



Business, Innovation and Skills Committee

Oral evidence: [The Productivity Plan](#), HC 466–ii Tuesday 20 October 2015

Ordered by the House of Commons to be published on 20 October 2015.

Witnesses including written evidence where submitted:

At 9.30 am

- Sian Foster, General Manager of Government and External Affairs, [Virgin Atlantic Ltd](#)
- Stephen Harris, Chief Corporate and Strategy Officer, [EE](#)
- Paul Harris, Director of Economic Development, [Rolls Royce plc](#)

At 10.15am

- Peter Horrocks CBE, Vice-Chancellor, Open University
- Professor Dave Phoenix OBE, Chair, [Million+](#) and Vice-Chancellor, London South Bank University
- Mike Dawe, Group Board Director, [City & Guilds](#)
- Harvey Young, Chairman, [National Consortium of Colleges and Providers](#)

At 11.00am

- Dr Ruth McKernan CBE, Chief Executive, [Innovate UK](#)
- Dick Elsy, Chief Executive Officer, High Value Manufacturing Catapult
- David Harbourne, Acting Chief Executive Officer, [Edge Foundation](#)
- Professor Richard Brook OBE, President, [Association of Innovation, Research and Technology Organisations](#)

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Members present: Mr Iain Wright (Chair), Richard Fuller, Peter Kyle, Amanda Solloway, Michelle Thomson, Craig Tracey, Chris White

Questions 54-129

Witnesses: **Sian Foster**, General Manager of Government and External Affairs, Virgin Atlantic Ltd, **Paul Harris**, Director of Economic Development, Rolls-Royce plc, and **Stephen Harris**, Chief Corporate and Strategy Officer, EE Ltd, gave evidence.

Q54 Chair: Good morning. Welcome to our Committee. We are really grateful for your time and are looking forward to hearing from you in terms of the Government's Productivity Plan. Perhaps we could start by you introducing yourselves to the Committee.

Sian Foster: I am Sian Foster. I am General Manager of Government and External Relations at Virgin Atlantic.

Paul Harris: I am Paul Harris. I am Director of Economic Development for Rolls-Royce.

Stephen Harris: I am Stephen Harris, Chief Corporate and Strategy Officer at EE.

Q55 Chair: May I begin to all of you by asking what your assessment is of the Government's Productivity Plan? In terms of the various aspects of what you do in terms of your own business and the economy as a whole, does the Productivity Plan add real value?

Sian Foster: It is a big question. It is a big plan. It has a lot of different constituent parts and there are some really interesting aspects within that. In terms of the focus on competition and having a competitive industry in the UK, that is very important to us. The UK aviation industry is a highly competitive market. The international aviation industry is a highly competitive market. The Productivity Plan talks about a competitive tax regime and that is something that we would want to explore from an air passenger duty point of view. Air passenger duty in the UK is the highest air passenger tax in the world and at least double that of the nearest rival in Germany, so that is something that we would want Government to look at, as airlines play a key role in driving exports through cargo, through tourism, but also through overseas ticket sales.

Q56 Chair: You do not think the Productivity Plan addresses that.

Sian Foster: I do not think it covers ADP specifically, but we would want it to in order for it to be successful.

Q57 Chair: It seems to cover everything else. Do you think it should have included air passenger duty?

Sian Foster: I think it should include air passenger duty. It talks about exports; it talks about connectivity; it talks about trade links. There have been a lot of ministerial trade missions over the last few months, to China and to India. Ministers have travelled by plane along with other business travellers to make those connections. Aviation is a really important part of improving the UK's trade, improving connectivity, improving exports, driving inbound tourism and all those other contributory factors.

Q58 Chair: Paul, may I ask you to add on to that? You can put your capital anywhere in the world; you are a global company. Does the Government's Productivity Plan help that? What is your assessment?

Paul Harris: Indeed. First, we really welcome the focus on productivity from the UK Government. We support many of the conclusions of the Productivity Plan: that there is underinvestment in long-term research and development and other productivity-improving factors in the UK, and we would like to play our part in helping to address that balance. We welcome many elements of the plan. We welcome the focus on innovation, in particular, and the science base and the focus on long-term investment. However, we do think that in order to be most effective the plan really needs to take more of a sectoral approach and recognise that there are some sectors that are strategic to the

UK, where long-term investment does have global mobility and where partnership between industry and Government is required in order to co-ordinate joint investments to create the best outcome for the UK and for the companies that choose to invest here. We also think that there could be more of a focus on the productivity of whole supply chains rather than individual companies. That is something we think could be added to in the plan. We also feel that the plan is missing some long-term, hard financial commitments to those strategic sectors, which would provide the long-term stability and confidence that businesses need to choose to put their long-term investments in the UK.

Q59 Chair: Thank you. That is very helpful and, if I put you on notice, I think we will want to press you on the sectoral focus and upon supply chains in a moment, but, Stephen, let me come on to you. Does the Productivity Plan published by the Government add value?

Stephen Harris: Similar to Paul, yes, it does. The ambition and the aspiration is absolutely spot on. A little bit of context: the thing I would probably headline is the long-term investment piece and encouraging business and enterprise to have the capability to invest in the long term. To put some sense of size and scale around this, the UK digital part of the economy generates something like 10.4% to GDP. That is expected to grow to over 12% by next year, but that takes billions of pounds of investment, so we need to ensure that we have the ecosystem that can support that long-term investment. The digital infrastructure that the UK is building is the second industrial revolution, to some degree. It is going to be here for many years to come; we have to get it right.

Picking up something else that Paul said, just thinking across industry, the example I would give you is the High Speed 2 rail link—great infrastructure in railways, but there should be work with the telecoms industry to make sure we can also put our infrastructure in at the same time, so the complete package is delivered rather than in individual, bite-sized chunks. That has to be better for the UK.

Q60 Chair: Let me press you on that. The plan provides that. Prior to publication, it did not have that. Government policy was somewhat lacking, but now, as a result of the Government's Productivity Plan, you feel more confident that there is a long-term investment focus, that you can go to your board and say, "The UK is a great place to invest because the Productivity Plan adds real value".

Stephen Harris: Yes.

Q61 Chair: Could I ask particularly Sian and Paul about the sectoral focus? Paul, in particular, I was really struck by the written evidence from Rolls-Royce, which says, exactly as you have just outlined, that this closer Government interface between Government and industry needs to think about strategic sectors. Sian, I was very interested in your point about apprenticeships and how you are not taking on apprentices this year and next year, just because of the cyclical nature of your industry. Does the Government's Productivity Plan address that sufficiently, and what else would you add?

Sian Foster: In terms of apprenticeships, that is absolutely right. We have had a long-term engineering apprenticeship programme, since 1992; in the last 10 years, we have taken on 114 apprentices through that programme, and many of them are still within

our business. However, with changing aircraft types and changing business plans, there is not currently a need for engineering apprentices to be entering the business, so the programme is on hold.

That does not mean to say that we are not investing a huge amount of resource in training and developing young people and people within our business. We have a pilot cadet programme that has been launched in the last year or two, which is hugely popular and hugely oversubscribed. It gives an opportunity for people who would not normally be able to train to be a pilot to enter an incredibly exciting and rewarding career within Virgin Atlantic and within the aviation sector. We also invest a huge amount in developing our people from a cabin crew service delivery point of view. We have an award-winning service programme that is all about safety and security training, which is obviously absolutely critical, but it is also around customer service and how we differentiate ourselves from our competitors in a very competitive marketplace. All of those programmes do not currently fit the definition of “apprenticeship” but they are still hugely important to our sector, to Virgin Atlantic and represent a huge investment in our people, including a number of 18-to-24-year-olds.

When we look at the apprenticeship levy and when we look at the Government’s focus on apprenticeships, we need to look at that broader definition of investing in people, in their learning and development and their continued learning and development throughout their careers, not just the “apprenticeship” definition.

Q62 Chair: Paul, in terms of the sectoral focus, could you outline a little more what Rolls-Royce would like to see?

Paul Harris: Certainly. We heartily backed the formation of the Aerospace Growth Partnership and the establishment of the Aerospace Technology Institute, and the key aspect of those things that were really important to us was that, particularly in the ATI’s case, a seven-year programme was laid out. That is significant because it is longer than a Government, and so we would like to take out the politics from the support for very long-term sectors. Some of our technologies may take a decade or more to get to market, and our products are long-term products. A consistent long-term support infrastructure gives us the confidence to invest, and we see that the UK has put in place many of the things that it needs to have a really effective innovation ecosystem in the aerospace sector in particular. We sit in the middle of a large ecosystem of university technology centres that feed technologies to us and into the high-value manufacturing catapult that then allow us to make follow-on investments in real industrial capacity and skills in the UK. That is a working chain, but it depends upon the support for early-stage technologies right at the beginning that may be decades from market. Therefore, when we saw a commitment to a seven-year programme, beyond the life of a Government, we saw that as a positive sign and we would like the Government to carry on doing that and recognise that this partnership between long-term industries and a long-term-thinking Government is what you need to get long-term investment.

Q63 Chair: Is that now at risk—that the Government is not going to carry on doing that? The Secretary of State came before us last week and said of the 11 sectoral strategies, including the Aerospace Growth Partnership, that, to put it bluntly, he does not want to

continue them because it looks like you are favouring one sector over another, when he wants to create the environment for the entire economy. Do you think that we need to continue the Aerospace Growth Partnership? Do you think the lack of an industrial strategy is a weakness?

Paul Harris: I just refer to global competition in aerospace. It is a global market, and other countries that are succeeding in aerospace do have sectoral strategies with long-term stability for the companies that they want to attract into their country to make those investments. We would say yes. We very much welcome the partnership that we have had with Government in working on these long-term strategies and we would very much like them to continue.

Q64 Chair: I do not want to put words in your mouth, so forgive me for this, but in the Government's Productivity Plan it is a weakness that it does not talk about an industrial strategic approach. Would you agree with that comment?

Paul Harris: We understand that the Government need to make savings and we understand that it is difficult to pick winners, but there are no sure-fire set solutions here. Each sector requires a different approach and you can only arrive at that specific approach through partnership between industry and Government, so, yes, we really do feel that partnership is important.

Q65 Michelle Thomson: My question is for Sian. I come from Edinburgh and you will probably be aware that with the devolution of APD the Scottish Government plan to cut it to 50% and thereafter remove it altogether, so I hope that results in positive outcomes for flights to and from Scotland.

