that impact because we have not chosen to make those decisions.

I reference the wider infrastructure issues, which I am sure we will come on to, and the fundamental argument that this is not about spreading jam. I am not coming to you saying, "We should spend money everywhere because that would be fair." That is not my argument. My argument is that if you go back to the Nesta report there was good evidence to spend money, particularly in the north-west, and Government ignored that evidence and chose to put those institutions somewhere else. In a country where supposedly the Treasury is making decisions based on evidence, the argument I would make is never mind a fairness argument; there has been significant under-investment against where the private sector has been choosing to put its money, and central Government have essentially had a reverse regional policy. Never mind levelling up not having worked; we have never even tried in innovation. We have been doing the exact opposite: we have had a regional policy to advantage and preference London, and there is a significant challenge to the science establishment, of which Patrick is a member, to live up to the values of what he said to this Committee. Bluntly, he was part of the establishment that was doing the exact opposite when he was chief scientific adviser, and those are difficult questions he has to answer. I want to work with him on Ox-Cam, and we will surely talk about that later. I want to work constructively with the Minister, but he is going to



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have to really show that he is a leopard that has changed its spots, because I am afraid that he is part of an establishment in the science and funding community.

When people like George Osborne set up institutions headquartered in Manchester such as the Royce Institute, many people in the science funding community went completely berserk because he was breaking their orthodoxy of where they put investments. The Royce Institute had a base at Imperial and a base in Cambridge. These were not anti-golden triangle interventions, but the community of people who make these decisions normally was so angry about it because it went against their orthodoxy that you could not possibly headquarter something like the Royce in Manchester. Whenever they had made the decisions rather than a Chancellor doing it, they had made decisions that, bluntly, were against the interests of the rest of the UK.

Q108 Chair: You have set the Committee a number of provocative points and questions. Before I hand over to Emily, let me come back to you on two particular points. With regard to Minister Vallance, he said to this Committee that curiosity-driven research will happen where it will happen, implying that Government had no influence over pure research, but you are, if I am right, making the point that the placing of science infrastructure drives investment in pure curiosity-driven research as well as in applied research. Is that right?

Henri Murison: It does, yes. Patrick was making a complete divide between pure science research and what he would consider to be growth or applied research. In areas where there is a very clear link between pure research and potential applied opportunities, the challenge is that that argument does not hold up to much scrutiny. I am not saying we should shut down Oxford and Cambridge and move them. What I am alluding to is that there are eight research-intensive universities in the north of England, and I would argue that when you look at where you have chosen to put your investments you are making decisions in the way things have been done in the past. Nancy Rothwell, who was the former president and vice-chancellor of the University of Manchester and is now on the Industrial Strategy Advisory Council, has made similar arguments, maybe in a more polite and erudite way than I would ever do, but I don't think I am alone in having concerns about some of the previous ways in which big decisions were made.

Q109 Chair: With regard to those previous decisions, is there anything that could be done now—you mentioned the Crick and ARIA—to move more of the investment outside London, for example hubs and spokes or smaller pilots? Is there anything that can be done retrospectively to change the impact of those decisions?

Henri Murison: There has been good evidence of that being attempted. The University of Manchester—you had evidence from Professor Cordwell previously—under Dame Nancy's leadership worked very constructively with Camden. Manchester City Council has a very strong relationship with



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Camden, and that relationship predates the relationship between Manchester and Cambridge, which almost came up in the last session but you never quite got to talk about. Those types of bilateral relationships are really positive. They are referenced prominently in the connected clusters piece of work that I and my colleagues at that coalition of organisations published recently. There are good examples of doing that, but it does not change the original starting point, which is that central Government, in particular their agencies in the research funding world, have made purposeful decisions to do things that have had very significant implications for regional growth. Their inability to accept they have done that and accept the consequences of it when they then have a strength in places competition is literally setting areas to compete against each other for peanuts, a process in which a previous science Minister who is no longer in this place and who may no longer be a Conservative said to me that he had had to intervene because the west midlands was not going to win, so a better bid in Greater Manchester for strength in places did not get funded.

All those very cack-handed bits of very low amounts of money being competed for in “Hunger Games” style when the big decisions had all been made and put things elsewhere is a pretty shoddy record for the last Government. I am afraid they have to accept the consequences that they have left us with a very significant number of structural problems in how our economy is going to work. Innovation and research is driving productivity enhancement, and if it is in certain parts of the country and not in others—I happen to be in a part of the country where productivity is rising, particularly in Greater Manchester, relative to the national trend—it would have risen more quickly if we had not made decisions in such a purposeful way to try to create an outcome that was the reverse. These decisions were trying to keep down productivity in Greater Manchester, in essence, because they were choosing to put the money somewhere else. It didn’t work, but if they had been going with the grain of economic growth and had been backing places with high growth productivity, we could have seen those productivity increases happen much more quickly.

