HOUSE OF LORDS

Revised transcript of evidence taken before

The Select Committee on Digital Skills

Inquiry on

DIGITAL SKILLS

Evidence Session No. 6 *Heard in Public* *Questions 66 - 75*

MONDAY 1 SEPTEMBER 2014

2.15 pm

Witnesses: Marcus Mason, Angela Morrison and Paul Willmott

USE OF THE TRANSCRIPT

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

Members present

Baroness Morgan of Huyton (Chairman)
Lord Aberdare
Earl of Courtown
Baroness Garden of Frognal
Lord Haskel
Lord Holmes of Richmond
Lord Janvrin
Lord Kirkwood of Kirkhope
Lord Lucas
Lord Macdonald of Tradeston
Baroness O'Cathain

_____

Examination of Witnesses

Marcus Mason, Policy Manager, Employment and Skills, British Chambers of Commerce, **Angela Morrison**, Chief Information Officer, Direct Line Group, and **Paul Willmott**, Director, McKinsey & Company

The Chairman: Good afternoon. Thank you very much indeed for joining us and helping us this afternoon by coming to give evidence. You have a list of interests that have been declared by Committee members, which were also declared orally at previous sessions in July. They can be found in the transcripts. This is a formal evidence-taking session of the Committee and a full note will be taken. That will be put on the public record in printed form and on the parliamentary website. You will be sent a copy of the transcript. If you want to revise minor errors, that is fine. The session is on the record. It is being webcast live and will be accessible via the parliamentary website afterwards. You are very welcome—in fact, you are encouraged—to submit written supplementary evidence if there is anything we get into where you think you could give us more information about something. I am advised that you should speak up and speak clearly. We are fortunate that this is one of the rooms that is fairly good, so you do not need to shout. In some of our Committee rooms you probably would need to.

That is it from me. I suggest you introduce yourselves in turn. If you want to make any opening remarks that is fine. If you do not we will go straight into questions.

Marcus Mason: Hi there. I am Marcus Mason, policy manager for employment and skills at the British Chambers of Commerce. We are the national body that represents accredited chambers of commerce across the country. In opening, I would like to say simply that chambers of commerce are very well placed, given their local nature and their interaction with local businesses, to address many of the issues on digital skills we will probably raise today. As we progress, I am particularly keen to talk about business and education partnerships and how those might be developed to future-proof against changes in the technological and digital landscape, particularly around school accountability and the involvement of businesses within schools.

The Chairman: If you feel we do not give you sufficient opportunity to do that in this session, that would be something we would be very happy to receive further evidence on.

Angela Morrison: I am Angela Morrison, chief information officer at the Direct Line Group. I also sit on the advisory group of the e-skills board, which is a CIO advisory board. There are two boards, a CIO board and a CEO board for companies such as Accenture. I sit on the CIO board.

Paul Willmott: My name is Paul Willmott from McKinsey & Company. I head up our digital practice globally. Thank you for the opportunity to give evidence.

Q66 The Chairman: Thank you very much indeed. Let us kick off. It may be that only one of you will want to answer on some of these questions. You do not need to feel you all need to answer every question. Let us see how we get on.

I will start with the broad, big question: what do you think are the main challenges for economic growth as the UK transitions to a more knowledge-driven economy? We are particularly interested in how people can prepare for that and take advantage of the changes. As a Committee we are also interested in how that can be done everywhere in the country, not just in London.

Marcus Mason: The term "knowledge economy" in some ways is a difficult one; it might obscure the topic more than it enlightens. It is often conflated with the service economy. What we are talking about here is the digital skills and digital economy. In looking at digital skills and digital economy, there are a number of different factors and challenges worth highlighting, first around having the right workforce with the necessary skills and flexibility in order to lead careers in the modern workplace.

Essentially we are talking about workers with the base level of digital skills to function across all the sectors that now need those skills, as well as high-level skills to participate in careers in the growing digital industries. Secondly, having the right infrastructure for knowledge or digital-based firms is incredibly important. We hear often from members that they do not have the right digital infrastructure for fixed broadband or mobile broadband technology to grow and expand in the way they want to. Finally, an issue that we hear about all the time is access to finance and having the right finance in place to allow SMEs to grow and get the investment they need to become world-leading firms.

The Chairman: Before we come to the other contributors, one issue that has been raised with us in earlier sessions is knowledge. For instance, SMEs use The Cloud. How do people find out about that? Do you have any examples that perhaps you could send to us of where that works, of where good information networks have been set up, particularly to help SMEs? We have had fairly clear evidence that knowledge of what is available now is a problem.