That leads me on to my main point. The Productivity Plan has been described as the only part of the plan being in the title. In terms of specific and measurable outcomes, which, from a business background, you might expect to see, would you agree with the statement that it is possibly more of a framework than a plan? Would you agree that it would be helpful to have specific, measurable things in it and, if so, what would you like to see?

Sian Foster: In terms of the definition, whether it is a plan or a framework, what we need is a long-term vision for what the UK needs to deliver from a productivity point of view. In terms of specific deliverables, you mentioned air passenger duty and a 50% cut in Scotland. What we would like to see is the whole of the UK delivering that 50% cut in APD. We know from evidence that PwC has published that reducing APD would mean a huge benefit to businesses in terms of connectivity, in terms of people doing more business travel to agree more deals, in terms of the contribution to the whole of the UK economy. Therefore, what we would like to see is an ambition of a competitive tax regime for the whole of the UK in terms of a cut in APD.

Q66 Michelle Thomson: Of which APD is an example that is particularly meaningful to you. Moving on then, would you agree with that as a general consideration in terms of more specific narrowing and focus? We have touched other sectors earlier, but would you see that as a benefit, and do you regard the Productivity Plan as a framework or a definitive plan?

Paul Harris: We would see it as a good start along the way, but we do see that in order to have a proper plan you need people who are going to help execute that plan. We

think it is a sectoral plan and it is a joint plan between Government and industry in the sectors that the Government want to encourage.

Stephen Harris: I would agree with Paul. For me, it is almost like making a jigsaw. You have built the whole of the edge and now you are filling in the detail in the middle and it is how you fill in the detail. I could give you another example. For us, as an industry, the ECC—the Electronic Communications Code—was last written in 1984. I think most of us in this room were probably still at school at that point. It supports how sites are regulated for transmission and connectivity. We have been working with the Government over a long period to reform it, so we can update our infrastructure much more readily, so that is ready for the 21st century rather than the 20th century, but it is taking a very long while. For us, that is a very big part of the jigsaw puzzle. I think your description is right; it is a framework, but we need to start putting the pieces in that make this real and can deliver UK benefit.

Q67 Michelle Thomson: Following on from that, how much input have you had at the sectoral level—it might not necessarily have been yourselves—into the Productivity Plan?

Paul Harris: Obviously, we submitted our evidence to the inquiry. We were not involved in the generation of the plan, but we are fully committed to the Aerospace Growth Partnership in Rolls-Royce. We have also participated in the nuclear sector strategy and are interested in the maritime sector in the UK as well. We are prepared to engage and we are fully engaged with the AGP.

Q68 Chair: Following on from what Michelle said, you are three very important companies for Britain. In terms of Government trying to solve the productivity gap, it is important that industry input is provided. Nobody was asked what should be done by Government in order to be included in the Productivity Plan. Is that fair? Your companies were not asked, “What do you think this country needs to do to improve our productivity?”

Paul Harris: I am not aware we were asked.

Stephen Harris: I am not aware we were asked either.

Chair: Okay, thank you for that.

Q69 Richard Fuller: Just to give you a sense of the difficulty for Government and politicians at the moment, later today we have a very important debate about the changes to tax credits. Would any of you like to make the case for why we should take money from people on tax credits to support your industry?

Paul Harris: We believe that investment in long-term technology development in the UK is a great place for the UK Government to invest. You will have people from IUK later, and you have had economists from other organisations in your previous sessions who have described the multiplier effects that are achieved. We know that for technologies that are developed here in the UK it makes sense for us to make the follow-on investments in research and development and then in industrial capacity. They are wealth-creating investments that create the tax base that is required to pay for the public services that everybody needs.

Q70 Richard Fuller: Mr Harris, your company makes £1.3 billion a year in profits. Why can you not make that investment from your own profitability?

Paul Harris: The vast majority of that investment is from our own funds. There is a very small proportion that covers very long-term, far-from-market, high-risk investments that we choose to make in the UK. We choose to make other investments in Germany, others in the US, and others in Singapore. There is a very small proportion of that that is publicly funded and a very large proportion that is privately funded, and that is why it is a good place to invest.

Q71 Richard Fuller: I am sorry to concentrate on Rolls-Royce, but you were brave enough to pick up the challenge. The last Secretary of State was very keen on intervention across the board. Catapult centres were one initiative that was started. How has that helped or hindered your sector?

Paul Harris: The High Value Manufacturing Catapult is the one that Rolls-Royce in particular engages most with, and we see them as being extremely useful levers in bridging what we call the “valley of death” in technology. There is a large amount of science and good ideas around, but there is a big gap between there and bringing those things to market and them resulting in hard capital investments. We have found the Catapult centres in particular to be very useful in bridging that idea-to-execution gap, and we believe that there is huge potential for them to do more. I see you have Dick Elsy in later; we fully support his vision of increasing access to those centres for smaller companies. We are one of the largest customers of the Catapult centre with private money and a small amount of public money, so we really support the Catapult centres.

Q72 Richard Fuller: On that valley of death—the dip between innovation and full-scale growth for a company—in other evidence to the Committee we talked about weaknesses in UK growth capital. Is that the sort of area that we are talking about here? The willingness of private investors in the UK to come in and support innovation to the next stage. Have you found that in your supply chain? You have 1,400 UK companies in your supply chain. Has that been an issue that you often hear from them when you talk to them?

Paul Harris: Yes, there are some issues with access to capital and there are some issues around de-risking investments for smaller companies. Again, that is where the Catapult centres can be very useful. We have found that our investment in the Catapult centres to solve the really difficult problems that we bring to them creates teams of knowledgeable people who can also help small companies to solve their problems. We have observed things like factory modelling where, with Birmingham University and the MTC in Ansty, we have built an excellent capability for modelling a factory and understanding how a new piece of capital investment would improve the productivity and throughput. We know of small companies that have been able to propose investments to banks that have been de-risked by that modelling. Therefore, it may not just be about putting new capital in place; it might be thinking about what the innovation ecosystem could do to de-risk an investment for a small company that wants to invest.

Q73 Richard Fuller: Governments are appalling at trying to pick winners, and if we were to focus on picking winners we would put all our money in the City of London, because

we are pretty good at international finance, and I do not think anyone around this table thinks that is a particularly bold or good strategy. Would it not be better if the Government, rather than trying to pick winners, focused much more on how to encourage private sector investment in that middle area? I understand the point you are making that it is more than capital, but that is what you provide. What you are really looking for is private investors to come in to provide that capital, so you can see that the initiative you want someone in your supply chain to take can be de-risked. Is it not better to look at the functionality of capital markets across the board in the UK rather than in each sector?

Paul Harris: Our view would be that in order to have a really informed knowledge of how to make the interventions you do need sectoral knowledge. You need to understand where that supply chain competes in the global markets that it is in and what it needs to do to be competitive and partner with industry to choose where to make those investments. We do not think the sector-free, agnostic approach would be as effective as an approach that engages with industry and engages with sectors to really understand how the UK can differentiate itself in the global competition for these investments.

Q74 Richard Fuller: Finally, just to be clear, each of the three of you would say to Government, “Pick a sector that you think is a winner, invest behind that and, by the way, our sector is that sector”; is that right?

Sian Foster: Rolls-Royce is a major supplier of ours. We have invested a huge amount of money in Rolls-Royce engines over the last few years, and so we benefit from that innovation—\$5 billion worth of 787s with Rolls-Royce engines totalling 30% fuel savings and a great customer experience in our industry. That is hugely important to us, but we also want to look at how the UK invests in trade partnerships, in exports, in making itself competitive with its peers around Europe and internationally.

Going back to your earlier question around taxation and “Why us?”, we would argue that a cut in air passenger duty would be more than made up for in spend elsewhere in the economy, whether that is through additional business travel and additional business deals, or whether it is through additional inbound tourism, or more trade. All of those things collectively would contribute towards the Government more than making its money back, based on a cut in air passenger duty. It is not an either/or. We are looking at what can make the UK competitive.

Q75 Chris White: If I can speak to Sian first, you mentioned that your company had been running an apprenticeship programme since 1992. Is this the first year you have not run that programme?

Sian Foster: No, I think it was three years ago.

Q76 Chris White: Presumably, you work with local colleges to do that. Is turning that supply off and on again a difficult experience?

Sian Foster: Without going into too much of the detail, we have a good relationship with local colleges, which are a key part of providing that apprenticeship programme. What is really important is that those apprenticeship schemes are meaningful and that there are jobs at the end of that apprenticeship programme. We need to make sure that we are training people with the right skills for the right opportunities within our

organisation, and we could not guarantee those so therefore it made sense to put the apprenticeship programme on hold.

Q77 Chris White: Is there a timeframe when you might be taking on apprenticeships again?

Sian Foster: It is up for review. There is not a definite date, but it is something that we will look at again in the future.

Q78 Chris White: In terms of the other panel members, how do you envision apprenticeships, and have you made submissions in terms of the level?

Paul Harris: Rolls-Royce has had an apprenticeship programme for around 100 years. We have about 1,000 apprentices globally and about 650 at any one time in the UK, so we are great supporters of the principle of apprenticeships. I, myself, was a graduate apprentice. Our apprentices are highly valued members of our company. Around half will go on to do a first degree within the first 10 years of leaving their apprentice scheme, and something like 20% of our senior managers started their careers at Rolls-Royce as apprentices, so we really believe in apprenticeships. We have carried on through difficult times, and it has been difficult sometimes to place all the apprentices but we have kept going.

Additionally, we think that the benefit of apprenticeships should be spread further into the supply chain, so we have our own training academy where we also train apprentices for our supply chain and look to place those as well.

We are great supporters of apprenticeships. We have made a submission regarding the apprentice levy. We are looking forward to engaging to design that to be something that really can work. We do not feel that we have enough detail quite yet to be fully informed as to how it might work. We are extremely keen to make sure that the quality of apprenticeships is not degraded by any caps on what can be spent on them, and we are keen to see that investments made by a sector are focused on improvements to that sector. We are big supporters of it, we are keen to find a way to make it work and, once it works, we would very much like it to be stable for a long time to give us clarity as to how it is going to work and that we are able to plan for it.

Stephen Harris: EE, unlike Rolls-Royce, is only three years old and not 100 years old and we have had an apprentice scheme for the last two years. To give you some statistics around it we are just coming up to 1,000 apprentices in two years and we have 12,000 jobs here in the UK. We continue to plan to have 300 new apprentices every single year, and that is compared and contrasted with 30 graduates, so it is a scheme we are phenomenally behind. It costs us in excess of £3 million a year of training and recruitment of those new apprentices into our business, and in excess of 80% move on to take a long-term role in our organisation. It has been critical as we have also been running a programme of on-shoring a lot of our call centre agents here in the UK and we are moving to all of our call operations being based here in the UK. The apprentices have been absolutely core and centre to that programme, so it is very important, a large investment for us and, like Rolls-Royce, it has benefited the overall workforce. Our concern—and we do not have sufficient detail either yet—is the size of the levy, because that could impede our funds to invest in our own apprenticeship programme. It is a sizeable investment and

will continue to grow, but we only have so much funds, obviously, for training and investment, so that is our headline concern.

