Workforce Foresighting Hub – Episode 1 transcription

[00:00:00] Hello and welcome to the Workforce Foresighting Hub podcast, a brand new podcast which will focus on the alignment between future skills and innovation. We will be bringing together coaches, system developers, participants of cycles, and convenors from the Catapult Network. We will be discussing how we can work together to address the skills challenge, highlighting our process, and looking at examples of the impact we are already starting to see by proactively foresighting for future change.

The Workforce Foresighting Hub is an Innovate UK initiative, and it has been set up to provide insights and recommendations which will help identify future skills demands so the UK can start to develop a skilled workforce to adopt innovation and succeed in a global marketplace. We have some members of the Workforce Foresighting Hub team with us today to discuss the skills challenge generally [00:01:00] and how we can look to address it.

[00:01:02] Our first episode will focus on setting the scene, understanding where we are and how we move forward. In our second episode, we will dive into a bit more detail about the workforce foresighting process, how it works, and how people can get involved. And in our third episode, we will walk you through a practical example, focusing first on the renewable sector.

[00:01:26] My name's Emily Brennan and I am the communication manager and host for the Workforce Foresighting Hub podcast.

[00:01:38] We have some members of the Workforce Foresighting Hub team with us today. Thank you for joining. We're going to discuss, first of all, the general challenge of the skills situation we face, how we're going to move forward with it, where we are now. But first, let's meet the team. So, John, would you mind introducing yourself?

[00:01:53] Okay. My name's John, John Lanham. I've been working on the project for about the last five years with Paul. Prior to that, I was 30 years [00:02:00] in higher education, background in skills and that sort of area. Okay. I've touched base with Paul many times over the years and, yeah, four or five years ago he made me an offer.

[00:02:10] Excellent. Paul.

Hi, I'm Paul Shakspeare. I am an engineer. I've spent the last second half of my career working on how we train and educate people in various fields and that led me to bumping into John. I've been involved with the Foresighting Hub since before it was thought about and now act as a consultant to help the Hub deliver what the opportunities and promises might be.

[00:02:35] So let's go on with our first question. And John, we'll come to you first. So what is the skills challenge we are currently facing and why is it so important to be proactive?

I suppose there's a number of different facets, but I suppose from where I sit and my experience is we've got Aging workforce in a number of different areas, so people retiring, moving on, changing.

[00:02:58] We've got rapidly [00:03:00] changing technologies, so take electrification coming into vehicles solar, other, other, other areas where we need to up skill, cross train re skill existing members of the workforce. Some of that is just adapting slightly what they do, some of it is radically new.

[00:03:16] Digitalization. It's coming into the world in so many different ways. So it's how do we equip the workforce to respond and react to all of these changes. Some people say, oh, well, we'll go and recruit from elsewhere. But in reality, that's probably more difficult than people realize. And it's, it's how do you upskill and grow your own people?

[00:03:35] I think that's probably the biggest challenge. Working with what you've got, they know your sector, they know your industry, but you've got to give them new skills and new capabilities.

Yeah. Brilliant. Paul, do you want to add to that?

Well, I think the skills problem is we don't know what the skills problem is.

[00:03:51] Is it the fact that we're short of skilled people? Or is it the fact that our people are short of skills? And they are quite different things and require quite [00:04:00] different answers. The second one focuses on the asset, which is the workforce. needing re trilling, re skilling, re training, and re skilling throughout its life.

[00:04:10] The first one might be about initiating people into work. So, we need to understand what the problem is and have a common language that describes what the problem is, not simply keep making broad statements. We need 20 percent more people in this industry or that industry by tomorrow, and isn't it a disaster?

[00:04:27] I think the other thing about the skills problem, we don't know what it is, is because people need to absorb the skills problem into their own orgs, into their own organisations, not pretend it's somebody else's problem. And what's the risk if we don't do anything about this? The risk is that we don't have sufficient people to fulfil the roles that we need for our own infrastructure, but also our industrial and economic success.[00:05:00]

[00:05:00] Who's responsible for addressing the skills challenge? Well, I guess the formal answer is government. And they would then say industry, and then industry would then say employers, and then employers would say individuals need to do it. So it's everyone's responsibility. Unfortunately, not everyone has a, an opportunity to address that responsibility.

[00:05:25] So it's a shared problem, which we all have our role in filling, but in order to do that in an effective way, we all need to be using the same hymn sheet. You know, what is our shared ambition? So one of the things, the degree of collaboration between employers, between academia, such as John's old mob, and government policy and strategy and funding.