Marcus Mason: We have a number of examples of accredited chambers doing this very well. In many ways, the accredited chamber network is the premier network for information-sharing between businesses. Thousands of businesses are members of chambers across the country. Collectively they employ millions of people, so they are very good places to bring businesses together and develop the infrastructure and skills of local businesses. For example, Norfolk Chamber of Commerce runs a series of events throughout the year on digital skills, not just for individuals but for firms themselves, where it brings in some of its

local businesses to give workshops and talks on the latest technological and digital advances so that the rest of the local business community can benefit from that and in some cases exploit that in order to grow.

Angela Morrison: The ability for everybody in society to understand basic technology, whether it is security or The Cloud, is hugely important. We have to do it in education and for SMEs. I have an example from Norfolk of my nephew, who grew up in Great Yarmouth and worked in a small printing firm, doing just a small graphics job, but he got a passion for Apple computing and taught himself graphic video. He put up a YouTube video. He now works for a Shoreditch company; he is still based in Norwich because they set him up locally. He does piecework for Apple employees in America. All that has been through the internet, none of it through any infrastructure or anything but the very local. That is the beauty of it—if we can get the skills out there and allow people to understand what they can do and use, it is not geographically constraining at all. That is great to see.

The Chairman: It is knowledge—spreading knowledge.

Angela Morrison: It is spreading knowledge and just getting there so people can see what they can do, and get the skills. The internet and broadband are great but we need to have superhighways out in small villages and places like that so that those villages can be accessed.

Paul Willmott: No doubt you will have heard evidence on this, but the shift to the knowledge-based economy is very significant and has profound implications for our country, economy and society. To put this in perspective, a recent Oxford Martin School study looked at the impact of automation on US jobs. It estimated that 47% of jobs would be subject to automation within the next 20 years, which, if you think about it, is both profoundly complicated to navigate but also a huge opportunity if you think about the productivity implications. Compare that with the first Industrial Revolution, when the maximum labour productivity growth seen in any one year was about 1.1%, and you can see that the opportunity here is very significant.

The challenge is two-sided, if you like. One challenge is about how you grow new businesses but also whole new sectors. Another challenge is about how you enable the transition of the sectors that are being impacted less positively. I agree with everything that Angela and Marcus have said about the need for skills as a way of supporting the growth of new businesses, and the importance of infrastructure. I would add that I think that the Government have a role to play with regulation and support, such as the right financial incentives, guarantee schemes and so on.

There is a broader question here about where the new sectors will come from and what our participation should be. For example, the video games sector hardly existed 20 years ago but is now a substantial sector of the economy; it is actually larger globally than the movie industry. We in the UK have been a leading player. I do not know what the answer is, but we need to find the next sectors like that and invest in them so that we remain globally competitive and provide productive opportunities for our workforce.

On the transitioning—helping the sectors that are less positively impacted—finding a way of enabling retraining would be helpful. I am quite optimistic about the opportunity to retrain colleagues and employees who are mid or even late-career into digitally productive jobs. That is something that we should explore.

The Chairman: We have had similar thoughts.

Lord Haskel: I agree with you about the challenges, but how well are we doing at meeting them? You spoke about productivity but we have not seen that move in the right direction for some years. You spoke about labour flexibility. That seems to be the equivalent of low pay and insecurity. How well are we doing at achieving this?

Paul Willmott: On productivity, many commentators have noted that the theory is there but the practice is yet to be realised. Again, looking back to the Industrial Revolution, it was some 60 years after the steam engine appeared that productivity gains started to come through as people learnt how to use it and it became efficient. I think the same thing happened with technology, particularly software. My own view is that we will see an acceleration of productivity coming through. At least, firms will be able to deploy the technology that is now available to improve their own productivity. It is up to the broader economy to work out how to translate that into a broader economic uplift, which again comes to my point on the need for new sectors and helping entrepreneurs to grow.

Q67 Lord Janvrin: Picking up on that issue of helping entrepreneurs to grow, one point that has come out frequently is the importance of networking and the growth of hubs. I would be interested in the panel's views on how one can encourage that kind of activity and create an environment where hubs grow—not, perhaps, in your village in Norfolk, but you know what I mean.