Chair: Okay, thank you very much.

Q110 **Emily Darlington:** I am not going to revisit the Crick case but just remind you that it was actually about a replacement for Mill Hill, which was already based in London. Having been involved in the building of the case and getting it funded by the Treasury, there is a lot more to it than you are describing and the decisions that were made.

Henri Murison: I would argue that I am not the only person who takes a view of this—

Emily Darlington: I know.

Henri Murison: —which is that Paul’s public remarks belie a significant underlying view in many people’s minds.



Q111 Emily Darlington: Paul was not even involved in the beginning; right? I don't think he was even back in the UK at the point when it was first conceived.

Let's talk about how Government should be making decisions about science infrastructure. Should they be making decisions on the basis that there is low economic growth and low wages in an area, so we should put something there to kick-start something? Should they be looking at available current small and emerging clusters potentially around research-intensive universities, which would leave big gaps across the country if they were just focused on Russell Group and did not extend to some of the innovation-focused universities and spin-out universities? Should they be looking at building that infrastructure on areas of success already?

This is not on any specific project, and let's not revisit any specific project's decisions. Going forward, we have a Government who have talked about enhancing science infrastructure, not least AI infrastructure. Should their priority be saying, "We'll put it where there is little to no growth"; "We'll put it where there is already an existing cluster around a research-intensive university, thereby leaving deserts"; or should they build and put it where there are already very strong clusters in the area to maximise and get earlier returns?

Dr Mackay: Thank you. That is a great question. I agree with Henri's comments previously that it is not a case of every region waiting their turn. There is excellence across the whole of the UK. In many of our research-intensive universities, there are research projects and translational research that is world leading. First of all, it is to ensure that there is the mapping and gapping across the UK of where we are globally and nationally excellent, and to build on that excellence across our UK cities and regions. There are issues with that, as you have pointed out. Potentially, there will be gaps. I am sure we will have a conversation at some point this morning about transport and how we increase the talent pool to get people moving across regions and pan-regions into those clusters. If we start building on areas where there are very few assets and lack of talent, that may take us to a difficult place. There are plenty of emerging clusters across our cities and regions where they will benefit from further enhancement.

Q112 Emily Darlington: Can I challenge that point about research intensive? Research-intensive institutions are what we tend to talk about as Russell Group institutions, but when you look at the innovation at the old red brick in terms of their impact on innovation spin-outs, some of them have a much better success record than the research intensive. Do you think we are cutting off opportunities if we are not looking at the old red bricks or the innovation-focused universities as clusters as well?

Dr Mackay: There are plenty of universities across the north and the midlands that are not Russell Group traditional universities. That is not my interpretation.



Q113 **Emily Darlington:** As Steve would tell you, the south-west has some great institutions.

Dr Mackay: We are not in the south-west, but I am sure it has.

Emily Darlington: UWE Bristol is fantastic but often not considered within that. We have Coventry and what goes on there. Again, it is not necessarily listed under research intensive. I guess what I am trying to get to is that I absolutely take your point about breaking the biases, but, actually, do we need to challenge some of the biases that we come to with this research intensive as well and not just the geographic biases that we currently have?

Dr Mackay: We are working closely with Aston University in the midlands where we have developed a cluster working on digital and tech around their geography. There are many examples of relationships that we have that are outside traditional Russell Group.

Henri Murison: Your question is very well posed, but I would give you starting from the other end of the spectrum. In the north of England, we have a very clear purpose in doing this work and our interest in it, which is that part of raising northern productivity to get an extra 1 million jobs by 2050, to significantly close the economic divide with the UK average, requires our economy to become more innovative. The vast majority of the benefits are applied to sectors that are not traditionally innovative sectors. It is the end product of the innovation. I would start from the other end of the telescope.

We have done some work with the business school at Durham that we will be publishing in the next few months, which we will obviously send to the Committee. The basic schematic of that is that, if you look at technology skills, the absorptive capacity in regions and the infrastructure—transport infrastructure as well as digital infrastructure—you can work out the ability of all the businesses that have the potential to be more productive to adopt many things that are just diffusion things, which might have already been come up with. That is where you start from. That is largely in many parts of the country where there are few research institutions or translational institutions, where you need to have an impact and you need to find models like the Made Smarter pilots, which I am sure we will talk about at some point and were first in the north-west but are now across the country. Those are designed around the businesses that benefit, not who provides them. Does that make sense? They are provided by different people in different regions.