[00:05:47] So there's a need to, for everyone to accept it's their problem, but within a structure they are dependent upon others to resolve.

Yeah. John, would you add anything to that?

Yeah, I think it's also about trying to [00:06:00] get clarity about what the skills, what, what the need is. So often I've saw through my career, what I would see as probably supply side development.

[00:06:09] So, education provision, colleges, universities, or individuals would say, oh yeah, I want to teach, I think people need to know about, because they could see some value or felt it was important, or, you know, type approach, et cetera, which is great at one level because that's where some innovation can come, but often that doesn't necessarily align with what the pull from industry is.

[00:06:29] But then in fairness, sometimes industry isn't always aware of what it actually needs. possibly looks a little bit too much in the short term about this is what I need, you know, this month. Whereas actually some of the things we're trying to address are what, what you need over the next six months, year.

[00:06:45] And also if you've got emerging technologies, some companies, some situations may not necessarily be fully aware of where they need to go, what are the technologies they need to acquire, hence what are the skills. So I think as Paul said, it's about how you [00:07:00] get those the various parties working collaboratively but trying to do it in a way that we've got a common language and a common structure and a common approach.

[00:07:06] Yeah. Not an easy task. Nope. Nope. And I think one thing I would add into that debate about skills, is not for people to hear that word and think it means apprenticeships, or someone working on maintaining vehicles. Skills apply from, the bottom to the top of the range of jobs. We need people in research institutions with the right skills.

[00:07:30] We need people with the right skills in third, fourth, fifth, Third sector jobs. So, so skills are a universal issue which we need to resolve from top to bottom, not simply apply for more apprenticeships or, or simple solutions like that. We need to be more creative. We need to be more creative and more inclusive.

[00:07:48] And I think one of the things that also comes out of this, and I'm beginning to, to wander here, is, is the impact we can make on equality and diversity and inclusiveness by [00:08:00] understanding how everyone can contribute to the future requirement for those skills. Absolutely. It's a good point. Now, I know you've both been involved in various studies over the years and have experience sort of looking at what other countries around the world are doing to address these topics and this, this challenge, which is a global challenge.

[00:08:18] What are some of your reflections on your experiences looking sort of wider than the UK borders? You did the travelling. Well, I'll, I had the holiday. The study tour, which we were really fortunate to undertake with the High Value Manufacturing Catapult, supported by the Gatsby Foundation and working with others such as TWI and the National Physical Laboratory, was really an eye opener for me, because it, one suspects these things are occurring, but going and looking at them and trying to understand them is really interesting.

[00:08:49] But one of the really key features from looking at other countries is other countries have a department of manpower, a department of labor, you know, and, and if you take the, perhaps, extreme is the wrong word, but, but outlying case of Singapore, their whole industrial strategy is, is founded upon their major asset being the workforce, not the people.

[00:09:18] minerals or not power generation. It's about the workforce. And that really highlights the fact that if the workforce isn't continued to be developed with the right skills, what should be an asset becomes a liability. And you could argue we perhaps have been in that case in the UK as reflected by the decline in relative productivity figures over the years.

[00:09:41] So, so I think that's the thing that struck me. And from that thought, very much. comes all the work that followed from that study, which was to say, how do we in the UK, who are unlikely to have a ministry of labor, how do we create the functions and the connections that provide the benefits of integrated [00:10:00] thinking?

[00:10:00] So I think the message for me from those study tours was integration of thinking, collaboration of outputs, collective purpose, get ready for the future.

[00:10:17] If we start looking to sort of taking sort of inspiration from what's happening around the world and, and the work that you have been involved in both of you, what is a solution, one of the solutions or approach to solving this problem? If I kick off and then John you take on the foresighting part, but following on from my little rant is something we proposed to illustrate how the answers might come together for our context, which we christened a skills value chain And we produced it to allow us to, to use a diagram to explain the different steps that are needed from where a new technology emerges [00:11:00] to where, and it's extraordinary in the work in Collier who was very much part of what we did, it changes from the extraordinary to the everyday.

[00:11:09] And if we don't plan for the skills required to enable it to become everyday, it won't be everyday in the UK. And there are examples of that in the past. Nanotechnologies are the one that stick in my mind. You'd be hard pushed to find nanotechnology industries in the UK. Other countries developed the skill sets and took them, Germany, the States, and so on.