Angela Morrison: I live in a village in Norfolk but it does not have a lot of those connections, I can tell you. However, my cousin's village does and it makes a big difference. On creating an environment of safety, the flexibility of the internet and indeed of all technology means that it might not be the nine-to-five job that everybody is used to. One of the challenges in my life is gender and trying to get more women into the technology workforce. Actually, they want more flexibility. They do not want the nine-to-five but want to be able work at home. If you look at job websites to try to find IT jobs, you will find that very few are part-time. They are all looking for full-time. The whole recruitment business is around full-time employment. We have to work out how we move ourselves on so that we have networks available for people who do not work full-time but have time to do work in the hours when their children are at school or in the evenings, or even where men want to do home-working as well. My husband stays at home with the children but he finds it very difficult to work. He does some work but not a lot because the market is not geared towards that. We have to create some completely different socio-economically that enables that efficiency and productivity in flexible working. That is what this technology and digital skills enable. Most of these games companies started at home with people on PCs. That is where they all came from. They did not come from some big organisation creating a game but from people doing it at home. Somehow, we have to move society on.

Lord Janvrin: The geographical proximity of some of these creative industries or entrepreneurs seems to be important. My question is about how you create more and more hubs, which we have seen grow up in—

Angela Morrison: Shoreditch and places like that? You have to use chambers of commerce and you have to create networks and environments where people can do that. My nephew has moved from Great Yarmouth to Norwich because Norwich has more of a hub than Great Yarmouth did. There is no reason why we could not create one in Great Yarmouth.

The Chairman: In answering, Mr Mason, can you go further on how we move from an individual working at home? The other piece of evidence we have had quite clearly is that there are lots and lots of little start-ups. We are rather good at that, but less good at taking it and scaling it in any way. If you could help us address that, that would be good.

Marcus Mason: First, on the hubs or local networks question, it is important to build on what is already there. Clearly there are good examples across the country of hubs or networks of different digital and creative companies coming together very successfully in local ecosystems. That is something that policymakers want to look at replicating, but from a policy perspective it is really important to build on what is already there—for example, where there is a budding latent cluster of firms or excellent research facilities in a certain area. There needs to be the basic infrastructure to build on to get a successful local network. It will not work if the Government come from on high and decide that there has to be a hub where the basic infrastructure is not there. Coming back to the point I made earlier, we think business-to-business interactions are the solution. Drawing on examples from the accredited chamber network, chambers can be delivery partners. For example, Manchester chamber delivers 900-odd apprenticeships a year, many of which are in the digital sector. It supports small and medium-sized enterprises to find the right training at the right price. Chambers can also be disseminators of information, as I mentioned earlier.

When it comes to scaling up from small and micro-firms to bigger ones, micro-firms account for most businesses across the country. Not all of them should be or need to be scaled up, but for those where growth is a viable option, access to finance is the main challenge that we hear about, across our membership, for those types of organisation, as well as accessing the right talent. On access to finance, if you look at the most recent SME Finance Monitor's results, only 30% of first-time SME applicants pended the process of getting a loan or overdraft, compared with over 60% of other applicants. It is a real issue. Perhaps the British Business Bank could be better capitalised and given a remit to work directly with SMEs to support the financing of smaller firms.

Finally, on accessing the right talent, going from a small or micro-firm to a much larger firm, those types of organisations often need the right senior management to grow: the types of staff that have had experience of going through the growth phase. It is important to recruit from the global talent pool. If we want globally competitive businesses, businesses need to be able to recruit internationally. Having a visa system that helps to recruit international students and graduates coming out of university would be incredibly helpful. Smoothing some of the distortions in the tax system would also be helpful. We often hear from SMEs wanting to scale that the personal allowance limit, which comes into effect at a salary of £100,000, acts as a bit of a cliff-edge for firms wanting to hire high-level executive directors to come in and help with that growth phase. Scrapping that personal allowance limit could help in some ways for those firms to recruit the right type of senior management.

The Chairman: That is quite a list.

Q68 Lord Lucas: Looking ahead 20 years, are hubs going to be physical locations at all, or are we looking at an HS2 situation where we are going to build a railway only to find out by the time we get there that driverless, autonomous vehicles are more efficient?

Paul Willmott: That is a discussion being had down the hall. It is hard to predict. My view is that physical hubs will continue to be important. The one thing—at least in the foreseeable

future—that cannot be automated is creativity. Creativity is often sparked by interaction, often unplanned interaction. We were fortunate to have the opportunity to work on the business plan for Tech City a couple of years ago. From that we looked at hubs around the world to see what mattered. We found four things. The first was presence, both physical and virtual, and the right leadership. The second was connectivity: building social networks and leadership and meeting opportunities, but also building networks with elite universities to get the right ideas. In this country we are good at producing great ideas. Having those as a feeder into these hubs was important. Third was the right capabilities, i.e. scales and so on. We have discussed that at length. Finally there was the right level of support, which would include financing, as Marcus has said, but as well as bank financing, venture capital financing is important, since we need that kind of risk appetite.