Chris White: Thank you. That is a very good story, by the way.

Sian Foster: Whilst our engineering apprenticeship programme is on hold, we are continuing to recruit and we are continuing to invest in the development of our new recruits. A considerable proportion of them are aged 18 to 24. There is a lot of training in safety and security and customer service, which is the key differentiator within our sector and for Virgin Atlantic specifically. Therefore, I think we need to look at the broader definition of what investment in young people is, not just the apprenticeship, in terms of skills and on-the-job training, which is something that we invest in as a matter of course to a considerably higher level than the apprenticeship levy requires. We have to make sure there are specific solutions that support that and do not undermine all the great work that is already happening.

Q79 Chair: Sian, can I pick up on what you have just said? In the context of your written statement to the Committee you say your “budgeted spend on training and development far exceeds the proposed apprenticeship levy”. Is the budgeted spend your actual spend?

Sian Foster: I believe so, yes.

Q80 Chair: How do you know what you will pay, given that the level of detail is very sketchy?

Sian Foster: We have done a calculation based on what was included in the Productivity Plan and subsequent speeches and announcements. We can come back with a more specific note. I prefer not to go into those details in this forum, if that is okay, but we are happy to come back with a clearer worked-out example of exactly how many people are in training, exactly what we spend on training and what that looks like across our organisation.

Q81 Chair: That would be very helpful. To all of you, do you think the proposed apprenticeship levy will help improve the productivity of our country and our workforce?

Sian Foster: Speaking on behalf of my own organisation, I worry that it might undermine inadvertently how we run our training programmes and what we invest in.

Paul Harris: We would like to see more detail before we are able to reply. We think more high-quality apprenticeships would improve productivity. We do not know yet whether the apprenticeship levy will achieve that.

Stephen Harris: I would say exactly the same. There is not sufficient detail, as you are well aware, so we reserve judgement at this time, but I think there are great examples of industry driving and supporting apprenticeship schemes. Should we not encourage more of industry doing it themselves rather than a larger body trying to control it?

Q82 Peter Kyle: Sian, if I could ask a couple of questions, the conversation and your testimony about the air passenger duty has been fascinating. I am quite clear about how the air passenger duty impacts Virgin Atlantic's profitability. I am not quite so clear on productivity. Could you clarify for me?

Sian Foster: I am happy to re-submit the PwC report on air passenger duty, which goes into this in a great deal of detail and was just updated earlier this year. IATA, the trade organisation that represents international aviation, calculated that £5.27 is the average profit made by an airline from a passenger. The Government makes £71 per passenger from air passenger duty or double that if that passenger is travelling in premium economy or upper class in Virgin Atlantic's example, particularly long haul. It is a huge tax burden on passengers. It is a tax on exports. We do £1 billion of ticket sales overseas each year. That is a UK export and each of those passengers is paying air passenger duty. It is another thing that makes the UK seen as an expensive place to do business, an expensive place to travel to when it is double the rate of air passenger duty—

Q83 Peter Kyle: However, you are still a profitable company, even though it has been up and down in recent years. What is it you are not investing inwardly, as a company, do you believe, because of air passenger duty?

Sian Foster: It is difficult to draw a direct correlation with what we are not specifically, but I think it is around looking at the industry as a whole and looking at aviation's competitiveness as a whole. We know that elasticity of demand means that if you have a lower price then more people travel, and air passenger duty is a—

Q84 Peter Kyle: You are a senior manager within Virgin, but you cannot name the impact internally in Virgin.

Sian Foster: We are in a highly competitive industry, so we have to compete price-wise with other airlines operating on the same routes, on the same networks. It is difficult to answer that specifically.

Q85 Peter Kyle: When it comes to productivity for our nation, do you think that air passenger duty or airport expansion in the South-East would have the biggest impact on productivity?

Sian Foster: Air passenger duty is something that could be delivered very quickly. It could be done within this Parliament and we could have a tax regime that is competitive, so that could be done in the near-term. In the longer term, Virgin Atlantic has been clear that a third runway at Heathrow is the best outcome for UK plc. There is a lot more work that needs to be done in terms of the detail of how that is delivered, how much it costs, because of course passengers end up picking up the bill for that new capacity; it is not paid for by Government, so we need to make sure it is affordable; we need to make sure that it enhances competition and gives other airlines an opportunity to grow and to offer new routes and new choice to consumers; we need to make sure the environmental considerations are properly addressed. There is so much more work that needs to be done before a third runway at Heathrow is deliverable.

Q86 Chair: Can I just follow that up? At party conference, the Chancellor announced the establishment of the National Infrastructure Commission and, Stephen, you have mentioned something about a long-term vision that is important to help. Do you think the establishment of this new body will help improve investment for the long term and also improve the productivity of our country with regard to energy, aviation, the whole range of different things, including digital?

Stephen Harris: It is a good question; let me answer in a couple of ways. Directly, “I hope so” is probably my first answer. When EE was first launching or planning to launch 4G, we got Capital Economics to undertake a study. They said that gross domestic product would increase by 0.7% just by this country fully rolling out the technology of 4G. We were the 40th country in the world to launch 4G, so some way behind some of our other global partners. I am very proud to say we are now the leading country in Europe and probably only South Korea beats us on a few metrics.

Q87 Chair: Should we try to beat South Korea? Is that important to productivity?

Stephen Harris: In some ways we do. Versus their fixed infrastructure, download speeds on EE’s network are now faster than South Korea’s fixed network, so we can beat what is held up as one of the global leaders today. Let me give you a few examples of how telecoms and digital infrastructure are driving productivity, and I will jump around a few industries. You could take the London Air Ambulance: their dispatch rates have reduced by two minutes because of an app they are using on 4G on the EE network today, so you are saving lives. You have a company like the RAC now managing its fleet through what is called the internet of things or machine-to-machine technology. It knows where its fleets are all over the country constantly. It can get to rescue people far quicker. You have companies like, in construction, Jackson Civil Engineering, which today can go to a new site and have a mobile Wi-Fi solution running on its site the day it turns up on site. All of these things, in themselves, will drive changes in industry, but even my window cleaner can now use his mobile phone to give a quote to a house three miles down the road rather than make an appointment three days later to go and say, “Sorry, Mrs Harris, it is going to be £20 a month.” You can see, all the way across the chain, technology is driving efficiency, new entrants to market, and different ways of working, just from a single technology. The UK absolutely will derive benefit.

Q88 Chair: Sian, in terms of your particular business and industry, do you think the National Infrastructure Commission will help, and do you think it should look at things like taxation to provide that level playing field or level runway with our competitors?

Sian Foster: Anything that looks at the UK’s competitiveness is a good thing. As I understand it, the National Infrastructure Plan will not include runway capacity in the south-east of England nor, I believe, does it include airspace infrastructure. As well as physical infrastructure on the ground, we also have infrastructure in the air that needs to be looked at from a system-wide perspective to see what efficiencies can be delivered, look at what environmental benefits can be delivered and how we can best use that as a whole. So looking at aviation infrastructure would probably be a very useful thing for it to consider, and then for it to look also at competitiveness and what can be done to support that.

Q89 Chair: Paul, can I ask you to lead on your comments regarding supply chain? One of the ways in which we can improve productivity is to make sure we have greater coordination and alignment all the way through from primes down the supply chain. Does the Productivity Plan help that?

Paul Harris: There is a focus in the plan on individual company productivity, and we do think that it would be an improvement to the plan for it to expand to the competitiveness of whole supply chains. From our experience of achieving exports, you need a system integrator that has access to global markets and that can pull through huge value from the supply chain in the economy in which it operates. We think that that view of the world, recognising that a competitive supply chain makes people with a global access more competitive against global competitors is needed to really round out some of the aspects of the Productivity Plan.

Q90 Chair: Let me press you. Do you think the plan helps address that properly? What else should have been included, or is it sufficient and fit for purpose, and what is included in the plan will improve the supply chain across different sectors of our country?

Paul Harris: I am sorry to come back to the sectoral argument again, but I do think that there are sectoral aspects. Each supply chain is different. There are sectoral aspects that need to be added to the Productivity Plan and they should include how supply chains can be developed to make globally competitive companies that are able to export, so we do think something needs to be added.

Q91 Chair: I have been to Derby to see Rolls-Royce and I have been given a presentation on the Sharing in Growth initiative, which is, personally, I think, a fantastic initiative in order to help improve the alignment of the supply chain. What lessons could Government have learned from that? Could that have been included more, in terms of a case study of what can happen with a prime contractor and its supply chain, because I think that initiative is good? Could you talk a little bit about that?

Paul Harris: Certainly. For the benefit of the other members of the panel, Sharing in Growth is a rigorous examination of a company. The company comes forward and commits its own resources to be matched by public funding to go through a rigorous examination of its strategy, its operations, its access to markets and its growth opportunities. The leadership of the company take that journey, it is really intensive and they come out the other end with a plan for improvement that they execute, and we are seeing great results from that. We are seeing companies that feel they can close the 20% to 25% competitiveness gap that they have against overseas competitors, and it is really transforming companies that step up and self-select to say, “No, I want to be globally competitive and I am going to commit the resources to do that”. At the moment, Sharing in Growth covers around 40 companies and we are very pleased to hear that that is due to be extended to cover about 68 companies. It is a very intensive programme, so in order to fix more companies either you need to spend a lot on these very intensive things or find maybe less intensive other interventions that could help more companies more widely.

Q92 Chair: Has the Government asked to see more information about Sharing in Growth and see how it could possibly be translated into other industries and other sectors?

Paul Harris: We have great engagement from the Department for Business, Innovation and Skills in the programme, so yes, I think they are considering what else might be done to perhaps expand that. I think there have been some discussions around a cross-sectoral approach to that.

Q93 Chair: May I ask all of you, as a final question, what the Productivity Plan is lacking. If you could include one or two things that would make a difference to your business, to your sector and to the economy as a whole, what would you include in the Government's Productivity Plan that is currently not there? Stephen, may I start with you?

