



Select Committee on Science and Technology

Corrected oral evidence: Contribution of innovation Catapults to delivering the R&D Roadmap

Tuesday 8 December 2020

11.15 am

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Members present: Lord Patel (The Chair); Lord Borwick; Lord Browne of Ladyton; Baroness Hilton of Eggardon; Lord Hollick; Lord Kakkar; Lord Mair; Baroness Manningham-Buller; Viscount Ridley; Baroness Rock; Baroness Sheehan; Baroness Walmsley; Baroness Young of Old Scone.

Evidence Session No. 2

Virtual proceeding

Questions 12 - 27

Witness

Alexandra Jones, Director of Science, Research and Innovation, Department for Business, Energy and Industrial Strategy (BEIS).

USE OF THE TRANSCRIPT

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

Examination of witness

Alexandra Jones.

Q12 **The Chair:** Dr Jones, are you there?

Alexandra Jones: I am not a doctor, but I am here.

The Chair: I have just given you a doctorate, Alexandra.

Alexandra Jones: I am so grateful, Lord Patel. Thank you very much.

The Chair: Welcome, anyway. We thought you were restrained the last time you came to visit us, because you were with a Minister. This time you are totally unrestrained and hopefully we will have an exciting session with you. Thank you for coming today. We appreciate it very much and we have lots of things to explore with you. Baroness Manningham-Buller has the first question.

Q13 **Baroness Manningham-Buller:** I will follow the Chair's example and call Dr Jones. You can regard yourself as having been given an honorary doctorate by this Committee.

I hope you heard some of the previous evidence, in particular the view on reviews. Could you succinctly tell us what the purpose of the Catapults was to begin with, and respond, if you can, about the glut of reviews? Is the number of reviews part of the Government not feeling they are getting value for money, is it good housekeeping, or is it too much?

Alexandra Jones: Many thanks to the Committee for my doctorate. I have noted it and will take that away.

Your questions are very good. Catapults are there to help the UK focus on exploiting areas of strength and capability where there are market opportunities. They are there to commercialise innovation in a way that drives long-term benefit for the UK. That is about providing businesses with access to expertise, skills, facilities and equipment where, either because of market failure or commercial risk, those are not available.

Catapults are there to drive new and improved products, processes and services to market. They do that by working with partners, locally, nationally and internationally. They remove some of the barriers to commercialisation and innovation, and try to accelerate growth in their sector. That is what they were set up to do. That is certainly what Hermann Hauser argued that they should be doing. That has been the vision since the outset.

There have been some reviews. I would argue that there have really been two big reviews. One of them was in 2014. The Catapults were formally set up in 2010, as you know, and then established between 2011 and 2013. At that point, the Government wanted to check what was and was not working well. In 2014, Hermann Hauser did his report, which was very positive and a real endorsement of the Catapults.

In 2017, anticipating the 2018 spending review, where, as you know, it is always important to make arguments for investment, the Government

wanted to look at Catapults and understand how they were contributing to economic growth. That was the Ernst & Young review with a whole range of recommendations. Those were the two big reviews, and they were checking how Catapults were doing, how they were performing and what they were doing.

What we are doing now is not a formal review. The Prime Minister set out on 27 January that this is about understanding how we can ensure Catapults are strengthening research and development capacity in local areas, improving productivity and contributing to greater prosperity. It is really an opportunity to understand what is working well from the Catapults' perspective. We have talked to the Catapults about what is working for example on key performance indicators, which were set up by the Ernst & Young review. Are there things Government can do to make the most of this?

The review was paused because of Covid, but it was really trying to clarify, knowing that there was a spending review and that we are committed to doing more on research and development and increasing investment, how we make the most of the Catapults' role in that system. It is not intended to be a review questioning whether Catapults should exist, but a review to understand how we can make the most of them.

Q14 **Baroness Manningham-Buller:** Thank you for that answer. I have two related questions. Without anticipating the result of the Prime Minister-induced review that you are currently going through, is it your judgment that they have broadly been successful? That is the first question.