Lord Macdonald of Tradeston: Just to follow up on that, we have been told it is imperative for growth that we get a movement from micro to macro in SMEs and so on. Paul, from a McKinsey perspective, what evidence is there of this happening on any significant scale? Can you cite in figures how this has changed over the past decade and how it might change over the next? Apart from what you have all been discussing, are there any particular measures that might accelerate it?

Paul Willmott: I am not sure that I have any stats on the rate of growth in SMEs. One review we did a couple of years ago suggested that digitally enabled SMEs grew at just over twice the pace and twice the number of jobs as non-digitally enabled. It is clear that the digital economy creates a great opportunity for these companies' growth. Anecdotally, as I travel around the world, I would say that we are slower at scaling in this country than some others. I partly put that down to the scale of our market—in comparison, the US market has five times as many consumers. There is a natural benefit from that, which we need to overcome through improved trade connectivity. The point that I have just mentioned about venture capital stands. It is improving hugely in London, but it is not where we need to be. At this point it is probably not improving around the rest of the UK as well. Those are two factors.

Q69 Baroness Garden of Frognal: What skills do future workers need in order for the UK to be globally competitive? Mr Mason, in your opening remarks you mentioned the importance of the interaction between business and education, and I see that you have been involved in setting up an apprenticeship scheme in Parliament as well. Specifically, what part do you think apprenticeships can play in upskilling the nation in the digital age?

Marcus Mason: At the British Chambers of Commerce we hear from our members that the skills that are the most valued are often soft skills: communication, teamwork and the like. Of course, digital skills come up very highly in the surveys that we do of our membership. We have initial results from our 2014 workforce survey of 7,000 businesses across all sectors. Basic IT and computer literacy skills came out very high. Seventy per cent of firms say that these are important when recruiting, and a quarter of firms say that they have skills shortages in those areas. Apprenticeships can play a very important role in supporting school leavers in particular to access these skills on the job because they prepare people both for those digital skills if the apprenticeships are digital-related, but the soft skills that I mentioned are also very important to businesses.

The policy trajectory on apprenticeships has been positive for many businesses. There is much more emphasis on employer involvement in designing the frameworks for apprenticeships and in the delivery of them. There is some danger that the new funding

mechanisms that have been proposed for apprenticeships might alienate small and medium-sized enterprises. For example, with regard to the Employer Ownership of Skills programme that is being run by BIS, there are some questions as to how many SMEs are involved in designing those apprenticeships. It is really important to retain that involvement.

With regard to business education partnerships, rather than trying to guess which skills are going to be the most important in 10 or 20 years' time, which is a very difficult game to play, we think that strong partnerships between businesses and the education sector are probably the best way of future-proofing the economy against the changes that we see. For example, having business governors on secondary school boards systematically across the country can help to make schools more responsive to business needs.

With regard to school accountability, we need to think about the destination of pupils—whether they go into further study or employment over a two to three-year period—and how school inspectorates such as Ofsted can take this into account when making a judgment on the success of a school.

Finally, experience of work within schools and embedding the changes in accountability measures that I have outlined will, I hope, help bring about much better and robust careers advice and employer visits, and ensure that schools are better networked with the businesses that matter to them locally.

The Chairman: Do any of you have anything on older workers? We are receiving quite a lot of interesting evidence on how schools should change and the transition into work from school. Another issue that we are trying to get underneath or come up with some recommendations on is what to do about older people in the workforce who in a sense have been left behind and have not been upskilled with the skills that they need now. Do you have any experience or suggestions in that area?

Angela Morrison: e-skills UK has done some work on that. I can get that sent through to you. Personally, I am not au fait with all the work, but it has definitely done some on the IT workforce.

Q70 Lord Haskel: When we speak to employers about skills, they usually say that they might be able to find people with the technical skills, but they complain about the lack of soft skills—the fact that people are not used to working together and that they lack leadership, reliability and personal development. Is this an important part of preparing people for an e-world or will it become less important? Is this something we should pay attention to?

Paul Willmott: My view is that both are important—this is an "and" not an "or". Anecdotally, from the clients that I talk to, businesses are struggling to find the right technical core skills as well, not just how to write code but how to analyse a complicated problem and create an algorithm for it or how to design a beautiful-looking application, which is a creative skill. It is also clear that the kind of problems that emerge in the digital space and the solutions to them are much more cross-functional. It often requires the person in manufacturing to talk to the person in the supply chain to talk to the person in sales in a more joined-up way than they used to, hence the softer skills are equally important.

Lord Haskel: Mr Mason said that we need to dip into the local talent pool, but of course immigration is a political hot potato. The Prime Minister is going to put a limit on it, or that is what we are told. Is there a need for increased high-skilled immigration in the short term? What are the implications of this? How are we going to get over these political difficulties?