Stephen Harris: Oh, there is a question. For us, it is the direct correlation, as I mentioned earlier, to both the ECC and planning reform as well, because it is not there yet and that will make the biggest single difference to our industry.

Paul Harris: For us, it is the partnership between strategic sectors and industries and Government, and a rigorous eye on global competitiveness for the UK.

Sian Foster: It would be a clear ambition to have a highly competitive UK aviation sector. It has been shown that growth in airlines—having a successful aviation sector—means a growth in GDP and a growth in productivity for the UK. Setting a clear ambition around UK aviation and UK connectivity being important to UK productivity, and then putting in place steps towards that would be hugely important.

Chair: Can I speak on behalf of the Committee and say I have found this incredibly helpful to our inquiry? Thank you for your time and for your input, we are really grateful. Thank you.

Examination of Witnesses

Witnesses: **Peter Horrocks**, Vice-Chancellor, The Open University, **Mike Dawe**, Group Board Member, City and Guilds, **Harvey Young**, Chairman, National Consortium of Colleges and Providers, and **Professor Dave Phoenix OBE**, Chair, Million+ and Vice-Chancellor, London South Bank University, gave evidence.

Q94 Chair: Good morning, gentlemen. Welcome to our Committee. Could I begin by asking you to introduce yourselves and say where you are from?

Peter Horrocks: Peter Horrocks. I am Vice-Chancellor of the Open University.

Mike Dawe: I am Mike Dawe, Managing Director of City and Guilds International and a Group Board member.

Harvey Young: I am Harvey Young. I am the Chairman of the National Consortium of Colleges and Providers.

Professor Phoenix: Dave Phoenix. I am Vice-Chancellor of London South Bank University, but also Chair of Million+, representing around 20 modern universities.

Q95 Chair: We on the Committee are very keen to add value and we want the Government to add value as well. Do you think the Government's Productivity Plan adds value and will achieve an improvement in productivity?

Peter Horrocks: It is clearly important to have a focus on productivity with the new Government putting forward a series of proposals and, in relation to the area that I am sure this group of witnesses will be most interested in, the focus on a highly skilled workforce absolutely needs to be central. We heard that from the previous witnesses from business. The question for us is whether that focus is appropriately achieved and, in particular, the references that we just heard, the importance of quality in relation to apprenticeships, high-level skills, whether there is sufficient focus on that and whether there is sufficient support for the modes of study that can most achieve rapid improvements in productivity.

The Open University would like to draw attention to the significant fall in part-time study in recent years, and the importance of part-time study as being a really effective and rapid way of being able to influence productivity in the workplace amongst employees who are focused on improving themselves, the hardworking people who need support through policy to be able to influence immediate improvements in productivity, and that is where we think there is a particular lack within the plan as presented.

Mike Dawe: Answer: yes, we do. A few things to add: while having apprenticeships as the epicentre of building a skills policy is good, it is not enough in its own right. In particular, we are interested in careers advice and guidance, broadening opportunities for vocational starts to various other audiences. Something around adult learning as well—so improving the chances for people in adult learning to move their careers forward, particularly good examples are in leadership and management.

Most significantly, though, it is the long-term stability of policy. We did some research about a year ago now when we were looking at the impact of policy changes on our company and our industry. What we were looking for was the difference between good policy and bad policy, but in the end the most important thing that we came up with was the importance of longevity and the ability to be able to follow policy over a period of time. With those additions, we would say a pretty firm “yes”, this is a strong addition to the productivity debate.

Harvey Young: I would echo what Mike said. From our point of view, the Productivity Plan fails to mention how crucial basic skills are to increasing productivity and this is despite the fact that English and Maths is a stated Government priority. Supporting adults with their literacy and numeracy is absolutely critical to improving productivity. If I can give you, by way of context, an example, one of our members was recently contacted by a large distribution company that was suffering from a downturn in business and profitability, high staff turnover and low staff morale. They worked out that this was because the staff were lacking in literacy and numeracy skills, not just in the warehouse and the distribution side of the business where they suspected it, but right throughout their offices as well, which was a bit of a surprise to them. We went into the business and delivered a 12-week programme in the workplace around the needs of the business, which has had a transformative effect. They have seen real improvements in efficiency and productivity, so much so that they have asked us to continue with an ongoing programme of support for their staff.

Right across the country, businesses are being held back by poor basic skills. I know the CBI did some research, which said that 50%-plus of employees currently demonstrate a noticeable weakness in literacy and numeracy. To try to put that into context, crudely—I appreciate constituency sizes vary—if I divide that number by the number of constituencies there are, it means that each member of the Committee has 23,000 working adults in his or her constituency who require English and Maths support. We really feel that the Productivity Plan has to reflect the importance of this.

Professor Phoenix: I would echo a range of things colleagues have said. The Productivity Plan is an excellent start. It has been long overdue that a similar plan or something along this vein has been assembled. I would make two points, though. The first is that, from an educational perspective, it falls into the trap of compartmentalising education into different categories, which reflects some of the comments that have come earlier, rather than looking at how education can be joined up in a more holistic manner and recognising the contributions different parts make.

The second point is, if I was giving feedback if it was a student essay, I would say there could be more research done to understand the context of what already exists. For example, there is a great deal of focus on new and exciting things that could be done, but there is a great deal of good activity in the sector in the colleges and universities already. For example, in sponsored education, there are currently around 10% of students who are already sponsored; about 100,000, or 5%, sponsored by business on existing programmes of study. That market could be significantly enhanced. It does not necessarily just need lots of new additions; we need to invest also in some of the strands that exist.

It is an excellent start and a good step forward.

Q96 Chair: Peter, I was interested in the comments that you made to us in your opening remarks about modes of study—and I am paraphrasing here—that can best achieve the most optimum improvements in productivity. Dave, I may be at risk of compartmentalising here, but if you have a pound of public money, in order to get the biggest bang for your buck in improving productivity, in your opinion, where should you put that pound?

Professor Phoenix: That is a good question. If I was focusing specifically on productivity, one of the key areas to look at would be part-time. We know that a vast majority of the people we need for future work are already in work, so a lot of the questions are around not just bringing new people into the marketplace but how we are re-skilling people in the marketplace for new jobs that will exist in the future. If you look at that category of students, numbers generally have dropped, and that reflects two things. First, for those who wish to enter the sector on part-time study, maybe who are not currently in work or do not have access to funds, the funding regime is not as supportive as for full-time. You cannot, for example, access the maintenance loans and other support that full-time students can access, and the repayment regime for part-time students is more severe than for full-time students; in many cases, you start paying back, if you are in work, before you have even completed the course. There is a need to look at how you can support people using the grant funding.

The other aspect of part-time funding, as I said, is if you look at London South Bank, for example, about one-third of our students are sponsored. Of that number, around

about half—about 3,500—are paid for by employers or sponsors. One of the challenges we often have is trying to encourage SMEs to engage, because they do not have the scale of workforce and the resource to necessarily free up that capacity. Interestingly, of that 3,500 students who are doing part-time study with us, there are about 1,000 employers who support those and the vast majority are SMEs with one or two students. What they tell me would make the biggest difference to them would be getting, for example, some kind of credit, some kind of compensation or some kind of support to help them free up their staff for that training. So looking at the support to get people into part-time and looking at support for SMEs and micro businesses to release staff to part-time study would be helpful.

Q97 Chair: This is a very important point. The Committee took evidence last week from a couple of entrepreneurs, and we probed on how relevant the Productivity Plan was to them. They were saying often it was a day-to-day thing in order to keep your head above the water. What is the answer to that issue to help improve productivity? Can I just push you further, if I may, Dave? Some sort of voucher or tax credit scheme in order to free up, but how would that work in practice if you are running a business with, say, 10 employees? You need everybody with all hands to the pump. How does that help?

Professor Phoenix: It depends how small you go with the business. There are challenges from the business side. I was speaking to the CEO of Crofton Design last week. That business has about 50 people, so it is not a micro business but it is still reasonably small. They send and have sent their staff to us on a part-time basis for a number of years. What they told me was the reason they do that is because, within engineering, they find that those students they are sending to us who are being educated during the period of work tend to stay with them for around seven to eight years, whereas when they have recruited people directly, post-degree, who are already qualified, they have tended to stay for about two years. Although they are quite a small company, they have found that it is worth their investment in training to retain staff. Interestingly, if you go and speak to the students from that company, what they are saying is, for them, they get a better return because they are already in employment, so while they are studying they are getting a salary, which means that their lifetime gain is better. In addition, most of those are getting Chartered Engineer status by the time they are 24 or 25. If they do a degree first, they are not getting Chartered Engineer status until around 28.

This area of sponsored education is really important. It is under-appreciated, not just by Government but within the UK and there is more we can do within the university sector to help promote it. I think it needs more support from Government to also help promote it and to work with the SMEs and the micro businesses to find out how some form of tax credit or support system could function. Of the 100,000 students that I said were currently studying on sponsored education, the interesting thing is the vast majority of that 100,000 come through the Open University or eight modern universities, so you have a lot more capacity within the sector to expand that market.

Q98 Chair: Thank you for that. Harvey, may I return to that question of, if you had a pound, where you would spend it?

Harvey Young: I am absolutely going to spend it on basic skills, and I will explain why. The Productivity Plan is obviously about building something special for this country,

and it is about taking us to a point in 2030 where we are world leaders. If you are going to build anything, the most important thing is to get the foundations right, and basic skills are the skills that underpin absolutely everything else that follows. If we do not get that right, we might as well be building on quicksand. In 2013, the OECD reported that we are currently ranked, out of the 24 most developed nations, 21st for numeracy and 22nd for literacy. This cannot be an acceptable state of affairs for our country and it certainly is not going to help us reach the productivity targets we have. As a very quick win, we should be looking to task ourselves to at least get into the top third of that. That may seem like an ambitious target, but it is no more ambitious than the target the Government have set for themselves in the Productivity Plan.

Mike Dawe: It is split between longer-term and shorter-term investment, so the answer probably changes according to your exact policy goals, but we are seeing that adult learning can get some pretty immediate gains. You have people who already understand the world of work, already understand their industry and are well connected. Keeping them up to date is an extremely good way of using cash, but we are also seeing a very good response to training, and an understanding that improving leadership and management cadre in our companies has a pretty immediate impact on productivity or the things that look a lot like productivity—the measures are quite hard to get underneath.