I would begin from the starting point of raising productivity in the rest of the economy. That would be my one challenge to you as a Committee in how you frame this inquiry. You talk about spin-outs and scale-ups a lot. I am largely interested in how we apply innovation to the rest of the economy, because that is where most of the benefits are, and a lot of that is stuff that is nothing to do with Russell Group universities, if that makes sense. I was just making the point that we currently spend so



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much of our money on pure science that we subsidise science for the whole world. We spend so little on the stuff that I am interested in. I point to the examples of the stuff that we spend everything on, but, actually, we should spend a lot more of the money. If you look at the innovation deal that Greater Manchester has—I am not an expert on the one in the west midlands; Kath knows more about it—they are not spending money entirely on just extending pure research projects and turning them into businesses; they are doing lots of stuff, for example in the case of Greater Manchester, to apply AI in the economy. They have a business in one of their programmes that is a timber merchants, and they are applying AI to it. I am talking about making the rest of the economy more productive.

Q114 Chair: Henri, you were talking about a process, and you said you would start with the end result—what you wanted to improve productivity. What was the rest of the process?

Henri Murison: Then you work out what institutions and interventions you need to achieve that goal rather than saying, “We’ve got a science budget. How do we prioritise that £20-odd billion? How do we spend it?” My starting point is work out what you need to make the economy more productive by 2050, and then work out from the public and private sector how you find that money and who should spend it, rather than assume you are going to spend any of it on the things you do now. The argument I would make is that the UK has spent a lot of money on science for a long time and we have one of the most unproductive economies in the western world, so clearly we are not doing something right. I would argue that we are doing many things well, but the bit we are often missing is applying the types of changes that would raise productivity to SMEs and businesses that do not think of themselves as innovative. How you apply innovation and innovations to businesses that do not consider themselves to be innovative is where most of the productivity benefit of the work of this Committee comes. The reality is that the producer interest is all at the high end and the stuff that is whizz-bang and exciting. This is stuff that is probably relatively dull to the innovation community but is very important in economic terms.

Q115 Emily Darlington: I do not disagree with you on translational research being an important part, but it would require significant change about where money goes in our university sector to support institutions that have strengths in translational research.

Dr Mackay, you have a real commitment to the west midlands, to the midlands, yet you are expanding into London. What I am trying to understand is this. Back to my original question: do you invest where there isn’t anything? Do you invest where there is a bit of something and it will take a while? Or do you invest to get a greater return quickly because there is already quite a lot going on there? It is a similar decision tree, I guess, to what the Government have when they are deciding where their science infrastructure should be. Do you want to talk to us about the thinking of Bruntwood SciTech in moving some of its focus and



investments into London?

Chair: As part of that, we have the Greater Manchester Pension Fund investing in London, which seems to be reverse financial flows.

Emily Darlington: There might be really good reasons.

Dr Mackay: Yes, absolutely. Yes, our shareholders in our science business are Bruntwood, the property company Legal & General, and the Greater Manchester Pension Fund. We have worked with the Greater Manchester Pension Fund very closely in Manchester, but it is invested in the UK business, so you are absolutely right that they are part of our decision making around London.

The decision in question, for those who are not aware, is that we made the announcement at the end of last year that we were forming a new partnership with Imperial College, and were going to be creating a £200 million innovation hub in their White City deep tech cluster, which is already an established deep tech cluster full of spin-outs and scaling businesses in west London. The decision making for us as a business is that our model is predominantly around partnering with local authorities, universities and hospital trusts. We are deeply embedded and we also have equity joint ventures and joint projects with those public sector institutions. While there have been discussions around London, and districts are very interested in what we have done in the north and the midlands, it did not fit the model. When we knew Imperial was looking, it was attractive to us because—I don't need to explain who they are and what they do—we found a like-minded partner that was interested in growing the innovation economy through working with us as an investor developer and growing facilities. If we were to go into London at all, it had to be the right partnership with the public sector, and we found that through Imperial.

The broader decision making is that we have been in the north and the midlands for many years, spending a lot of time and investment on creating the right facilities that grow regional economies in northern cities and Birmingham, and we felt the time was right to take that model to London. We think there is a huge opportunity to create a network and a backbone of innovation linking the clusters across the UK where we have academic institutes, hospital trusts and businesses of all sizes and shapes in those locations. From our point of view, there is an opportunity for businesses in our sites already to gain access to some of the expertise in London. Picking up on the previous discussion you heard, that is VC and finance, and the concentration of finance that is currently in the capital. Potentially, there are opportunities for those businesses in our northern business clusters dipping into talent in the capital.