The Chairman: That is an easy one.

Marcus Mason: I am not sure I am the best person to advise on how to get over the political difficulties. I think I will leave that expertise to you.

The Chairman: I suppose our question is: is it needed? We have heard contrary evidence. We have heard that there has to be, at least in the short term, high-skilled immigration. We have also had at least one other witness saying, "Actually, that will slow down our ability to generate the new skills we need". That is the question we are asking.

Marcus Mason: We should not regard high-skilled immigration as just about plugging a skills gap. If we want global businesses that can compete across the globe, they need to recruit from this talent pool. They need access to the best global talent. Of course, there are huge spillover effects of hiring international candidates such as building relationships with new markets, and so on. It is important to view immigration not just as plugging a skills gap. Of course, in the short term there is a need, particularly in the digital and tech sectors. If you look at the visa system for foreign graduates who come over, we often hear complaints that that does not work for businesses that want to recruit high-skilled graduates from different countries. Perhaps looking at reinstating the two-year post-study work visa for graduates might be an option.

Paul Willmott: It is very important that we are globally competitive in our ability to attract talent. Digital business is global business. Talent is mobile, ideas are mobile, trade is increasingly global—for example, 12% of global trade now is e-commerce—so we absolutely need to be attractive to talent and be able to bring the talent in. Anecdotally, every day I see the need for skills from a global market. There is no question that this is an issue.

Baroness O'Cathain: I wonder why we have never looked at the green card idea from the United States, because that works. People in this country who are not as skilled up as they might think they ought to be if they wanted a job in the United States jolly well get skilled up before they apply for a green card to go to the United States. What is so repugnant about a green card that people are not prepared to even consider it, or is it just because it was not invented here?

Paul Willmott: I have no idea what the reason is. Certainly, colleagues who have gone to the States with a green card find that the system works rather well.

Baroness O'Cathain: There is no reason why we should not suggest that, because most youngsters—anybody under the age of 25—are aware of this. If they have made it their goal to go to the United States, they have made it their goal to get equipped in such a way that they will not have any problems with a green card.

Q71 Lord Holmes of Richmond: Does the UK have the competitive infrastructure to support the knowledge-driven economy? How do you think it shapes up to other countries?

Paul Willmott: If you look at infrastructure and what underpins it, the critical thing in my view would be to look at broadband and 4G broadband penetration. I do not have the exact numbers to hand, but I know that we are in the top tier globally on those metrics, so we are in quite good shape. One evidence point is that UK consumers now spend more per head online than in any other country globally. We have about $1,100 per head digital spend. The next highest is the US, which has around $1,000 per head. That is evidence not only that the

infrastructure is there but that people are using it. This is also an opportunity for the UK because it provides a ready market for digital services, at least in the consumer sectors.

The Chairman: I am quite surprised you have given such a positive answer, because we have not had such positive evidence from other people about the state of our current infrastructure. Everybody knows it is necessary but we have heard much more concerning evidence from other people about it.

Angela Morrison: As the growth continues at the rate it is, I think that might become more of a struggle. Living in a little village in Norfolk, unless you have a super-highway you struggle on a Saturday afternoon. There is point where we have to grow that infrastructure at the rate that use is growing.

The Chairman: The speed is what is at issue, and keeping that speed.

Earl of Courtown: That does not affect a great many people. I live in a village.

Angela Morrison: I was at a house near the Oval while there was a cricket match and you could not get on the internet because you had a concentration of 50,000 people in the Oval trying to use it. So there are limits. As we get more on-demand stuff, it will peak out more.

Paul Willmott: To clarify my point, I was not saying that more could not be done, just that we are globally competitive.

The Chairman: We were quite surprised to hear in one of our earlier evidence sessions that even in Hoxton the speed was limited. That is exactly what you were saying: there are so many people using it that the speed is not keeping up with what is needed.

Angela Morrison: We are doing so much. The Cloud is fantastic, but the more that goes into The Cloud the more that has to come over the internet to get to your device. You have nothing actually on your device. The more we have those devices, the greater that demand. I am not sure we are keeping pace with need.

Marcus Mason: From our perspective, we hear far too often of businesses having issues connecting to fixed and mobile broadband. That is in rural areas—everyone is aware of the issues that some rural areas face—but also in more urban areas such as Essex. We have a number of case studies from Doncaster as well. Businesses really feel that this can hamper their growth, both in trading internationally and in developing e-commerce businesses. While we have done well in our 3G development, we have begun to lag behind on 4G. Perhaps the development of 5G could be an opportunity for the UK to take the lead once again. One of the huge benefits of seizing the opportunity on 5G is that you then have the infrastructure for a whole new type of firms and businesses to develop off the back of it, ones that have a global competitive advantage as the result of being early entrants into that market and technology. We would very much push for more ambitious targets both on fixed broadband penetration and speed, as well as mobile broadband technology.