The second question is about risk. We heard from Dr Campbell that they need to take risk. The question is about the degree of risk, particularly with taxpayers' money. This Committee would certainly support taking quite substantial risks, because from that opportunities come, but what is your perspective both on success so far and the level of risk appetite? Obviously, it will not be the same for all the Catapults, but is it sufficiently high?

Alexandra Jones: On your question about success, yes, they have been successful. As the previous witnesses set out, there are different Catapults, different sectors and lots of different stories about what has happened and how they have worked. There have absolutely been some huge successes. To look back over the last year, the High Value Manufacturing Catapult has contributed to the Ventilator Challenge. You have had some fantastic work with the semiconductors in Newport. There is the Centre for Process Innovation; there are some fantastic results about getting in more investment to some of the small and medium-sized enterprises based on their interaction with that Catapult. There are a lot of success stories that you can measure against innovation, so, yes, they have been successful.

On the level of risk, that is one of the really important parts of Catapults. They enable small businesses to take a risk and test out some products and ideas. They help larger businesses pilot new products that, frankly,

are not cost-effective to do at scale, but they can work with the Catapult to try them at a smaller level. They are encouraging some taking of risk.

I think your question is about the level of risk. That is likely to vary by sector. Dr Ian Campbell talked about the grant funding agreements and the varying of key performance indicators. That is partly a conversation for those Catapults to think through. As part of the thinking we are doing about Catapults and their role in the innovation system, that is one of the big issues that we need to look at.

So, yes, we need to take risk; we need to calibrate how high it is and how we can support them to do that.

Q15 The Chair: Are you intending to do another review of the Catapults?

Alexandra Jones: We committed to looking at how they were performing when we did the Ernst & Young review. That is general good practice. Every five years you need to look at how institutions are performing, recognising the fact that they have been reviewed a number of times. They have been going for 10 years. If you look at Fraunhofer, they have been going for decades, and that is part of their secret to success.

The answer is that we will need to make sure that they are performing well. What kind of review it is and how we do that is a question that we want to consider, so I would want to come back to you on that. As you know, we always need to keep an eye on how the Government are spending money and what is working. A review can be interpreted as a very big review that questions existence, or something that looks at what is working well and what needs to be improved. We will always need to do reviews like that. A big-scale review is quite different.

The Chair: Is the review with an intention to change the model?

Alexandra Jones: The informal review that we are doing at the moment is to try to understand what is working well. One of the big findings that we knew before we started is that they are different. Catapults may have a similar purpose, but one sector can look quite different from another. The High Value Manufacturing Catapult has a lot of equipment; it is incredibly important in that sector. The Digital Catapult is quite different. We are trying to understand how we can make sure these work as well as possible. That would be the focus.

The Chair: I declare my interest with Warwick Manufacturing Group. The high-value manufacturing model was already in existence to a degree.

Alexandra Jones: It was.

Q16 Viscount Ridley: Good morning, Professor Jones.

The Chair: You might get to viscount yet, Alexandra.

Viscount Ridley: What has been the overall return on investment of the Catapults? In particular, can you give me examples of which sectors or areas the Catapults have been most successful in, both in catalysing increased investment from the private sector and in successful

commercialisation of innovations? Perhaps you could also mention some that have been less successful.

Alexandra Jones: That is an excellent question. We are looking at the Catapults' impact through their contribution to growth of the sector, to increased productivity and to wider benefits for the UK economy. Indeed, how you measure return on investment is something we have been working with Innovate UK on, including trying to understand how we use the KPIs, how we look at expected outputs and economic outcomes. We have a Catapult impact evaluation framework online that goes into this in a bit more detail so we can really understand this.

If you look at some of the returns on investment, since 2013 Catapults have supported over 8,000 small businesses and have had nearly 15,000 collaborations with industry and over 5,000 academic collaborations. Last year, they invested a total of £744 million: £236 million was core grant, £154 million was commercial investment, £130 million was collaborative R&D and £224 million leveraged collaborative R&D. There are various measures of how they have worked with businesses and universities and what investments they have brought in.