Of course, in the longer term, you do need to be employing or taking on and engaging the next generation. Apprenticeships are great. They do include work on the basic skills, but alongside that they have more technical input. Apprenticeships have a double effect. They are not only looking after the long-term productivity of our various industries but they are also dealing with youth unemployment, which is pretty poor at the moment. Going back to what I was saying, though, you cannot just spend money on apprenticeships. Apprenticeships are only going to get us a few percentage points improvement in the areas that we need of productivity and unemployment. We do need to broaden out access to the same variety of training and education so it is accessible in different ways, preferably also looking at younger people even than those who access apprenticeships, so people at 14 and 15 having access to more vocational content as a part of their schooling, so they feel more connected to the world of work and are more able to make choices when it comes time to decide which careers they want.

I am afraid it is split and probably, over time, the pound would have to be spent proportionately according to the policy goal.

Peter Horrocks: I would like to take it into part-time but also to distance-learning. However, I would say that that investment does not need to be a very costly one, because by using the loan book and removing some of the discriminations against certain modes of study that currently exist, by making sure that part-timers, in particular, are able to be supported we know that they start paying back sooner. They are already earning, so they are often above the earnings threshold in relation to paying back their student loans. We understand that BIS officials have recently calculated the so-called “RAB charge”—the repayment rate in relation to a comparison between full-time and part-time—and that part-timers come out as being a more cost-effective bet in terms of the use of the student loan book. That money will get paid back, so making loans available to people who have done previous degrees is a particularly cost-effective and rapid way of being able to support people to do shorter courses.

To the point about SMEs that cannot release people for very long, if institutional credits could be supported by the student loan book, by modules and courses provided by high-quality HE providers, it would provide the very rapid skills intervention, for instance, in relation to the digital economy that we heard about from EE. As Dave said, making maintenance loans available and then removing discriminations, which are currently in the consultation, around postgraduate loans, where the over-29s and distance-learners would not be able to access those loans. There is a series of discriminations against certain forms of study, which also disproportionately affects women, disabled students, and people from disadvantaged backgrounds, who are more inclined to come forward for part-time study. By removing those discriminations there can be some highly cost-effective and very rapid interventions in favour of productivity.

Q99 Peter Kyle: I want to talk in a bit more detail about the skills agenda, but I would also like to, after such a good introductory session, ask a couple of follow-up questions. Mike, you talked about the importance of long-term stability in policymaking. Are there any policies in recent years or further back that have been scrapped because of the need for innovations or new policies that you feel should still be in existence?

Mike Dawe: Yes. I have been working in City and Guilds for 18 years, so I have seen many things come and go and we were very supportive of a qualifications framework, which was highly unitised. It allowed people to access it in various ways. It was regulated slightly oddly but it worked. The changes in regulations have meant that many of the investments we have made over the last five years have either been scrapped or are now not expected to meet their return. I suppose one of the most dramatic ones I can remember of the relatively recent past was diplomas. It was a good idea in concept, but there were some problems with execution. Rather than deal with those they were entirely scrapped, and we had a very large investment in diplomas that we wholly lost, it was written off. We are a relatively small company in the part of the economy that we are talking about here, but we are now a smaller company than we could have been if that had carried on. We are more wary of investment than we might have been if we had seen that occur and if you multiply that across the entire sector, you do get a picture of an industry that perhaps has suffered from reverses and changes.

I have to say it is in contrast to my own particular area. I look after our business overseas, so I have a more academic view of the UK environment and we use the learning from the UK. The quality of debate in the UK around education and learning is simply superb and we manage to export that, if not sometimes the learning itself—the training programmes themselves—and other countries are making use of our lessons. They are putting in place very long-term investment plans. We work with Saudi Arabia, South Africa, China and India very significantly and you would recognise some of the policies that they are implementing, and there is every expectation that they will be able to create an environment that people will then invest into for 10 or 20 years. That is what we lack.

Q100 Peter Kyle: That is incredibly helpful. In fact, you have made a very powerful case about the impact of fast policy turnover in terms of productivity directly related to the Productivity Plan. Both you and Harvey, I believe, mentioned the need for higher-level apprenticeships. When we had the Secretary of State here last week giving evidence, he

talked quite a lot about his target of reaching three million apprenticeships, but he refused to talk about a target or even an aspiration for the number of higher-level apprenticeships. All of you are invited to answer this. Harvey, I know you referenced the need for higher-level apprenticeships, so you might want to kick off.

Harvey Young: Actually, it was not me.

Peter Kyle: Was it not? Sorry. It was you; okay, go ahead.

Professor Phoenix: What it comes back to as well is a lot of work that modern universities are doing around sponsored education working with business. They are already engaged quite heavily in a range of trailblazer programmes looking at degree-level apprenticeships. There are two points to be made here. The first is—and inroads are starting to be made on this—the interface with what we call Level 3, which is the A-Level range, and “Level 4”, which is first-year degree, is reasonably arbitrary, to be honest. A lot of it has been developed over years based on the way the education system was set up. Look at the regulatory framework around that, so that institutions can be more creative around delivery of courses that combine Level 3, 4 and 5, which needs to be taken forward to try to enable us to deliver these qualifications more effectively.

Q101 Peter Kyle: Would you put a number on the number of Level 3 and 4 apprenticeships we should be aspiring to as a nation?

Professor Phoenix: I think the question to ask there is to go out and talk to different companies and see what the demand is, because with all these qualifications there has to be a demand-led element; it should not all be pushed. There are sections currently of the plans that miss key areas of industry. For example, the creative industry, which is one of our fastest growing areas, gets very little coverage at all. Now, 70% of the workforce there has come through modern universities and a lot of that has been on part-time study and traditional modes of study. As Peter said earlier, many of those people have come through, some on full-time degrees, but many on a range of qualifications right the way up through to postgraduate, but they may often select to do perhaps a HNC first. They do a year’s qualification and then they come back and top that up to a HND, and then they come back and top that up to a degree and then a PG. This is the point I was making earlier about not trying to be too compartmentalist, but to try to look more holistically at the progression routes and the horizontal as well as vertical requirements. When we do that, we need to try to make sure that we are working with industry, with employers and professions to ask them and provide them what they need, but it does not necessarily always have to be badged just as an apprenticeship. The key thing is not to have volume measures, but to have measures of quality.

Peter Horrocks: I would suggest it is not about having a target for particular levels, but going with what the Government have said is the basis of the apprenticeship scheme, which is that it is employer-determined. We heard earlier on from Mr Harris from Rolls-Royce saying that there should not be a cap on how much should be spent on each apprenticeship. I think the role of Government is to ensure that there is the right level of quality, to make sure there are no abuses in relation to the new apprenticeship scheme and then to go with what employers are looking for. The evidence shows that employers, especially in the most rapidly advancing and potentially productive parts of the economy, are looking for higher-level skills and I would suggest there should not be any impediment

on that through caps; then the market and what the skills requirements are will determine the level to which the apprenticeships are offered.

Q102 Peter Kyle: In recent years, we have been going in the wrong direction with quality. We have been doing far too many very low-quality apprenticeships and the number of high-level ones has been falling.

Peter Horrocks: Yes, and there are two things about quality. Clearly there needs to be quality in relation to the basic skills that Harvey has been talking about. We must be clear about what we are saying. It is about quality in relation to making sure that standards are achieved at whatever level we are talking about, and then making sure that what employers need and what the workforce requires is the basis of how the money flows and to make sure that the providers, whether in formal education or through other providers, are providing what is needed.

Mike Dawe: Just to support the point, using the word “quality”, I think it is more appropriate to use it in terms of whether or not the apprenticeship, at whatever level, meets the standard. My only addition to it would be to say that already we have a target of 3 million apprenticeships. There is a danger that people chase those numbers and subvert quality. The danger is already real enough without imposing further targets around it. So, it is about quality in terms of meeting the standards, but also I would add on top of that it is probably a regulator or Government’s job to make sure that, to use a US term, those apprenticeships and qualifications are portable and stackable—in other words, that people can get an apprenticeship here and a job somewhere else and that they can progress.

Q103 Peter Kyle: The targets are just one tool for driving up numbers in something.

Mike Dawe: Absolutely. It is a good tool.

Q104 Peter Kyle: Exactly. My point is it is a good tool. If you are not going to set a target and you four are not willing to put a number on how many you want to—

Harvey Young: The target is in the wrong place, in my opinion. The target should not be so much about starts; it should be about what we are trying to achieve at the end. Everyone is focused on how many starts we put on in apprenticeships, but nobody is looking at what the success rates of the apprenticeship programme are. As we currently stand, one-third of all starts are not successfully completed, and that is a quality issue. It is not so much about what level we are at. There is a big deal about we have to be prescriptive about what employers want and we have to make sure we are delivering good programmes at whatever level they are required, but we have to make sure we are focused on what our endgame is.

Q105 Peter Kyle: I think one thing we all agree on is we are not going to get numbers for Level 3 and 4 apprenticeships going up by accident. What do you think Government can do, concisely, to drive numbers up then, if they are not going to use a target?

Harvey Young: In the higher-level apprenticeships it is going to be driven by employers. As Dave said earlier, the trailblazer programme is all about employers coming to the table and saying, “This is what we need for our industry.” That is the only thing that will drive it up—demand.

Professor Phoenix: Just to emphasise as well that apprenticeships done properly and with high quality are a good tool for us in terms of productivity, but they are not the only tool. In terms of higher education frameworks and other frameworks we have, for many employers, especially small ones that maybe do not have the capacity to oversee the work-based elements, working with university and college providers to design tailored programmes in existing frameworks helps assure the quality, provides access to qualifications that are portable and builds in employer needs and work-based experience. I think we need to broaden the focus in terms of the range of qualifications.

Q106 Peter Kyle: I have one specific question to Peter, about adult education. I know that the Open University has had a huge impact on throwing open higher education to mature students over the years. I know that numbers of mature students going to university across the board have been plummeting in recent years. Another trend in recent times has been the number of adults taking apprenticeships has been going up and it is an unknown fact, broadly, that now more than 50% of apprentices are over 24; they are not going to young people. I wonder if you could just give a little commentary about the impact of policy in recent years on access to education for mature students, adults and the role that apprenticeships are playing, whether it is positive or negative, in that.

Peter Horrocks: Thinking about it from a higher education point of view first, before coming to apprenticeships, clearly one of the things that has been a success and maybe one that people were surprised at was that there was not a significant deterioration in the number of younger people who are coming to higher education. However, for older people, they appear to have been put off by two things. One is the change in the rules, which meant that loans are not available for those who have already studied for a degree. That is something in terms of the re-skilling and the productivity agenda that, if that could be changed more comprehensively than has been the case so far, would mean lots more people would be able to get that re-skilling.