I think it genuinely works the other way. When we were selected by Imperial, it was because of our track record across the UK and what we had done in those northern and midlands locations. The ability to work with our partners in those locations was attractive. For businesses that



come into that development in White City, we will be able to leverage partnerships with the public sector bodies and institutes in the north and open up a pool of 1,000 businesses. I am sure we are going to get to transport at some point and how we do that connectivity.

Chair: We need to move on.

Q116 **Adam Thompson:** I have to shoot off to another event in a minute or two, so I will just ask one question. Regarding the way that you interact with local government, what kind of role do you think local government plays in improving science and innovation infrastructure? How are you both interacting directly with local government?

Dr Mackay: We work closely with government. We have deep relationships in all the regions in which we operate. That is our model. We have some equity partnerships with local government. Cheshire East is a shareholder in Alderley Park. Manchester City Council is a shareholder in Manchester Science Park. We have worked together on schemes where it is beneficial for the local economy and the local business base. We have worked to discuss where there are challenges in some of the regional locations on viability. What I mean by that simply is that building laboratories and scientific infrastructure is a high-cost endeavour. It has become even more difficult over the last couple of years as the cost of borrowing and the cost of goods have increased. In some regional locations, SMEs and scale-ups in particular are not able to bear the cost of that development, so it presents a viability gap in some of those locations where it is quite difficult to get projects off the ground. In those instances, local authorities have been open to subsidy and grants. That is one area where they have been able to facilitate a development in a new geography or an immature cluster through subsidy.

We also worked with local authorities on enterprise zones previously—the local enterprise partnerships—where we were able to make clusters more attractive by offering business rate relief in particular geographies. That was fundamental in establishing our life science clusters in Alderley Park and Manchester where a number of businesses—24 in the Manchester cluster and 28 in Alderley Park—were incentivised to come in through that support.

Q117 **Adam Thompson:** Thanks for that, Kath. Being a little self-reflective, you have a lot of relationships with local government. How do you think you can improve that to boost the regions?

Dr Mackay: We can work with them more closely to translate where there are strengths in our clusters. It is educating them where they do not have the capability to understand what they have in their geography and what is truly world leading. We can support our local authorities better, and we continue to work closely with them where they can start to make more decisions about innovation and innovation funding. The innovation accelerator, which Henri mentioned, is only a pilot and it is a



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very small amount of money salami-sliced over various regions, but there is the ability to build capability and capacity into our local authorities where they can start to be more autonomous over their decision making around infrastructure, R&D and innovation.

Q118 **Adam Thompson:** Thank you, Kath. Henri, do you have anything to add on that?

Henri Murison: My background prior to this role and when I first met the Chair—I disclose that—was when I was in local government. We had a deal with the then cities Minister, Greg Clark—whatever happened to him?—to do business rates retention. It was a very generous deal, to be honest, so I was and still am very grateful to Greg for it. That allowed the city council to redevelop what was then called Science Central and is now referred to as the Helix, which has essentially expanded the city centre of Newcastle and has included lots of the innovation facilities, both those of the university and those that L&G developed on the back of that investment. You can see a more positive role for local government where they are funded to do so. I would say the same about the Greater Manchester innovation approach and the one that is being taken in the west midlands and in Glasgow.

For me, the argument we are having is that local government currently has very little role in the allocation of innovation funding. Combined authorities are starting to get small influence. If you were going to move to more translational spending, if that was where you were going to grow expenditure—not stop funding science; I am not a heathen—and if we were still going to do what the last Government were going to do and increase the overall proportion of GDP, I do not really believe that the economy has become in GDP terms as innovation intensive as it has done because we introduced some more tax credits and suddenly more people started doing R&D. I am not sure all of that was necessarily behaviour change. Some of it was probably people claiming stuff that maybe is not as much R&D, particularly in some SMEs. If the Government were to keep to the spirit of the previous GDP target and grow the pie, you would not put that into the traditional funding system; you would give it to combined authorities and local government to spend on the things that would have the most impact on productivity.