There are also some surveys. We have been talking to industries, because, as Dame Ottoline and Dr Campbell quite rightly said, some of this is about the interactions and the nature of relationships, which can be quite hard to capture in specific indicators but can make a significant difference. Some of the surveys of users of Catapults demonstrate that there are some real successes in accessing facilities and developing new ideas and products. Offshore renewable energy is particularly successful in this area. If you look at investing more R&D, offshore renewable energy again does particularly well. It depends how you measure them.

On your point about who has been most successful, Dame Ottoline and Dr Campbell noted that the High Value Manufacturing Catapult is particularly successful in getting in that external investment. Again, it depends how you measure it. The Cell and Gene Therapy Catapult—this is not just cell and gene; it is all the health ones—is working on a whole range of things, such as advanced therapies and developing new ways to use data to understand therapies for patients. That is incredibly successful but does take longer.

It depends how you measure it. Certainly, the High Value Manufacturing Catapult has been successful in getting the investment. If the purpose is a bridge between research and industry and innovation and commercialisation, some of the measures of success will look different in different sectors, because they are different.

Viscount Ridley: How do those numbers that you mentioned for leverages compare with the hopes that were held out for the Catapults 10 years ago, or do you not have access to that information?

Alexandra Jones: I would want to follow up on the full details. As you know the Catapults were established on a third-third-third model, which is recognised good practice as a way to be able to take risks and

incentivise different ways of working. On balance, that is roughly where we would expect it to be.

It varies by individual Catapult. Again, if we are going to make sure that they can fulfil their purpose, how do we ensure that the measures of success are ones that help them do that, rather than perhaps pushing them to collaborate with large businesses so that they can meet their targets without perhaps focusing on the purpose? In high-value manufacturing, that might be incredibly important and effective. In other areas, such as digital, that may be less supportive of meeting the purpose of the Catapult.

Q17 **Baroness Sheehan:** What new developments in science and technology hold most promise in terms of the ability to be commercialised and to deliver significant private sector investment? Should any new Catapults be developed? If so, in which areas? I wonder whether, in addressing the areas, you can talk a little about the challenges involved in identifying those areas, such as transport and skills.

Alexandra Jones: There are many new developments. I believe Dame Ottoline talked about some of the transformative technologies. Some of those are in the 2017 industrial strategy grand challenges. There are a whole range of fascinating technologies. In quantum, synthetic biology and a whole range of areas, there is huge potential for us to be doing even more, both with research but also, given that it is not linear, as noted earlier, looking at opportunities in the market to think about where there are challenges to which we could bring a whole range of academic and industry expertise. It is difficult to do justice to the question, in a way, because there are so many and the UK has many strengths.

On your second question about what that means for new Catapults, my response would be to ask where Catapults make the most difference to making the most of these new developments and technologies. Where might it be a different part of the innovation ecosystem? Catapults were originally established in areas where there was a global market, UK research capability and absorptive capacity, and where there was some kind of market failure. If that is used as a way to consider where there might be a gap for a new Catapult, that is a way to think through whether a Catapult is the answer, whether it is actually about building on some of the existing Catapults, whether it is about building on some of the existing networks, institutions and centres, or something else.

There are always questions about the role of government. Where does government have a role in incentivising, pulling things through and helping to take risks? It might be something that the private sector can very happily take on, but it is useful for government to send some signals about the seriousness with which it is taking the opportunities.

I appreciate that this is not a specific answer to your question, but there is a whole range of areas where there are fascinating developments. We are keen to work with the Government Office for Science, UKRI and many others on horizon-scanning. There is a range of areas for potential Catapults. We are going through a review to understand what the

opportunities are at the moment. We have just had the spending review. The answer is about where the most opportunities are where a Catapult is the answer, and then how we can make sure that we are making the most of the existing Catapults.