Lord Aberdare: Is there also an issue of the nature of broadband provision? I have heard that so much of the focus is on downloading that very often businesses that actually need greater uploading speeds find themselves at a disadvantage.

Marcus Mason: That is absolutely something that we hear, yes. The main issue for many businesses is often upload speeds.

The Chairman: If you have any good, hard evidence on that, we would be very happy to receive it. There are always lots of anecdotes. In producing a report, to back up any recommendations it would be very good to have some hard evidence from different locations.

Q72 Lord Haskel: Do you consider servers to be part of the infrastructure? We have read recently that there seems to be a big shortage of server capacity, about having to put them in the Arctic where the cold weather cools them down and the shortage of power. Is this another aspect that we must be aware of?

The Chairman: Mr Willmott is nodding.

Paul Willmott: This is an ongoing huge challenge at the moment for almost all companies and certainly the large ones: the need to continually build out more processing power. Moore's law obviously works in our favour in that we get more processing power over time, but at the moment the demands on processing power outstrip Moore's law for many businesses as their customers shift from, for example, going into a shop to purchasing online. That is leading to a need to purchase more boxes, and more boxes produce more heat, hence moving to the Arctic or elsewhere. Iceland is the new destination for data centres, and so on. It is a reality of life that that infrastructure needs to be continued to be built and invested in. Obviously, efficiencies will improve over time as technology improves but right now we need to keep building up that infrastructure as well as the networks.

Baroness O'Cathain: Who has championed that building up? Who is actually saying that? I never hear people say it. They say, "Oh, it is just that customers are not very good at using their computers". I have never heard any government Minister or anybody say, "We need to invest more and more in that". Have you?

Paul Willmott: At the moment, no, but I think most of the investment comes from corporations. As a consumer, we are increasingly using The Cloud as well for storage through the big technology companies such as Apple who provide that sort of storage for us. At the moment, commercial interests are taking care of it.

Lord Lucas: Looking ahead, do we need data centres, or can we handle this in a more distributed way where the heat might actually be useful?

Paul Willmott: That would be interesting. That is another great question that I do not have an answer to. I think that in the foreseeable future you will need centralised processing because the technology is simply not there yet to harness distributed processing effectively. That may change in time.

The Chairman: But your question, Lord Lucas, is whether we could heat Newcastle on the back of it?

Lord Lucas: I am just looking at the possibility.

Q73 Lord Kirkwood of Kirkhope: I want to turn to inclusion. The evidence that we have had to date suggests that there may well be an increasing problem about the dispossessed and the divide between those who have access to these skills and opportunities and those who do not. I have a narrow question and a broad question about that to ask you all in a minute, but I will just take advantage of this. Your evidence and experience is very valuable. Can I ask each of you individually about what you find in the positions you are in? Mr Mason is

obviously still doing some very important work with NEETs and young unemployed people. In terms of the dispossessedness of that generation, do you have any particular recommendations? All we can do is merely make recommendations to Governments to do things. Drawn from your work with young unemployed people and people outside the digital divide, do you have any suggestions about what we might ask Governments to do to put that right for the future?

Marcus Mason: From my personal perspective, from my previous experience of working with young people and supporting them into work, I have found that people often make the assumption that young people are very good technologically and digitally. In fact, often that is not the case and they are the most marginalised and, as you say, dispossessed. It is important that policymakers do not jump to that easy conclusion about young people all being digitally very savvy. In terms of what can be done, it comes back to strong business and education partnerships and partnerships between third-sector organisations and businesses as well. Of course, accredited chambers can be an enabler for this.

Lord Kirkwood of Kirkhope: Governments cannot order chambers around. Well, that is not strictly true: Governments can do quite a lot—they have a bit of influence with funding. You have made a powerful case, which I have written down, about the importance of the work that chambers do, but what can Governments do that would make a game-changing difference to these young people who, as you rightly say, are not that familiar with what they need to be doing?

Marcus Mason: At least on the education side of things, government can encourage schools to work more proactively with businesses. That is probably the solution, along the lines of some of the recommendations that I mentioned earlier on the accountability of schools.