The second change was the increase in tuition fees and that put older people off, because they appear to be significantly more debt-averse. In terms of cost-effective ways of addressing that, one is being able to use the loan book more flexibly in the ways that I have suggested in relation to ELQ, in relation to shorter modules, in relation to postgraduate loans and in relation to maintenance loans. That is a comprehensive set of cost-effective measures to be able to address the significant fall, which is a 55% fall in the number of people starting part-time study between 2010-11 and now. That is the thing that most needs to be addressed.

In relation to the apprenticeship agenda, there are some extra older students and learners who are taking apprenticeships. Making sure that the apprenticeship levy is directed in the way that we have been talking about to ensure that employers can direct it towards quality and, where they want to, towards higher-level qualifications will help replace some of the lost employer sponsorship that Dave Phoenix from Million+ has been talking about.

Q107 Chair: I am very conscious to get other Members in, but I would ask you, if you could, to just answer this question on apprenticeships briefly. The Government have prioritised apprenticeships, but it has been clear from the panel that apprenticeships are not

the full answer. What could the Government have done that would have improved productivity and be included in the Productivity Plan that could have achieved better outcomes rather than just the sole fixation on apprenticeships ?

Peter Horrocks: By having the range of funding policies to support the variety of modes that we are discussing. We now have a focus on conventional study largely for 18-year-olds through HE and a funding system that is focused on that and then a particular target around apprenticeships. There are many other requirements, especially for adult learners, for mature learners and for part-time students and the range of funding policies needs to be more comprehensive and more joined-up to provide pathways between the different modes of study that we are talking about. In particular, the focus needs to be making sure that the funding regime through the student loan book is available to those students who are not the conventional students of university, but the people who are already in the workplace whose improvement in their skills will immediately feed through into improved productivity.

Chair: I am keen to move on, but if you want to come back to that, please do so.

Q108 Richard Fuller: In the Productivity Plan we talk about the importance of exports and, in particular, we say we need them in the service sector and to developing countries. You are in the service sector. What do you think you can contribute to exports and how can the Government make it easier for you to do so?

Mike Dawe: There are quite a few UK companies investing overseas. They are trying to find skilled labour overseas and, in fact, we work with several organisations, from Tesco to BAE Systems, as they try to build up their skilled labour in other parts of the world. The way in which we design our qualifications today is centred on the UK, and I do not think gives enough weight to the importance of those qualifications overseas. I would broaden that out beyond just companies trying to invest overseas and to find markets overseas. It also includes organisations that are trying to emulate or to join the global labour market and see the United Kingdom as an example of an education system that can allow them to do that. Again, an improved approach to the way in which we regulate our qualifications in particular, but there are other things, would help us to export our expertise.

Q109 Richard Fuller: Is there any particular measure that you would like to see?

Mike Dawe: Yes. It sounds awfully detailed, but it has a profound effect. The way in which you get a qualification onto the UK framework can be the first point at which you get a qualification that has validity overseas. The way in which we get, I suppose, our validity is, first, we understand what an employer needs, then we get our UK home country accreditation and then, with those two things, you can bulldoze your way through most of the regulatory systems of other parts of the world we try to work in. Without help in the second step, which is around getting that regulation around qualification, it is hard for us to export what we do and it is hard for us to help organisations like BAE Systems and Tesco to export what they do.

Professor Phoenix: When people talk about exports, by comparison, people often do think about things exported, but in fact education is one of our biggest exports, based on also the number of students we attract. Clearly, I could not miss the opportunity to

mention the fact that we are still incredibly well regarded overseas in terms of UK higher education. One of the things we do need to look at is the current approach in terms of the way we are publicising UK higher education and whether we are open and welcoming, and the visa regime as to whether or not that is forming a barrier to those exports. To give a figure, you have roughly about £10 billion a year coming in through overseas exports to this country. It is a very significant export market in addition to the human capital enhancement.

Q110 Richard Fuller: Do you think we should take students out of the immigration targets?

Professor Phoenix: That has certainly already been recommended by at least two political parties and, in the case of the third, there are a lot of people engaged.

Q111 Richard Fuller: I am asking you, not political parties. What do you think?

Professor Phoenix: I would say yes. I do not see the logic in not doing that.

Q112 Richard Fuller: Another area that has been talked about in the Productivity Plan is management and leadership. What contribution can you make to enhancing the skillsets of management and leadership, or do you think it is all fine?

Peter Horrocks: It is a key priority. It is particularly relevant to people who already have degrees but who want to add leadership skills and who want to add new forms in relation to the digital economy as well. Digital transformation and the ability to be able to use social media and big data are all new things that have come along since people perhaps did a different kind of qualification 15 or 20 years ago. To be able to get the Student Loans Company's support to be able to either do a further degree or to do the shorter courses that are the kinds of things that support executive education, absolutely to support the leadership skills that you are talking about—there is a huge unmet demand for that. However, the cost of courses for people who are already in work, who have mortgages and families to support, is high. There were huge numbers of people who used to come to the Open University to get exactly that kind of upskilling five to 10 years ago and that market has been severely cut back because the cost is higher, but, crucially, the loan support is not there. These are people who are prepared to invest in themselves if the Government can stand as guarantor and then they will pay back rapidly, because they will get improvements in their earnings. You are right to focus on that. That is a key area where we believe that we could make a measurable difference quite rapidly.

Mike Dawe: I do not have much to add to that. I was very wary of the question about where you would spend your pound. I think leadership and management is probably where you would get some of your fastest returns, but I was wary of that because of course you would fall off a cliff shortly afterwards. You do need to be looking into the long-term and apprenticeships.

Harvey Young: I would say, again, it is equally as important that we make sure that our management have the right skills. Certainly the research has shown that managers themselves do not have the right basic skills and therefore are unable to recognise the problem in their staff, so for a lot of employers the English and Maths issue is a hidden problem.

Professor Phoenix: I have nothing to add.

Q113 Chris White: In terms of the Productivity Plan, I will just ask you a bit of a topical question. I was wondering what you thought of Policy Exchange's report this week, seeing as HE and FE are both represented on the panel. Their recommendation or suggestion is that, with the Government grant, something in the region of £500 million should be shifted from HE to FE, which might address some of our skills shortage in terms of professional and technical qualifications.

Professor Phoenix: I read the report with interest. To be honest, it was a little disappointing, for two reasons. First, I think the methodology was flawed. If you look at the assumptions it was making about the money within the sector, it appears to have looked at not the cash reserves of universities but the total asset base. To realise that, you would need to get all the universities to sell everything they own in terms of buildings, equipment, etc, and realise the return that is in the account. Therefore, I think there is a flaw in the methodology in terms of the accounting.

The second is, as I said at the outset, if we are really going to address not just the productivity needs but build aspiration and provide opportunity for the totality of the population, which is an essential factor for productivity, we have to realise the importance of colleges, schools and universities. It is not the answer to say, "Let's take even more money from this group or that group." Colleges need some investment. Universities also need some investment. It is not moving from one to the other.

Harvey Young: Regardless of the figures involved—and I think Professor Alison Wolf said this—FE is certainly the poor relation in terms of funding versus HE, but FE is the sector that is at the coalface with the existing workforce, more than any of the other sectors. If we do not support FE properly, we are missing a real trick in how we are going to support our existing workforce. It is the existing workforce that is going to drive the Productivity Plan for the foreseeable future.

Mike Dawe: We need good universities; we have good universities. It is a mistake to have dropped the funding in adult education, which is more linked to the FE sector. I would also observe, from the work we do with other countries, they benefit hugely from bringing people into the world of learning and work much earlier than higher education. As long as you make sure the qualifications gained early are stackable—that they can progress—then you gain some very early benefits, so perhaps I would agree that the weighting is too far to HE at the moment.

Peter Horrocks: I would focus on a recommendation in the Policy Exchange report that is not about moving the money around, but is around a lifetime learning allowance and that focus on the importance of mature learners and the ability of people to be able to access appropriate funding. This is something that parts of the university sector, especially in relation to part-time, and the FE colleges share, which is that the Student Loans Company rules and the policy decisions in relation to those are very focused on conventional 18-year-olds' study. Being able to use that funding more flexibly in relation to both improving productivity and those who are in a position to be able to pay back those loans more rapidly than young learners is a constructive focus on something that is potentially of benefit to both HE and FE.

Q114 Amanda Solloway: Going back to leadership and management, because obviously that is one of the really crucial things—and I am thinking in terms of possibly SMEs, but it could be slightly broader than that—my first question is: can you learn leadership and management skills in higher education? Given that that would enhance somebody's ability to perform, how do you get over the time and the financial constraints of somebody who perhaps wants to improve their leadership and management and yet cannot leave their business in order to do that?

Peter Horrocks: Flexible modes of study are absolutely what are required for that kind of situation, both part-time and also an element of distance-learning, which obviously the Open University is best known for, but many other universities and other institutions are now using. It is about making sure that the way that the learning is delivered is flexible and appropriate, not all of it done at distance, but with face-to-face tutorials, weekends and evening. This is exactly why these types of learners are so important to support. They are the kind of people who are prepared to make that commitment into working alongside their busy working lives and it is exactly why focusing on those sorts of people and policies that can support them will have, we believe, a disproportionate and immediate effect in terms of productivity improvements.

Mike Dawe: The only thing I would add to that, because I wholly agree with that, is that supervisory management is something that people come across quite early in their careers, and we do very little in our current education system to help people at that stage, so earlier interventions or earlier access to some of the lower-level leadership and management disciplines would be helpful. Again, I am afraid I have seen that used very usefully in other parts of the world. In fact, it is quite surprising how little it appears in standard education in this country.

Harvey Young: I would echo both of those things. For years, further education has been working in the workplace delivering programmes around the needs of people's businesses. It is absolutely about different modes of study and it is about not being too prescriptive about the journey, if not the destination.

Professor Phoenix: I have nothing to add.

Chair: Gentlemen, thank you very much for your time. We really appreciate it. Thank you again.

Examination of Witnesses

Witnesses: **Dr Ruth McKernan CBE**, Chief Executive, Innovate UK, **Dick Elsy**, Chief Executive Officer, High Value Manufacturing Catapult, **David Harbourne**, Acting Chief Executive Officer, Edge Foundation, and **Professor Richard Brook OBE**, President, Association for Innovation, Research and Technology Organisations, gave evidence.

Q115 Chair: I will make a start early, because there is an awful lot to get through and I am really keen to hear your views. It would be useful to the Committee if you could just introduce yourselves and give us an idea of the institutions that you come from.

Dr McKernan: Ruth McKernan, Chief Executive of Innovate UK.