Baroness Sheehan: Dr Campbell, in answering the question, mentioned some of the opportunities that have been thrown up by the net-zero target by 2050. He mentioned a couple of things. We are hearing more and more about the importance of nature-based solutions in meeting that target, and I wonder whether that is an area where Catapults might venture.

Alexandra Jones: Dr Campbell is absolutely right to highlight net zero, and he mentioned a whole range of issues there. There is a net-zero board in government that brings together scientists, UKRI and others from across government to make sure we are really joining up on what those opportunities are, so we can think about Catapults as a potential answer among others.

Nature-based solutions are incredibly important and something we certainly would consider. It is very hard to answer now. I would be very happy to take that back. We will be looking at a whole range of options if we want to establish some new Catapults. Also, as part of the innovation work that we are doing with Viscount Ridley on the Innovation Expert Group, which he mentioned, we are thinking about that wider innovation system and where we can ensure that we are making the most of some of the great work that we are doing.

Q18 **Baroness Rock:** I declare my interest as a board member of the Centre for Data Ethics and Innovation.

I want to come back to the government commitment to invest £22 billion a year in R&D by 2024-25. To reach the 2.4% target, two-thirds of investment will ultimately have to come from the private sector. What proportion of this increase do the Government expect the Catapults to generate? Secondly, to what extent are the Government confident that this increase can be achieved with the current approach, or should we be looking at a step change to help deliver the Roadmap?

Alexandra Jones: That is an excellent question. As you will have seen in the spending review, the Government reiterated their commitment to meeting that 2.4% target.

On the question of what proportion Catapults are expected to contribute, there is no specific proportion or target for Catapults to contribute. As we said, they have the third-third-third model. They are an incredibly important part of the ecosystem. I would argue that that is both in what they contribute but also in what they incubate. One of the things that Catapults quite rightly do is support those smaller businesses and some emerging new products and processes that will then, if this works, support further private investment down the line. What they directly do and then the impact they have later on will be incredibly important to this, but there is no specific target.

On how confident the Government are in achieving this, the Roadmap sets out a whole range of activities. The spending review commits £14.6 billion of R&D funding, and we are looking, as part of the Innovation Expert Group and a whole range of other things, at how we can continue supporting private sector investment. There is a range of ways that we do this. The industrial strategy challenge fund, for example, is a way of leveraging a whole range of investments from the private sector, and it has been very successful in doing so. We have some very competitive tax reliefs, which we know is incredibly important to businesses as they are thinking about investing in R&D.

We also know that skills matter. When the private sector is thinking about investing in R&D, skills are incredibly important. The Catapults are an important part of that. They offer skills and expertise. It is fascinating to see the impact that the Advanced Manufacturing Research Centre in Rotherham has had on the local area and on inward investment.

We are confident that the UK continues to be an incredibly important destination for inward investment. We do better than many OECD countries in inward investment from overseas in R&D. We are very keen, though, to build on those strengths. That is why the Roadmap set out its commitment to doing more, and Catapults will be an incredibly important part of that, but just one part of that, because we are keen to make sure that we are not giving them a target that might make it harder for them to achieve that purpose of supporting innovation and commercialisation without a specific investment target.

Q19 **Baroness Walmsley:** Alexandra, the Roadmap notes that UK R&D investment is currently concentrated in major players in a few sectors. What sizes of businesses do the Catapults tend to work with now? Are they helping to overcome that problem? Does more need to be done to incentivise collaboration with and investment from a wider range of business sizes?

You mentioned skills just now, but I want to ask about a different aspect of skills—the skills within the Catapults themselves. Are they attracting the right people with the right range of backgrounds, experience and skillsets to develop successful careers within the Catapults themselves, because they rely a great deal on the quality of the people working with them?

Alexandra Jones: Those are excellent questions. Catapults work with both large and small businesses. From the figures I noted, since 2013 the Catapults have supported over 8,000 small and medium-sized enterprises. They certainly work with many small and medium-sized enterprises. There are some very interesting examples of how they are doing that in some sectors where barriers to entry are particularly challenging. You have the Offshore Renewable Energy Catapult and the Levenmouth Demonstration Turbine. It is one of the world's most advanced open-access facilities and, since 2016, over 100 small businesses have been working with them to test out products. It has had £16 million of additional funding.