Angela Morrison: That is what we do through e-skills UK. e-skills UK is very much led by the CEOs and CIOs of businesses. We absolutely work together to define, for example, the 'Behind the Screen' hub of GCSE resources, which is all about getting not only the coding part but also the creative parts and the whole piece about creating technology solutions. We have a cyber security module so that we make children aware of cyber security, because they do not understand it but they need to because their entire lives are online these days. Then we go to the ITMB, a degree course that is all about technology in business and how you bring those—

The Chairman: What does that stand for?

Angela Morrison: IT Management for Business. This year we have also created and launched the IT Software Development for Business degree —so we have created two degrees. The first one is very much about business solutioning, which is where I focus. We do not do a huge amount of coding in Direct Line Group; we mainly do what I call "business solutioning" and putting technology in there. Google and Microsoft are very much into software engineering, so Software Development for Business is their type of degree. Those two degrees have absolutely been built by us as an advisory body saying what we think are the important parts of them.

The Chairman: Who is delivering those degrees?

Angela Morrison: Universities such as UCL. The ITMB is in 19 universities now. Kick started by government co-funding, this is work that we sponsor and that we partner to get it landed. We need to do more of that. We do computer clubs for girls who are 10 to 14 years-old. That

is basically an online club that they do at lunchtime or after school. They do all sorts of things. The teachers only have a tutorial to tell them how to support it; they do not need to be technically knowledgeable themselves. We work that through with them. We have had over 150,000 girls through that programme. We then need to have a good GCSE for them to follow on to that is similarly inspirational, and an A-level that is similar, and then into a degree course. At the moment we do not have that full lifecycle. We need to get that educational lifecycle of being able to have a broad technical understanding from a very young age right the way through to a degree course and have a good career. You asked what my history was. I did computing and electronics O-levels. I then did maths and sciences for A-levels and an engineering degree.

Lord Kirkwood of Kirkhope: What were you being fed at home, and what gender-neutral Christmas presents were you getting, that enabled you as a young graduate to go to Bristol and get an electrical engineering degree? What is the secret? How do we package this?

Angela Morrison: I am the youngest of three girls. My father was a headmaster but actually always wanted to be an engineer, so when he got these three girls he steered me into those ways. I am a very mathematical, logical person. It is not the right thing for everyone—not for every man or for every woman—but we need to work out how we enable everyone to have the choice. That is what we do not do today. How do we enable everyone to have the choice and see the broadness of the career that I have had? I have had a great career.

Baroness O'Cathain: This is most interesting. I would like to know how many in that sort of age group, the 14s to 18s, actually know about this. Is it being pursued by the Government and the Department for Education? Are they forcing schools to enthuse those students? I doubt it.

Angela Morrison: I think that there is probably a level of frustration about the education system and how we get a broadly enough skilled course around there that gives them those things and get the teachers educated so that they can deliver that and have the right teachers to do it. I have three sons. They are all technically pretty good—my husband is a technician as well, so we are all pretty technical. However, one of them absolutely hates it at school, not because he does not love the subject but because of how it is being taught.

Q74 Lord Kirkwood of Kirkhope: Mr Willmott, I am still thinking in terms of broad and narrow questions about inclusion. You mentioned the figure of 47% dislocation in the future labour market, which is really scary for Governments. You do not need to be a psephologist to notice that there are number of people in this country who are beginning to feel left behind already. If you are telling me that there is a fighting chance that they will be 47% dislocation—that is not to say that I believe that they are all going to be thrown on to jobseeker's allowance because there will be churn and there will be opportunities, as you made clear—what can companies like McKinsey, which operate at a global strategic level, do to drill into the scale of that problem on top of the digital illiteracy that we are starting with? It is a wholly frightening political problem.

Paul Willmott: Yes, it is a huge problem, and it is up to all businesses, Governments, not-for-profits and so on to tackle; it is not down to one sector. I do not think that there is a silver bullet; it builds on many of the things that we have already discussed. There is no question that skills are at the very centre of this. To diverge from that for a second, the good news about skills now is that the resources are terrific. I was lucky enough to be in a school with a

BBC Micro and my maths teacher booked six of us, aged 11, into a room one day, which is why I am here today: I got very excited about the whole thing. Now the resources are available such that every child has access to the technology. There are amazing free resources out there such as Codecademy's An Hour of Code, from not-for-profit organisations that create online tutorials and apps for teaching yourself how to master technology. This is more about awareness, which is to your point, and encouragement and leadership from teachers and other role models, for getting kids and young adults into this sector.