There is clearly a relationship between your ability to apply AI in a particular economy and the research happening in a field like AI, but it does not have to be done in the same place. That is the joy. There is excellence in this country and around the world that could be applied in local areas, many of which do not have research-intensive universities at all, or even universities in some cases. Some of the models of partnership have got round some of those locational issues. In the north-east, the north-east universities did the northern accelerator programme together. That included Teesside and now includes York. As you heard from Duncan about the clustering happening around funding and financing getting to the right level of scale, universities themselves are starting to collaborate



at the right level to deliver interventions that have genuine impact. That is about getting away from a university lens on innovation, I would argue, and looking at it from the perspective—I work for a business organisation—of the employer and of the people who are doing the actual activity in the economy and structuring the system around their needs rather than the producer interest. This is about a change in how we orientate ourselves rather than just spending more money ad infinitum, because we cannot do that. We have to target it on the things that have the biggest impact.

Chair: Thank you. Martin has a question regarding exactly public and private financing.

Q119 **Martin Wrigley:** Yes, thank you, Chair. I am listening to what has been said already and reconsidering the questions that I have in front of me. It was intriguing to hear your discussion of “Hunger Games”, having come from 10 years in local government before this role. It is very much something we recognise.

Coming back to the local government thing, I am still struggling to see how we mix the public and the private investment in places. My constituency is virtually next door to Steve’s, and we look to Exeter University. We have an awful lot of smaller businesses, a few very high-tech businesses, and some interesting ones hidden away that need some thought as to how they might expand and scale up and move forward. I went to see a 50-year-old manufacturing company that does high-precision hydraulics. It does maritime control systems that it sells for global positioning. You plug a lovely little device into your system and it will steer you around the world on your multimillion-dollar yacht. It is absolutely brilliant. It is tucked away in the back behind a whole load of other things. How do we get them to do more and expand more and use some of the things that might be coming out of Exeter University? It is almost spill-out from the science parks that we have and from those sorts of innovation places. How do we use public and private money to do that to spread beyond the little clusters that are building, the larger clusters that are building, and to move out of the triangles, even if it is just into the hinterlands of those places? That is a slightly different question from what I had written, sorry.

Henri Murison: I appreciate the question because it is where I am trying to get to. Siemens has put a train factory in Goole making cheap trains for Sadiq. It is very nice of Sadiq to give us that order. That is employing hundreds of people in manufacturing jobs. When Siemens came to Goole, it also wanted to bring its R&D activity and its supply chain. Sometimes you make an investment decision—in that case, because it is near motorways and you can get the talent—and then that means it will be a good place to do that innovation activity. It is linked to the real economy rather than because it is the natural place for the innovators to go.

Some of this is push and pull. That is what I am getting at. I absolutely think there are some inherent logics to where scale-ups, in particular



spin-outs from universities, will go, and we need to support those businesses. We absolutely do. I am coming here not to be a contrarian but just to make the point that, as well as focusing in detail on the issues that are specifically of interest to your Committee, you need to consider the rest of the economy, because the rest of the economy that is not in those categories is why the UK has such poor productivity performance.

We have lots of successful businesses in this country. Maybe we do not keep enough of them. Maybe we do not grow them quite as much as we could. All those things are true, but we also have a load of other businesses that are significantly behind where they should be. There are models that have been used. The AMRC, following the science and innovation audit, looked at high-value manufacturing in South Yorkshire and Lancashire. Most of the SIA was put in a cupboard and never used. This one did get used. It was one of the first. The AMRC decided to put a physical presence in Lancashire. Why you cannot just get from Lancashire to Sheffield to use the original AMRC we will come back to later. Fundamentally, it had to put that presence there, otherwise it could not reach the businesses. It has had some phenomenal results largely using what was at the time European funding designed to deal with regional disparities. Lancashire had one of the largest allocations of EU money. It still gets a lot of money from the shared prosperity fund, but now it is spread out between every district council in Lancashire and two unitaries, so it is not used quite as effectively, sadly, as it used to be, which is another thing we are doing some research on at the moment.

The AMRC was able to influence and impact hundreds of businesses, the same as it has done in South Yorkshire. As well as in South Yorkshire dealing with Boeing and lots of other big names, for example Rolls-Royce and Rolls-Royce SMR, in Lancashire it is specifically focused on SMEs in Lancashire. Yes, there are lots of OEMs in Lancashire—BA and others—but there are lots of supply chain businesses that also need the same machining and tooling that the prime businesses need. In how you design these models, what you are largely seeking to do is not come up with new innovation. It is about applying things that are already known in existing businesses. That is why Juergen Maier, when he did the Made Smarter review—he now runs GB Energy but was at the time at Siemens and was our vice-chair for a while—was so passionate about applying technology to businesses. His view was that Siemens and businesses like it would do very well out of the fourth industrial revolution, thank you very much, but if you were trying to apply digitalisation and manufacturing to SMEs they would need extra help. At the last hearing, Kit Malthouse got very annoyed about the Digital Catapult. If you look at Made Smarter, there are some good examples of central Government money being used to help SMEs to adopt technology change that they otherwise would not have done. We managed to not do the last industrial revolution, so we need to get better at this.