They are actively trying to work with some of those small businesses and, in fact, provide tailored support to many of those SMEs. As Dr Campbell noted earlier, it is both about some of the funding that you get through the grant programmes but also some of the advice and toolkits to help smaller businesses understand how they might develop products, processes, the new technologies and their workforce, and commercialise to access new markets. There is an SME development programme providing quite intensive business support, preparing start-ups to be investor ready as well as having a local community focus.

There is quite a lot of support for SMEs and some fascinating results. I mentioned the Centre for Process Innovation earlier. One striking thing is that the Catapults worked with a group of 170 small businesses, before they worked with the CPI, to raise £184 million in private investment. Afterwards, that increased to £765 million. There are some good examples, and the support is access to facilities and equipment but also skills. There is a range of results.

One of the things that clearly matters to the SMEs is some of the advice provided by Catapult staff. Catapults are trying to diversify some of the skills they have. They are trying to set up a fund in renewable energy at the moment, because they see that there is a gap in the market for that. There is a range of staff in the Catapults. I would like to come back to you with some thoughts on whether we have all the right skills. The feedback from industry suggests that we have many of them. I am not sure that I can give you a full answer without going back to that, but the Catapults certainly give advice, yes.

On the question of some of the skills needed, they are looking to diversify. There is probably more that we can do to look at that, so I would like to come back to you.

Q20 **Baroness Young of Old Scone:** Could I declare an interest as a recently former chancellor of Cranfield University?

UK R&D investment is heavily skewed to particular regions, although the Catapult activity is reasonably well spread across the country, driven by innovation opportunities. What do you see as the role of Catapults in the levelling-up agenda? Reading between the lines, I think Dame Ottoline was saying that a close eye needs to be kept on ensuring that levelling-up politics does not pervert decisions on the location of Catapult investment or, indeed, innovation investment in general. Is there the potential risk of tension between achieving the 2.4% target and helping with the levelling-up agenda?

The Catapults' access to the Strength in Places Fund is sometimes hindered by the fact that the Catapult activity is not in the region that the Strength in Places Fund is pitching money at. Does that need to change?

Alexandra Jones: Those are excellent questions. On the role of Catapults in levelling up, I cannot comment on the politics, but I can certainly comment on some of the work that we are doing where there are real opportunities. The Catapults were established as national assets,

so they were not set up with the specific objective of supporting levelling up, but they clearly have a big impact on local areas. I mentioned the Advanced Manufacturing Research Centre at Rotherham, which has attracted over £280 million of inward investment and over 3,500 jobs. The Compound Semiconductor Applications Catapult in Newport is a £43 million programme bringing talent and skills together, with well-paid jobs and greater prosperity and, strikingly, working with Cardiff University and regional industry partners, so doing some of that pulling together of industry and academia that is wanted.

The Catapults were not established for levelling up, but they contribute to it significantly. When an opportunity is identified, such as with the semiconductor, a great deal of thought is put into the locations of Catapults and how they can make the most of local industry. It is also striking how many of these Catapults have centres around the UK. The High Value Manufacturing Catapult has a number of centres around the UK, as do some of the other Catapults. There is the Energy Systems Catapult based in Birmingham, and there are the ones with multiple centres: the Digital Catapult has many centres, and the Offshore Renewable Energy Catapult is in Strathclyde but also in the north-east. As people have thought about where to locate the Catapults, there has been a real emphasis on where there is industrial opportunity and research. It is striking that they are around the UK.

On making that more explicit, one of the things that we are looking at as we think about how to make the most of them is place: how they contribute to places, whether we are putting barriers in their way, and how we might enable them to contribute even more effectively. We will be thinking about that as we produce our R&D place strategy, which we committed to in the Roadmap. We will be thinking about a whole range of ways to ensure R&D contributes to levelling up. We will be thinking about Catapults in that context.