Dick Elsy: Dick Elsy, Chief Exec of the UK's High Value Manufacturing Catapult.

David Harbourne: David Harbourne, Acting Chief Executive of the Edge Foundation.

Professor Brook: Richard Brook. I am President of AIRTO, which is the Association for Innovation, Research and Technology Organisations.

Q116 Chair: May I begin by asking all of you why we invest so little in research, development and innovation as a proportion of our economy in comparison with other countries?

Dr McKernan: I am not sure I am the right person to answer that question. I believe we invest well in research. Our researchers punch above weight; they do very well globally. Innovate UK helps translate that research into business. If we want to do more in terms of business and growing the economy, investing more would be an obvious answer. I do not know if I can explain why.

Q117 Chair: The reason I mention this is because the EU average is around 2.1% or 2.2%. We are around 1.6%. Are you suggesting—and maybe others can comment on this—that we are very efficient, and that when we invest we get more out of it and, therefore, that crude comparison is irrelevant because we are really successful?

Dr McKernan: We are successful, but there is a lot more behind the data than that, and others have commented on it and will comment on it. We need to measure impact but we also need to look at what we put in.

Dick Elsy: That very lean investment has been very well targeted in the pure research in our academic institutions, and the figures speak for themselves. Bang for buck, we have some of the best output in the world in terms of technological research. The thing we have been not good at is translating that research into hard manufacturing value-add, and that is where there has been a shortfall of investment. It has been plugged now by investment in the Catapult programme and, as our session will continue, I can give you plenty of evidence of that targeted investment now really beginning to show through in productivity and added value in manufacturing.

David Harbourne: This is not my current area of expertise, so I will keep my comment on this very brief, and it is to do with short-termism in this economy. That afflicts both small and large businesses, which are expected to achieve a very rapid return from any new investment; that inhibits anything that takes long-term investment.

Professor Brook: What we do, we do well and efficiently and we get a good return, but we are not doing enough of it, and that has to do with risk aversion. If we come back to the comment about capital markets and finance, finance does not have sufficient appetite for the risk that is involved to take our investment up to the benchmark level that

you talked about. We can ask ourselves why that is. Whether you are a finance director of a company or a venture capitalist—and I have some background in venture capital—you are investing in people. You want to invest in people in whom you have confidence, and there is a relative shortage of people you want to invest in, in terms of their leadership qualities, skills, experience, and communication ability, and that comes back to the problem with basic skills. We need to work out what we have to do to induce capital to take more risk and to be more patient in terms of getting its return. From my experience in venture capital, investors need to get their money out at some point in the growth cycle of a company and, in doing that, it can be disruptive, because you need to bring in new investors. There are risks for the early investors, who get diluted heavily, and that can be a problem. Also, the management of the company may feel they are going to lose control of their future and I think that stunts ambition. So there is a whole series of factors to do with the capital markets that are holding back the UK's ability to invest more in R and D.

Q118 Chair: Richard, I will stay with you but I would like comments from everybody. Given the weaknesses that we have identified, or certainly the possibility for more potential, does the Government's Productivity Plan address that sufficiently?

Professor Brook: "No" is the direct answer. The plan is a set of measures that encourages individual companies to do what they do better and more efficiently. It is missing out on the more radical opportunities for innovation. How would we expand those inherently high productivity sectors as a proportion of the economy? How do we get supply chains to do things they are not doing, or cannot or will not do, for various reasons and how do we stimulate that to happen? It is a matter of coming back to access to finance and getting the availability of capital better matched to their needs.

David Harbourne: Within that, loan funding, in particular. There has been heavy emphasis on venture capital, and rightly so—we have all seen a growth in that, for small businesses and start-ups, through angels, for example—but there is an established preference, on the part of many people who are developing new ideas and businesses, for loans, and there we keep coming up against the same old sticking point of where the long-term loans are that you would find in Germany but that are not as prevalent in this country by any means.

Dick Elsy: The plan is a well-intentioned framework. It falls short of being specific and when I say that, it clearly makes a big play on the importance of innovation. The reality born out of the plan is that we are having conversations about reductions in innovation spend through the Comprehensive Spending Review and yet, yesterday, John Cridland at the CBI was calling for doubling of Innovate's expenditure. There is a gap between the intentions of the plan and the reality, so being specific about quantum and timing is very important.

Building on the investment and patient capital bit, it is very difficult to intervene in capital markets, and what Government can do is support the risk-taking in that space, because I do have a view that our institutional investors in the UK lack the patience and the technical literacy to invest in the mid-ground space—the so-called "valley of death" that was discussed before. However, instruments like the High Value Manufacturing Catapult can help them understand that risk and help the industrial client reduce the risk of the investment to make it a safer bet to invest in. We are working with the four big banks

in the UK, in partnership, to address that issue, to improve the lending book for them—they want safer lending—and help the industrial players who are using our facility to take the risk out of that investment.

Dr McKernan: I would say that the Productivity Plan is very rich in lots of different aspects, which is very helpful for Innovate UK. We can build on a lot of that. It gives us a lot of direction.

Q119 Chair: Is it too rich? Does it give you indigestion?

Dr McKernan: No, not at all. The bit that I anticipated and was there was around products and growing products, but also the infrastructure aspect to it, which is very important. As you know, we have 10 Catapult centres that we fund and support, and Dick Elsy is responsible for the High Value Manufacturing Catapult, but some of our Catapult centres work on infrastructure, harder to quantify in terms of direct return on investment, but very important, as indicated in the Productivity Plan. Just a quick example: the Future Cities Catapult is working very closely with Manchester on how to align their planning information with their sewage information, their electricity supply, and the data that they will gather about where to put schools and where to put services in the future. This is a very complex piece of work. They are doing something very similar for Dubai, although of course Dubai are paying a lot more for it. That will help the infrastructure and raise the productivity in the area, so I think it is important to understand productivity is not just for an individual company and for the products they make, but also the opportunity to improve productivity across the piece in the UK. I was very pleased to see that.

Q120 Amanda Solloway: Following on from your point, Richard, and looking at investment in skills, we hear a lot about the skills mismatch, and I wonder if we have got the right people in the right jobs and to what extent you feel it should be the Government's role to ensure this or whether it should be left to market forces.

Professor Brook: In my time looking at investment propositions, I have been very disappointed at the number that come forward with poor English, bad grammar, spelling mistakes and then an inability to communicate; that erodes confidence. There is an issue here with basic skills, and a serious job to be done in bringing basic skills up to scratch and that is something that the Government and the education system need to look at.

In terms of what we do with the basic product, if you like, I think that apprenticeships for a variety of roles need to be carried out in companies, so that is where I prefer to see people learn the job. It is where I learnt the job. I think my whole career has been an apprenticeship in one way, shape or form, because I have been exposed to so many different circumstances and environments for doing business.

I will make another comment: I did my postgraduate degree in the evenings and it was one of the best things I ever did, but it is very hard to find opportunities these days for people to go to night school, as it used to be, and that is a shame. However, industry does need to take on the task of giving the relevant experience to the good people who come out of the education system and give them a variety of experience in the form of an apprenticeship and progression into the kind of roles they want them to fulfil.

David Harbourne: The Government have to set the scene, particularly where people are entering the labour market for the first time and, of course, regardless of the nature of the decisions they take on secondary education, further education, apprenticeships, higher education, that ends up having an impact on the labour market. The key difficulty that we would see has been successive Governments supporting an expansion of higher education without due regard to the nature of the higher education, so that amongst young graduates now we have, according to the Office for National Statistics, 44% of recent graduates in non-graduate employment. At the same time, we are seeing a recovery in the economy and growing shortages of skills in those areas that were touched on in an earlier session, particularly the area around Levels 4 and 5, so sub-degree programmes. It is the question of emphasis on where the Government believe that public money should be placed or put at risk. Should it be more into further education as opposed to higher education in the next five years? I believe the answer is yes.

Beyond that, I do agree that the labour market itself has a lot more that it needs to do, but my experience over a long career or working with, for example, the hotel and catering sector, is that you cannot take something that works, let us say in engineering—you had Rolls-Royce here earlier—and say, “If it works for Rolls-Royce, surely it would work for hotel and catering.” It does not, and we need this more nuanced approach to how we understand why it is that some employers invest substantially of their own resources whilst others do not.

Dick Elsy: We are taking a very keen interest in this space. The High Value Manufacturing Catapult develops the necessary technology and our mission is to translate that technology into industry, so inevitably it involves a degree of training. Although it was not in our remit, we are very focused on developing the technicians to go with the technology. We have identified that is a market failure in the UK, and so, with the EEF, we have developed a proposition for the National College for Advanced Manufacturing, which is principally focusing on advanced apprenticeships where there is a dreadful paucity of capability in the UK, and we are facing a looming crisis: we are developing all these great technologies but we need the people to go with it. Therefore, using the national college programme, we are attempting to fill that gap.

We had Rolls-Royce in earlier on, and those apprentices who have the appetite to go through into higher education and get a degree are some of the best qualified and rounded individuals. They are very, very valuable people to the UK economy. This focus on apprenticeships, if it is properly targeted, will lead to a rich seam of talent for the future for the industries I represent.

Dr McKernan: My response would be to say that we are moving into a future that is all about knowledge and technology base. It is a very different type of economy and we need to have the skills to match that. In a recent meeting I was at with the Automotive Council, they are 40,000 engineers light. Science, Technology, Engineering and Maths is a gap in the UK. We do not have enough people who can do really clever mathematical modelling—so-called “machine learning”. That is going to be critical in the future. If we want to prepare ourselves for success, it is really important that we up the knowledge base of those types of STEM subjects in the UK, however we can do that.

Q121 Amanda Solloway: I heard earlier about sponsorship. I wonder if there are some other different schemes that we should be doing. Obviously, there are apprenticeships that are working, as you say, very well, but I wonder if there is something else you might recommend that we could do other than apprenticeships. Is there something you have come across?

Dr McKernan: A lot of learning comes from just trying to do the job. We give funds to small businesses, and in the data that we gather afterwards, 80% of them say that they improved their skills by trying to start and run their own business. So there is an element of just doing it—you do not know what you need to know until you are in that position—and then getting very quick and readily available help, either through peer companies, through Catapults, where we have a lot of experience or through more standardised learning. All of those are good.

Dick Elsy: Anything that bring educators and industry together, so whether it is the apprenticeships we talked about, or bringing academic institutions together, like we do, with industry, and things like the Knowledge Transfer Partnership, which places capable graduates and PhDs in industry to help them with thorny issues, and that has been incredibly successful. Any initiative to stimulate that is worthwhile.