[00:11:30] So, so it's about having an understanding about how different organizations play a role in the skills value chain from the first part, which I'll pass back to John in a minute, of understanding. what future skills needs will

be, through to bringing those into occupational standards structures so they can be used by everybody, bringing them into qualifications and recognition structures, I'm sure we'll talk about Lego bricks at some point, bringing the need to train the trainers, [00:12:00] teach the teachers, educate the educators in this new technology, and then be prepared for scale up.

[00:12:06] If we try and go straight for scale up, we'll trip over our shoelaces again. And not achieve it. So I think it's really important that we have this approach throughout, but that approach benefits from the understanding that the organizations such as the Workforce Foresighting Hub are trying to bring together.

[00:12:22] Mm hmm. So I'll pass the ball to John at that point. Yeah, and I think for me, key in the approach and that first step about foresighting came off some early discussions with Paul about given a challenge or a technology, so you want to. You want to roll out nanotechnology, you want to roll out graphene, or you want to look at electrification, or whatever it may be.

[00:12:44] First thing you have to do is, and many, many approaches jumps then straight to, okay, what are the skills required across the workforce? So we need to sheep dip everybody in a bit of nano or whatever. Whereas the approach we took with foresighting was to say, understand the challenge, then [00:13:00] understand the supply chain.

[00:13:01] How are the businesses in the supply chain going to have to change? What does that mean at an organisational level? Then you can work out what the workforce requirements are. Then, as Paul says, you go down the other steps of the skills value chain, about training, developing material, and other things of that sort.

[00:13:19] But that key point It was his idea, was this point about, given the challenge, how is the supply chain going to have to change? What are those changes in capability that are required in order to deliver that technology? Do you need to bring in new supply chain partners? Are there different organizations?

[00:13:37] Are there different sectors you need to work with? Understand that, then you can begin to work out what the impact on the workforce is. Okay, so it's, it's looking at a challenge that's Which is brought about by technology or innovation, how that impacts organizational change, and then how that impacts the patients.

[00:13:56] I mean, the challenge, it's the other way around, because the technology is [00:14:00] a, is a response to the challenge. Okay. So the challenge is net zero, is zero emission cars, etc. Okay. So that's the challenge. Which either might be national policy, might be an economic situation, so recent problems with Ukraine, et cetera, will have driven responses to a challenge about energy or whatever.

[00:14:18] Okay, there are then a range of technological options, wind, solar, whatever. Okay, you can then, having identified, we think this technology is possible, feasible, then you can work through the process and understand, okay, if you accept the challenge, if you adopt that technology, You can then identify changes to supply chain and then changes to workforce.

[00:14:39] Okay. And I think John talked earlier about some institutions promoting their own views about what was needed by way of skills and, and you might typify that as a build it and they'll come approach or field of dreams approach. By taking the step of looking about how organizations change capabilities to remain [00:15:00] in their competitive position.

[00:15:01] Hmm. you're also looking at future demand. So we're linking demand into the whole process right from the start, rather than anticipating an unknown demand. Now what we can't say in foresighting and won't say is how many people will need the skill sets. What we can say is what skills they will need if that challenge is to be met.

[00:15:23] And that is something which I think is different because historically we've gone back to look at previous occupations. The wrong questions have been asked of the wrong people. And so we have a self sustaining, backwards looking model. Whereas the model that John described enables a forward looking I'm going to nick John's words, over the hill type model.

[00:15:43] Okay. Whereas at the moment we're still stuck in the foothills.

[00:15:53] So that sort of gives me an extra idea about how the skill chain, skills value chain works which is brilliant. And then we've gone [00:16:00] into a little bit of detail about the foresighting process there again, which is that, that starting point of the skills value chain. Could you sort of summarize the process, the workforce foresighting process, how that works for the audience?

[00:16:13] So. Our starting point is a challenge, so you say reducing emissions or whatever, we've done one, we've done them about changing production rates

for RNA vaccines, other challenges, so you have a challenge. We then sit down with a, Center of innovation, maybe a catapult, university central, whatever.

[00:16:37] Understand what are the technology options, what are the solutions to that challenge. Go through a series of processes discussions to try and refine that down so we can identify a reasonably well bounded case around, okay, we are going to look at technology X as a way of solving that problem.

[00:16:54] We then work through and we've structured our approach to work with three [00:17:00] participant groups, as we call them. So we have technologists, we have what we call the employers, and we have the educators. The technologists are the ones where we sit down and say, Okay, given this challenge, given this technology, technology, what are the capabilities that are required across the supply chain to deliver this?