Because we have the R&D place strategy, I would argue that the 2.4% target, which is incredibly important, will be thought about in the context of how we ensure that we are making the most of R&D around the UK. Rotherham, for example, is a particularly attractive place for private sector inward investment because of the Advanced Manufacturing Research Centre and the High Value Manufacturing Catapult activities there. We want to see whether we can make even more of that than we do now. Catapults are one of the ways in which we can strengthen our ability to attract inward investment and meet that 2.4% target.

Baroness Young of Old Scone: Does that mean that, if you are looking at revised KPIs for the Catapults, one of them might be about locational activity and place activity?

Alexandra Jones: It is a really important question that we want to look at. There is always the important issue of balance to consider. If we require a Catapult to focus on the local area but many of the industrial opportunities are around the UK, how do we make sure that we do not create perverse incentives? Having said that, how we make sure that there is local benefit from a Catapult being there, and how we can make

the most of it, is incredibly important. We will certainly look at that. We want to manage the risk of conflicting incentives, but we also absolutely want to understand how we can make the most of Catapults' contribution to place.

Dame Ottoline talked about the network. Catapults have centres across the UK, and they make the most of them. Greater Manchester is near the Rotherham Advanced Manufacturing Research Centre and can gain some benefits from that, as can Leeds City Region, et cetera. How can we ensure that we make the most of proximity, even if it is not directly in the city region? We are keen to look at that. No decision has been made as yet because the review is ongoing, but it will be an important consideration. Place was one of the things we wanted to look at.

On access to the Strength in Places Fund, I recognise and have heard the concerns about where the Strength in Places Fund is focused and working with businesses in the area. If you are slightly outside that area, that can be more challenging. As part of the R&D place strategy, we are looking at how we make the most of R&D assets around the country. It is certainly something we will consider. I do not have an answer for you at the moment on that.

We are looking at making the most of local assets that are also national assets, and thinking about how we ensure that we have place-focused funds that are all about making the most of R&D in places. We also need to ensure that we do more to work with local areas so that we understand where opportunities are and to make the most of investments throughout the system. Catapults are not in a place-focused fund. They are a national asset for innovation, but they are clearly incredibly important to the levelling up agenda, as is some of the national infrastructure. We are looking at how we make sure that we make the most of those assets, alongside some place-focused funding such as the Strength in Places Fund and working with local areas.

Finally, R&D is an incredibly important part of the levelling-up agenda, but it is clearly one part. For many places, how it interacts with infrastructure investment and investment in skills—that wider investment in levelling up—will be really important. We also recognise and have talked a lot to various partners about the need to respond to different places' needs. In the same way as the Catapults having very standard KPIs does not allow you to respond to the needs of different sectors, we want to make sure that we really build on the strengths of particular places. It may be about more innovation in some, and about more research in others, but that will be an important part of this.

Q21 The Chair: Alexandra, we get different government documents coming out, presumably leading up to the science superpower that the UK is going to become. We recently had a report from the Department for Digital, Culture, Media and Sport, for example, about the UK becoming a key place for data-driven technology and businesses. The Department of Health and Social Care has just announced that it will produce a plan and a strategy for health data and data platforms to drive healthcare, et cetera. Is it right that each department produces these plans and

presumably therefore funds any research and innovation in that area, or should it be with you?

Alexandra Jones: It is really important that we have specialists in particular areas looking at those areas. Would BEIS be the right department to understand how to maximise the opportunities of health data as well as all the ethical considerations that are vital in this? I would suggest that DHSC is a better place to do it. We have various fora where we work together across government to make sure that we are making the most of those skills and expertise across government. There is the Government Office for Science and the chief scientific advisers' network, and there is an R&D board within government where we talk about these issues and try to make sure that we make the most of the work going on elsewhere.