David Harbourne: We should also always learn from what works, and that applies both here in England and also worldwide. We have a tremendous tendency in this country to look for the next new initiative and to consider that if anything that was pre-existing is not working 100% efficiently or 100% well, there must be something deeply wrong with it. If we started with the more Canadian approach of appreciative inquiry and found out what was working well and why it was working well, you could do more of it. To me, that is the fundamental point about further education as a sector: that there is a great deal that works well in further education, but we have started from the opposite end of the spectrum and said, “There are clearly parts of it that are not working well; therefore the whole system must change.” No. Let us start by finding out what works and then do a bit more of it.

Professor Brook: I would say that the Catapults and similar organisations—and I spent part of my career in one—are a tremendously good environment in which people can learn about the different aspects of science, technology and business. In a Catapult, for example, you are exposed to the academic community; you get to learn how academics think, talk, and what is important to them. You get to learn about business and what is important to your commercial clients and what their priorities are. You get to talk to financiers, because if you are looking at bringing on new companies, you do talk to the investors, venture capitalists, banks and so forth. You also get to talk to Government and public funds, and find out what you can and cannot do with public sector support. They are a tremendously good breeding ground for people with multidisciplinary skills and the ability to communicate with different communities who all have to come together in order to get an innovation embedded in the economy.

Q122 Amanda Solloway: I notice in your submission you talked about the polytechnic pathway. Do you think that would improve productivity?

David Harbourne: That was me. Yes, I absolutely do. I came away from a visit to Switzerland quite convinced of it and then discovered that a book had been written on the

very same subject last year—this one here by François Garçon, *Formation: l'autre miracle Suisse*, which means “Training: the other Swiss miracle”.

Q123 Amanda Solloway: Do they have that in English?

David Harbourne: They do not, unfortunately. It is a good job I can just about read French. The pathway they introduced in the late-1990s—and the 1990s was when we transferred polytechnics into the university sector—was that they were, for all intents and purposes, inventing the polytechnic sector. They believed that, in order to compete in an international knowledge economy, they needed to improve the whole of the skills base throughout the working population, but that the way to do that would be to build on the established strength of an apprenticeship programme in order to provide paths from an apprenticeship to degree-level qualifications, professional qualifications and then postgraduate qualifications. When I went to see that at first hand and subsequently was able to read about it, I came away absolutely convinced that what we have been lacking in this country for some time is a very clear, coherent polytechnic path that would appeal to employers, to young people, people partway through their careers and to parents in a way that the current fragmented system perhaps does not. It seems too confusing at the moment compared with universities. If we were able to recreate a polytechnic path, it would make a substantial difference to productivity and skills.

Q124 Amanda Solloway: Following on from that, can I ask all of you whether you think the Productivity Plan will impact on skills?

Dr McKernan: Yes, I think it can do. Yes, I do.

Dick Elsy: It provides a framework for stimulus. I welcome the target to get 3 million apprenticeships in process. A lot depends on the physical detail of that. There are apprenticeships and there are apprenticeships, and I described to you earlier on, that rich seam of very high quality, high value ones, that we need more of.

David Harbourne: I would echo that. I agree that as long as we get the right, high-quality apprenticeships the Productivity Plan will work. I think the balance between further and higher education is incorrect, though, and the Productivity Plan would have been better if there was more of a focus on a vision for further education.

Professor Brook: It depends how well the plan is implemented. Personally, I think it is a set of measures. I would like to have seen some sort of roadmap as to how we get from here to there, how these measures are connected together and what the interdependencies are. Then I think we would get a better idea of whether it is working or not. I worry that it is a plan with a set of measures that, once they have been published, “Off you go and do it.”

Q125 Amanda Solloway: Moving on slightly in terms of research and development, we hear a lot about money that is needed. I wonder if that is the only thing, though. I wonder if there is something else that we need to be doing in line with the Productivity Plan. Richard, let me come to you first.

Professor Brook: Innovation, which I think leads to productivity, because that is really the driver, largely comes about when you bring different communities together and

get them to address a common problem. You have to have a carrot to get people to come together in that way, and the money is important because it does attract people to come and work together. However, you do need more than money, and you need people with the right skillsets and the right attitude and the right ambition to want to go and do something. I will say it again: the Catapults are a good breeding ground for such individuals. People can go there and they can gain the experience of all the different things you need to do in order to take an innovation and lead it through into commercialisation.

David Harbourne: I would say brokerage, because where I look at systems where there is a strong emphasis on growing apprenticeships, for example, one of the ingredients has been fair and honest brokerage that help employers to understand the training landscape, introduce them to people who wish to be apprentices, introduce them to people who can provide their training and make those dots join up. Brokerage works significantly, for example, in South Carolina, which is often mooted as a beacon of apprenticeships in the United States, though starting from a low base. Similarly in New Zealand, the re-booting of apprenticeships there is based very largely on not just the funding that is available but the brokerage. Certainly in a past life, I have seen that when I worked in the world of agriculture, where brokerage by what was then called the Agricultural Development and Advisory Service enabled the farming community to get honest and fair access to innovation, technology and new developments.

Dick Elsy: I very much agree with Richard on the convening power of the Catapults. The principal model is getting people together to collaborate, and you are absolutely right that there is a need for a carrot to encourage that. I am a firm believer if put bright-minded, technical people together with a common objective, they will find a solution, provided it is a light-touch environment devoid of politics and heavy-handed management. They will naturally collaborate, and that is a key principle of the Catapult. One of the reasons we allow them to collaborate and get together and develop new intellectual property, which they own, is that we do get part of our funding from Government, which means that we do not need to own the intellectual property; it is for the businesses working for us. That is a critical element, because if we did not have the Government funding, we would be a pure play commercial model, our tentacles would go around that intellectual property, it would become a commercial proposition and it would freeze the whole process up.

The other point I would like to make, because you asked whether we need money to do it, is the convening power of the industry forums. We have mentioned the Aerospace Growth Partnership and Automotive Council earlier today. I see the captains of industry in the UK getting together to tackle national issues, whether they are legislation issues or, indeed, things like innovation; bringing new products and technology to market for the common interest in the UK. I see great strength in those forums and would like to see continued partnership with Government, particularly with the Business, Innovation and Skills Department, keeping those links with those critically important forums. They really do work well.

Professor Brook: If I may add, the independence of the Catapults is important as well, is it not, in that businesses will come together in a neutral forum, and this brokerage can take place in an independent forum, which is not dominated by any particular commercial interest?

Dick Elsy: Yes, we are entirely sector-agnostic.

Professor Brook: That is very important, and that independence is underpinned by your legal status and, indeed, that element of public sector support, which maintains and, if you like, guarantees that independence.

Dr McKernan: I would add a different element to that. Of course, the Catapults were spawned by Innovate UK and we fund them, but I would also add that it is really important that we fund and grow small businesses. We can train lots of people, but if they do not have growing businesses to go into, we have a challenge. For me, we need to make sure we do everything we can to make small businesses investable, because it is the medium-sized businesses that employ people who pay taxes; that is where the economic growth is in the future. When we grow businesses, it is important to look at innovation and new technologies. Fifty percent of productivity growth has been shown to be due to innovation and one-third attributable to changes in technology. That is where I think Innovate UK has a lot to contribute, making sure that the micro and the small can become the employers of the future.

Q126 Craig Tracey: I just want to pick up very quickly on a point that Richard made, and it follows on from a point that Harvey mentioned in a previous session. Certainly when I had my business, there was very much a focus on the basic skills. They were the most important things. Now we are moving into the digital economy and a lot of businesses I am talking to in the constituency are looking at employing on attitude. They are looking at getting people in there. I just wonder: are the basic skills still relevant in lots of modern workplaces and, if they still are, are businesses sending out the wrong message?

Professor Brook: There are a whole variety of things that give you an impression as to whether the person in front of you, who is seeking your investment, is somebody you are going to trust with your money. A lot of them are not verbal. A lot of it is to do with body language. It is the sense of whether the person has confidence in what they are doing. The professional investors I have worked with say that they can tell within a few minutes of meeting somebody whether this is going to be somebody they are going to invest in or not, or whether the CEO is the right CEO. It is a combination of attitude, as you say, having and showing the confidence in what you are doing, but showing you understand the risks at the same time, and showing that you have the right experience, so it is a set of things. I have been involved in running investment readiness programmes, which take people and a technology idea and converts them into an investible proposition, and that is about getting their head in the right place, as I put it. It is a whole variety of factors that matter.

Dick Elsy: There is nothing that can replace basic numeracy and literacy. Ruth described the type of new jobs in mathematical modelling and simulation. Those individuals are going to go nowhere if they cannot communicate the output of their results and listen to the inputs and communicate them, so basic skills are absolutely fundamental.

Q127 Chair: The final question from me: there is a complex innovation and finance ecosystem. Does the Productivity Plan enhance what is already there in order to improve productivity? If we could have a single sentence from each of you, it would be helpful to our inquiry.

Dr McKernan: There is not a single-sentence answer to that. It is a very complex ecosystem. Where there is flexibility and money in the private market we should use that to ramp up the growth of businesses, where we can. I do not think we can avoid, where we have collaborative research, where we have Catapults, using public money to seed that and ensure that we have the productivity in the businesses that we need in the future.

Dick Elsy: It is an ecosystem and we have a new instrument in an area where we have had market failure in the valley of death: it is the Catapult programme. I can say that with the High Value Manufacturing Catapult for every pound of Government funding it is already delivering £15 of manufacturing value-add in the economy. Every pound of Government funding instantly leverages £4.36 of industry and collaborative R and D, so it is acting as a magnet for investment, and it is already, after four years, delivering some hard results, so long may it continue.

David Harbourne: The challenge of the Productivity Plan is the same as any that covers more than one Government Department. Each chapter was written by a different set of people and, therefore, the delivery will be by different sets of people. Joining that together is the big challenge. If you can do that, then, yes, it will work.

Q128 Chair: You do not see any mechanisms within the plan to enable that joining up to take place.

David Harbourne: No.

Professor Brook: No, and it could do more to recognise the importance of that infrastructure.

Q129 Chair: What do you mean by that?

Professor Brook: The radical innovation and the infrastructure and the things that we have just been talking about do not appear sufficiently prominently in the plan in comparison with the other, more generic measures that are put forward. It is the roadmap. I would like to see the roadmap and that would identify what the infrastructure does and how important it is.

Chair: Thank you very much. That was very helpful. I am really grateful for your time and your input into the inquiry into the Productivity Plan. Thank you very much.