Q120 Chair: We only have a couple of minutes left officially, but we can go on for some time longer. We need to come to other aspects of infrastructure



as well.

Dr Mackay: I was just going to come in on that point. We need to think about how we work together across the public and private sector on pan-regional innovation. You heard from Lou Cordwell in the last session about the Cambridge-Manchester partnership where there are huge areas of complementarity across two very different geographies. That is something we need to consider. When we work with businesses across our sites, many of those are global businesses. They are not thinking about whether they locate in Manchester or in Liverpool; they are thinking about whether they locate in Manchester, Barcelona or Brussels. There is something around how we join up the regions and the clusters and ensure that we are able to talk to each other from a regional perspective.

I am involved with an organisation called the Northern Health Science Alliance, which brings together the research-intensive universities and the hospital trusts that are conducting research in the north. They run many pan-regional projects to deploy and test novel diagnostics using the whole of the north as a test bed; the same for advanced therapies and so on. That is an organisation that was previously publicly funded from UKRI, but now it is a membership model. It is pulling together the centres of excellence across quite a large geography to get the most for patients in the UK.

Chair: Thank you very much. We are going to move on to transport now.

Q121 **Dr Gardner:** There are two aspects to wider complementary infrastructure and transport. With regard to complementary infrastructure, I am talking about things like transport, utilities, housing and digital connectivity. Reading the brief, I feel there is a chicken and egg situation. To attract innovation and investment inwards and help develop it from there, you need infrastructure. To get the infrastructure, you sort of need the investment. It is how this works. Before I ask my questions, I want to bring your mind to my constituency Stoke-on-Trent South. I am not just plugging my own. There is a reason.

Chair: We all do it.

Dr Gardner: Stoke-on-Trent is the 13th biggest city in the country. It exists within wider North Staffordshire. We have two universities. A point of notice: I am an honorary research fellow at Keele University, which is one of them. I must make that known. We are on the Fifty500 hub of the advanced manufacturing growth corridor, all the way through to the University of Derby and the University of Nottingham, which ends at the end of Megawatt Valley, which I learnt about recently and is fantastic. You have this north midlands growth corridor, and Stoke-on-Trent city has huge economic latency, but we are stuck between Birmingham and Manchester and the investment there. How can we entrap that infrastructure investment in a city like Stoke-on-Trent and the other regions that have been mentioned? What are the gaps in investment and



in what we can offer in terms of that complementary infrastructure? How do gaps and supporting infrastructure such as transport, housing or digital connectivity impact regional innovation?

Dr Mackay: They do impact. We know when we are dealing with companies that want to move into one of our clusters that they will be looking at space in the first instance, but quite quickly the conversation turns to recruitment. "Where am I going to employ people? Where do they come from? Where do they live?" As you know, it is incredibly important. Global companies are making big decisions around our regions where not only are we promoting an innovation cluster but we have to work together across the private sector and the public sector to promote a whole region, because the conversation shifts to "people in, people out" quite quickly, and housing, schools and healthcare. It is incredibly important.

In my experience, one of the biggest challenges is pan-regional transport across larger geographies. The senior talent pool in many of our tech and life science companies is not only national but global. We have people coming from the south to our sites in the midlands and the north, and vice versa. The senior people are distributed across the UK and Europe. They are coming into our sites from far afield. It is something that we have to work on to get the right senior C-suite talent into our global businesses. Henri, do you want to say anything? You are probably more au fait on that than me.

Q122 **Chair:** I know you have a lot of experience in trains.

Henri Murison: I will be very brief. For the work that we did as part of the Growing Together Alliance, which I mentioned earlier, we spoke to businesses in a number of clusters and corridors. We talked to Unilever, which has a big presence at Port Sunlight. It also has lots of R&D in West Yorkshire linked to its manufacturing facilities. It was very concerned about how difficult it was to move between those places even though they are very close together. There was a reason why in our work on that we talked about the fact that both within mega-regions and between regions you also need better transport links. Those would obviously help innovation-intensive businesses that are seeking to attract and retain talent.