That is the micro part. At a macro level—again, this is for business, government and so on—helping to identify where the growth industries and sectors are going to be is important. This morning I was rereading one of our old reports, called *Internet Matters*, which said that some of the surprise growth areas, particularly in the US economy, have been leisure-related, such as personal trainers and massage therapists. There are a lot of skills that cannot be automated, and, as you say, through the churn a whole new set of opportunities will be developed. In addition there will be whole new sectors, like computer gaming, that we cannot even envisage yet but that will emerge, and it is about spotting those early and getting behind them.

***Angela Morrison*:** There is a huge amount going on in getting girls and women into computing. It is vast. There are so many different initiatives; how can we bring them together and create a larger force? There are so many small things going on that are all fantastic—the Hour of Code, Your Life—but it is lots of little bits. How can government help to create a much more coherent plan of what we are trying to do?

Lord Kirkwood of Kirkhope: That is a crucially important point. People tell us that there are all these really good little things happening. Sitting centrally as policymakers, we see none of this. It is invisible. The trouble is that the risks of doing nothing and getting this wrong are so great. On the other hand, you do not want to get into the tendency of centralising everything because you might strangle it. How do you persuade me that there is not more we should be doing?

Angela Morrison: e-skills UK has just been morphed through the opportunity of the BIS Employer Ownership strategy. Employers have created the "Tech Partnership", building on the work of e-skills UK. The Tech Partnership is working across and representing the entire sector, bringing together all interested parties under a cohesive umbrella. The issue is almost how we take that complete representation and move that Tech Partnership quickly into being really a centre of excellence for action on digital skills. If you are going to make a difference in girls in IT or digital skills, that is where everything gets funnelled through because it has business and chambers representation, and all the other representation. We just need to make the most of the cohesion it can bring .

Lord Kirkwood of Kirkhope: Is that a structure you could put money into?

Angela Morrison: Yes. The Government do.

Lord Kirkwood of Kirkhope: How much money do you need?

Angela Morrison: We have just been given £22 million for the next two years, to start with.

Lord Kirkwood of Kirkhope: £22 million? Who by?

Angela Morrison: The Government, through BIS and the funding it has worked through.

Baroness O'Cathain: That is million, not billion.

Lord Kirkwood of Kirkhope: I did not think it was billion.

Angela Morrison: The issue is how you give that real teeth and strength to enable us to have some ultimate framework for where that is going. Loads of other stuff still goes on that basically dilutes its impact, so the issue is how you create that bigger impact.

Marcus Mason: I have a couple of points to add to that. On the issue of girls accessing STEM careers and taking up STEM subjects, obviously the Committee will be aware of the challenges there. Once again, we think that cracking that issue comes back to strong business/school partnerships. We have launched a pilot with five different chambers of commerce across the country, piloting different interventions, getting female business leaders into schools, giving talks and careers advice, and building those partnerships between business and schools. We will have the initial results of that pilot early next year, which might be slightly outside the timeframe of this, but if it is useful we can share that when we have it.

It is also worth thinking about how some of the inclusion issues are framed and communicated to business. Of course, there is a social imperative but there is also a very strong talent pipeline imperative. If you can crack the issue of getting more girls into those types of career, there are huge business benefits.

The Chairman: You are not doing girls a favour; you are doing business a favour by educating girls properly.

Marcus Mason: That is right. It is really important to think about the incentives for businesses when getting them involved in these types of partnership and appealing to their self-interest as well as the social argument, as well.

Q75 Earl of Courtown: It has been great hearing what you have to say. Basically, we have asked all our witnesses the best thing they could do to increase the UK competitiveness in digital skills. You have mentioned a number of things in the course of your responses, but what are your key suggestions? How would you make that happen and how much will it cost? A nice simple one to answer in two minutes.

The Chairman: Who would like to start?

Paul Willmott: Listening to the debate today has made me wonder about this. It is such a multi-faceted problem. Does it need a real focus? Is the single point that this agenda should reside with the Government? That would be my idea. I am sure you have better views than mine about exactly how to put that into motion. How much would it cost? I do not know. Maybe the way to think about that is to estimate the economic opportunity or downside if we do not get it right.

The Chairman: That is very a good answer, thank you. I am in interested in the idea of focus instead of it being disparate. I am sure that is right.

Angela Morrison: I would like to see technical skills being equivalent to reading, writing and arithmetic in schools. I know that is a big struggle because you need many skills, but the way that society is going we need three hours in computing—"computing" is not the word, but just that broader digital world. That needs to be up there because everybody uses and is

impacted by it. They need to understand what they are doing so that needs to be a core subject.

Marcus Mason: I think we would like to see better reform of the accountability system for schools by having more business governors on school governing boards, and by having schools judged more on the employment outcomes of their pupils.

The Chairman: That is really helpful. Thank you very much indeed. That was really concise and excellent.