It is really important that different departments work with different communities to ensure that they are making the most of these opportunities. We are also working with them to ensure that all this contributes to the wider ambitions on R&D, the science superpower, the R&D Roadmap and the 2.4%.

Q22 **Lord Mair:** We heard from the witnesses in the previous session about a number of changes they would like to see in the way Catapults operate. Dr Campbell talked about the need for more collaborative R&D funding and the third-third-third model. He was clearly conveying to us that there should be more collaborative R&D funding. His other point was that only 30% of the funding on any project can be available to the RTOs—the research and technology organisations—whether they be the universities or the Catapults. Would you like to comment on those two things?

Alexandra Jones: We have been working very closely with Innovate UK as part of the work that we have been doing on how we make the most of Catapults. This issue has emerged, and we are looking at it as part of the review. As you know, we have just had the spending review. There is lots of work on thinking through the implications of that. It is certainly noted and something that we are considering, but I cannot respond with anything final, as we are going through the work at the moment.

Q23 **The Chair:** What is your forward thinking on Catapults? You said earlier that you do not intend to do a review necessarily but to look at what is and is not successful.

Alexandra Jones: Catapults are an incredibly important part of the innovation ecosystem and one of the ways in which we are looking to build on us being a science superpower. We have been very clear that we are very committed to Catapults. We want to make sure that they work as well as possible and that we think about them in the context of that wider ecosystem. They are an incredibly important part of it. If we try to make them shoulder too much responsibility, it will be harder for them to do what they are particularly good at. We are looking at how we can make sure that key performance indicators, for example, support their performance rather than perhaps not support them to do as well as they

can, which you have heard about. We are looking at how we make sure that we make the most of opportunities in different sectors.

We are expecting to conclude our thinking early next year on how we can make the most of them, and we are also thinking through the implications of the spending review. We will also want to work with the Innovation Expert Group to think about how it fits into that wider system. As I said, Viscount Ridley is in that group. The plan is to build on them to ensure that we put in place the conditions for success as much as possible in this current context, and then to ensure that we continue to look at opportunities to make the most of them. That is not about keeping them under review, but, as many of you have noted, there may be sectors that have opportunities, and it will be important to keep an eye on that, but there are no concrete plans for that at the moment as we work things through.

Q24 **Baroness Manningham-Buller:** To what extent do the Catapults learn from each other? If one Catapult has found a very successful route through a problem—a relationship or a way of working—despite the fact that they are engaged in very different subjects, is there a mechanism for ensuring that what one Catapult learns and builds on, which might have applicability for another, is shared?

Alexandra Jones: That is an excellent question and one that has come up as part of the work we are doing with Catapults: to what extent are we making the most of the network and, as you say, the lessons that they learn, some of which are sector-specific but some of which are much more generally applicable? That is something that we are keen to work with Innovate UK on in the coming months. Dr Campbell mentioned this, as did Dame Ottoline. We want to think about how we make the most of them as a network, both to learn from each other but also to identify opportunities and potentially contribute on the levelling-up side. That is an issue that we would like to look at and think about how we can deal with most effectively, working with Innovate UK.

Q25 **The Chair:** What one thing could we recommend that would help you to take your responsibilities forward?

Alexandra Jones: That is an excellent question, which you also asked Dame Ottoline and Dr Campbell. It would be incredibly helpful to hear from you how we might make the most of the Catapults. As Dr Campbell said, they are often compared to Fraunhofers. They are compared to lots of different systems. The Catapults are a UK system, and we are building on it. Your reflection on how we could make the most of them and the opportunities to do that would be incredibly helpful. That is the main thing.

On Baroness Manningham-Buller's question, I have just recalled that Catapults have a self-organised network to exchange information. We are looking at how we make sure that we capture some of that and learn from it as government and Innovate UK, but they have a network of their own.

The Chair: The Fraunhofer has been mentioned several times in the previous session, and you have also mentioned it. That is the German model that has been highly successful. That is not the model we adopted. We went for the Catapult model. Why was that, and should we change it?