If you are trying to get good research people—it is a similar argument about the Oxford-Cambridge arc—you need to invest in that infrastructure, but it is probably for two different reasons in innovation terms. There are some parts of the UK that could be significantly more innovative in the types of innovation activity and innovation-intensive businesses they attract. The north of England is one of those places. We are constrained by the fact that our cities are relatively small and not well connected, so the agglomerative opportunity of giving the scale of our operation from Newcastle through to Liverpool is constrained. The challenge in Oxford and Cambridge is different, which is that those are very successful economies that are trying to attract talent to research in



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particular, and those people cannot afford to live there because housing is constrained and because infrastructure is constrained—water, transport, and so on. They often come with the same barriers, but sometimes what you are trying to do is attract innovative businesses to an area, and sometimes you are trying to deal with the consequences of having been very successful at doing that. You often have to invest in the same things, but there is a different reason for doing it.

Bluntly, the Green Book, which is currently being reviewed by the Chancellor and her team, incentivises you to spend money on things that are already happening, and dealing with the consequences of growth rather than trying to stimulate growth. This applies to other regions of the UK that would consider themselves peripheral as well. If you are trying to attract investment based on improving something so that people will come, it is very hard to get that funded. There is an argument that we should do both. I am not the person saying here today that we should stop doing anything. We should not move the Crick or stop doing the Crick. The point is that it is evidence that if you make purposeful decisions, whether it is about supporting infrastructure or whether it is about direct science-related infrastructure, you get results.

We have been behind the private sector-led consortium looking to improve connectivity between Birmingham and Manchester. That explicitly includes better connectivity for Stoke. Stoke's connectivity to Manchester is another of its strong economic drivers because of its proximity. We are very aware that wider infrastructure debate can have a big impact on the innovation economy, because people who are knowledge-intensive workers often want to commute to big cities. I know from talking to your colleague in the Stoke-on-Trent Central constituency that there are a lot of start-ups that have come out of people who maybe worked in other places, but live in Stoke and have then chosen to start businesses in Stoke. Your ability to live in Stoke and work somewhere that might have a larger cluster in a particular industry is a big driver of whether you start a business in Stoke, because you will not have had that job or been able to live in Stoke if the connectivity is not right. There are a number of questions to unpack, but I am conscious of time, Chair. I have gone on too much.

Q123 Dr Gardner: Actually, you have touched on a couple of my further questions.

Henri Murison: I am trying to cover as much ground as possible.

Dr Gardner: I appreciate that.

Henri Murison: I am galloping through the agenda.

Q124 Dr Gardner: You need the infrastructure in place to attract the innovation and growth. Then when you get the innovation and growth you have additional pressures as a result. How do you deal with that? I want a very short answer, and then I want to come back to transport,



because you mentioned one thing that triggered me. In answering that chicken and egg situation, what is the most pressing issue with supporting infrastructure in areas where you operate, and what would be relevant for an area like Stoke-on-Trent to learn from?

Henri Murison: I talked about the NHS. I remember its original chief executive, Hakim, who has gone back into the industry now, saying to me that you could not get talent in the life sciences because people might live in the next city but they could not build a career in the north of England because they would not know whether if that start-up failed they would be able to get a job in the next place, so they could not easily commute and still get back for the pick-up from the nursery. It is just people's everyday life problems.

You can look at the UK as a relatively small country and think, "Why is that place not more productive?" It is because we are really poorly connected in transport terms outside London and the south-east, and that leads to some pretty negative consequences. If you get to the kind of business I was talking about earlier, which I would want to be absorbing and thinking about using innovation in its day-to-day business, the inability, if you are in many regions of the north, because the roads are full because there are no good train lines, to get products to and from market is going to stop you using innovation. If you are not able to compete for business because you cannot be in a just-in-time supply chain, you are not going to apply that innovation to your business. There is an element where all this stuff starts to interact; businesses' willingness to invest in plant and equipment is driven by their connectivity, which affects their ability to interact with the market. All those decisions affect each other.

Q125 **Dr Gardner:** I will go to Dr Mackay, and then I want to come back to your comment on transport.

Dr Mackay: There are well-documented skills gaps in various science and tech disciplines. Think of the rate of growth of some of our companies in some of our clusters. They are looking to double in size over the next five years. I am rushing through my answer, but in layman's terms transport will allow more people on to those sites and into those companies. If we get it right, it is a great equaliser. It opens up huge opportunities in science and tech companies for people outside the cluster to come in. They are not just elite professor or scientist roles where they have hundreds of patents under their belt. These can be people who are school leavers or exiting further education colleges with technical skills who can come into these clusters and provide real value to our scientific companies, but we need to get the transport right.

Q126 **Dr Gardner:** Transport has come out as the major issue, over national grid, water and housing. Henri, you mentioned the Birmingham to Manchester connectivity and how potentially it would benefit Stoke. The current proposals that have been put forward do not because we are—



Henri Murison: I will answer that point, yes.

Dr Gardner: —on the west coast main line. When you have an area with that economic latency, it has to be considered. You linked it to the idea of east-west connectivity as well. We tend to look north-south along those big arteries. A lot of the examples you have given us are about the east-west link and being able to travel across regions in that way. I mentioned the north midlands. With regard to that, how can improved transport links between cities such as Stoke, Derby and Nottingham, rather than that way, drive regional investment and innovation-led growth? What transport policies specifically would unlock that investment?

Henri Murison: I will happily come and see you about the Stoke thing, and I will write to the Committee as well, because there is a point about displaced capacity. Wherever you put the new line, if you have more capacity, you get more direct services, including HS2 on to Stoke. I will pick that up separately, Chair, because I realise that is a cul-de-sac that you will rightly scold me for.

The simple answer is that the connected clusters work that we did directly identified that the east-west links are particularly important. We highlighted the links between Oxford, Milton Keynes and Cambridge in particular and the ones between the northern cities because there is particular evidence of the scale of those cities and their growth potential being constrained by their travel-to-work areas being too small. The obvious point is that knowledge-intensive businesses are usually in well-connected places because they need to attract relatively large numbers of those people to one place. The point is that there is only one economy in this country that currently has a transport system that allows you to get large numbers of people to one place, and it is London.

The way they deal with this in America is not necessarily to build train lines; they just build lots of motorways in their cities, and they are now doing public transport as well. In Europe, they build mass transit systems. In America, they build motorways. In this country, we have basically done neither, apart from in London and the south-east, and that is problematic. If you look at the productivity of many cities in the UK and compare them to their European equivalents, they are dramatically lower.

Innovation policy can solve some of those problems. Jim O'Neill's original thesis about the northern powerhouse idea was the principle that you do all these things together. There is a reason why Jim chairs Gritstone and is also interested in this transport stuff. Doing one of these things in isolation will have a certain benefit, but if the UK Government, as they are doing with the Oxford-Cambridge arc—I welcome that—take an integrated approach across housing, transport and innovation policy, you will get much better results. The point that I and other business groups would make is that having an integrated plan of which innovation is a part is the right solution. The example of having overheated the Oxford and Cambridge economy by having, rightly, invested in world-class



research that has led to lots of business and economic success, but not having put in place the infrastructure to cope with that, is absolutely bananas. It is the same problem but a different way round to have the north of England where you have all this latent potential and you have not invested to unlock it. They are both big problems for the UK. We need to solve them both.

Dr Mackay: We have spoken a lot about the Ox-Cam arc in this session. It has captured the public imagination as well. It is certainly supportive of providing transport and infrastructure links to join up those huge and internationally significant innovation clusters. I would make the point that that could be applied across other high-growth clusters that are already well established in the UK. What can we do to provide connectivity across the HS2 line from Old Oak Common, where Imperial is developing a campus, right the way through up to the knowledge quarter in Birmingham? If I think of the major life science and tech clusters in Manchester, Cheshire and Liverpool, there are huge east-to-west issues with connectivity. They are rapidly growing clusters, and they need significant support over the long term and a long-term strategy to bring them together in what is a relatively small geography. We think in terms of these small cities and these small regions, but the geography in question is incredibly small.

Q127 **Dr Gardner:** I have one final very quick closing comment. That draws out something that you referred to about keeping people and attracting talent. Innovation and start-ups have a tendency to fail. Lord Vallance mentioned accepting that level of failure but providing the infrastructure so that talent can stay within the region with the life and the houses and the nurseries but be able to travel easily to where the other jobs are.

Chair: That is a great point.

Dr Mackay: When people go to a location, they are not just moving for a job; they are thinking about the next three jobs. They are thinking about where their partner works. They are thinking, "Is this a big enough opportunity to take my children out of school and move to a new region?" It is not just selling a business. It is working together to sell a whole cluster.

Chair: Thank you very much. A theme that has come out in all our discussions is the interconnected nature of the regional economic growth challenges and branding. One of the messages I am taking away from this discussion is that our regions need better branding and an easier opportunity both to attract investment and to drive and deliver infrastructure.

We have run out of time. We could have carried on for a lot longer. On behalf of the Committee, I thank both of you, Kath Mackay and Henri Murison, because you have fuelled a very lively discussion and raised possibly more questions than you have answered. We look forward to integrating your comments in our report. Thank you very much for



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making the time to spend with us.