Alexandra Jones: Germany is quite different. I say that it would be good to move on, although I have now reintroduced it into the conversation, because it is an inspiration but Germany is quite a different context. Academics are much more focused on industry than we are in the UK. It is quite a different approach. Fraunhofer is an application-oriented research organisation. There is a lot more R&D funding available from industry, et cetera. It is a different model.

Catapults are set up as standalone businesses because the UK does not have quite the same commercially minded academic community. They try to focus on bringing academics and businesses together in particular sectors where there is an opportunity to change the way we do things. They are designed for the UK system.

There may be things that we can learn from Germany about incentives to be more commercially minded in academia and which we should bring in, but if we are looking at what an institution charged with supporting innovation and commercialisation in particular sectors can do, I have to say that the Catapults are designed for the UK system we are operating in. They have proved themselves to be successful, so I would be keen to look at how we might build on that and continue to improve but not try to throw it up in the air again. It took decades for Fraunhofers to be established and work really well. We should look at how we provide some stability for Catapults, as we said in the R&D Roadmap.

Q26 **Lord Borwick:** Ms Jones, the boss of Pfizer has said some fairly rude things about government investment in vaccines and the way they manage them. Were his comments about the German ways of doing it, and would they have been appropriate if he had done all the work in England?

Alexandra Jones: I have not seen the detail of those comments from the boss of Pfizer, so it is hard for me to respond. What did he say?

Lord Borwick: He said that the monitoring of investments in his projects got in the way of the progress of his projects. I wondered whether that happened more in Germany than it did in Great Britain.

Alexandra Jones: I cannot compare the levels of monitoring, although I would be happy to come back to you on that. In the UK, the Government are committed in the R&D Roadmap to trying to reduce the unnecessary bureaucracy in the system, with the idea that, while it is critical to ensure that we are monitoring and evaluating, it is also incredibly important that we are not asking researchers and innovators to go through unnecessary hoops so that they actually have time to get on with the work that they are doing.

Although I cannot comment on the comparison, certainly the R&D Roadmap clearly committed to that. We have already made some

announcements about reducing bureaucracy and we will return to that in the coming months when we think about how we make the UK one of the best places to innovate and do research, and to do so in a way that we understand what works but we do not have unnecessary bureaucracy requiring people to move away from their work in order to focus on the forms.

Q27 **Baroness Young of Old Scone:** I have a couple of factual points. Do you have any idea of timescales for this non-review of the Catapults and for the R&D place strategy?

Alexandra Jones: We are looking to conclude early next year the work we are doing on how we best support the Catapults. We have had a lot of conversations with Catapults and businesses, working closely with Innovate UK. We are hoping that those conclusions will be ready early next year. I can come back to the Committee once we have a firmer timescale, but it will certainly be the first quarter next year.

Following on from the spending review, we are looking at how we work with businesses, academics and others around the country to ensure that we have a really strong place strategy that makes the most of the potential around the country, and we are looking to publish that strategy in the coming months. In the meantime, we have had three meetings of the place advisory group, with a fourth soon, which is helping us to work through what that place strategy should look like. As you know, one of the key things is working very closely with places and businesses around the country to make sure that it is done with them rather than anything else. The place advisory group is really important in that.

The Chair: Do you have any timescale for the full details of the Roadmap?

Alexandra Jones: We have committed to publishing the place strategy and a people and culture strategy. We have further work on the bureaucracy review. I am sure we will want to update in the near future on progress so far and what next. There is a great deal in the Roadmap, as you will have seen. An awful lot of actions are identified, but issues and the ways to deal with them are also addressed. I am sure that we will want to publish more about progress and next steps in the coming months, but there is no confirmed date at the moment.

The Chair: You have exhausted us, Alexandra. Whether we have exhausted you, I do not know. We see the Minister in the new year. I do not know whether we will have a return visit from you. That is up to the Minister. Thank you very much indeed for coming today. We much appreciate it. Have a good Christmas and a happy new year.

Alexandra Jones: I am very grateful for the opportunity.