[00:17:16] So it might be designing it, making it, using it, supporting it, whatever, okay? And we then work through a number of workshops with them to identify what a future supply chain might look like. We then sit down with what we call the employer group. We represent the workforce, training people operations people, and say, Okay, given this set of capabilities, how do we map them onto the workforce?

[00:17:40] Okay, which part of the workforce needs to be expert at something? Which part of the workforce, this capability may not be relevant? Or is there something where we need to, Give everybody a bit of an awareness, digital cyber or something like that, etc. So we work through some workshops with the employer group to understand this alignment of the capabilities with [00:18:00] future groups within the workforce.

[00:18:03] We then have a mechanism where we integrate the data we've got and the responses we've captured. And we actually feed back to the employer group some suggested possible future occupations. We then work with the third group. the educators and we ask them to draw on their expertise of the subject to tell us what are the underlying knowledge and skills that someone needs in order to deliver that capability.

[00:18:27] We then integrate all of that data together, extensive use of large language models. In the old days, I used to do it by hand and as Paul says, a lot of coffee. But from very early on, I realized that Large language models, AI, pattern matching, et cetera, was what those tools were good at. So we've developed a set of tools and methods, and we make extensive use of those now, so that we take the future set of capabilities and profiles that we've generated,

compare them with a reference set, in our case we use the iFAQ data, so we can understand, Are there current qualifications, [00:19:00] apprenticeships, or training programs out there that meet the future needs?

[00:19:03] Yeah. Okay. Or are there some gaps? And one of the advantages of using AI and the machine is of course it looks across the whole set, all seven, eight hundred standards. So you may find there's a relevant part in a qualification in a completely different sector. There's a part of that actually is applicable and relevant.

[00:19:20] And we have found that in a lot of cases that stuff is borrowed across from other sectors. Okay. Okay. Okay. And then. And the key point to come out of that is that we produce insight, which we then provide back to the group we work with and say, okay, you know now what to do with your supply chain. You know who your partners are.

[00:19:40] You know who to work with. You've got to go away and take action. We can give you some insight. They then have to. Okay. So, so the, the, the language we summarized all of that in is that our job is to understand Okay. and explain to others why things are going to change. In other [00:20:00] words, can't stay as we are.

[00:20:01] Yeah. And therefore what skills will change and where the likely need for action is given the gaps in the current provision. It's really quite a simple concept. We're passing over insight into the why, understanding of the what, but what we can't do is say, well, you need to do a training course in this way or that way.

[00:20:22] Okay. Because of course the training intervention depends upon the people who are being trained. They need the skills but their main means of getting there will be different depending who they are. Okay. So this is why the skills value chain becomes important because that information is passed from our understanding activity to the people who have the expertise to perhaps forecast how many numbers, where they're going to be, when they're going to want to happen.

[00:20:47] Yeah, that makes sense. And it's very important. that the partners who are in this exercise understand, accept, resource and fund that role. And that's quite a [00:21:00] cultural change. Okay. So one of the things we need to work with the stakeholders, the government stakeholders, industrial stakeholders, the academic stakeholders, is how they want to receive that information, how they can act on it.

[00:21:12] The one thing I think is different because of the large language models and the use of data. You know, what John didn't introduce was the fact we're working with global occupational standards. We've ingested all of those. As the amount of data we can produce, in what historically has been a data free environment, is enormous.

[00:21:32] So we can almost, John will kick me under the table here, we can almost write the learning objectives, the curriculum, of the gaps. Wow. Mm hmm. Mm hmm. Now that's a big step forward because technology has finally allowed the two of us to do what we've dreamt about doing over the years. I think it's that classic example of solutions are possible when the technology emerges to a particular point.[00:22:00]

[00:22:00] Five years ago we probably couldn't have done this because you, you know, the availability of cloud databases, large language models, the tools and all the rest of it. The cost of delivering that and searching that space is relatively cheap. I think one other point I would say is that where our approach intersects very effectively, so discussion with one of the partners we've worked with on, on one cycle, and they'd commissioned a 20,000 foot helicopter view sector.

[00:22:29] skills review, and it came back and told them, you know, you need 20, 000 engineers, okay, in the next five years. What it didn't tell you is what those engineers would need to do, what they'd be like, etc. And here is a good intersection of the horizon. We give a very forensic detail dive, which then says, okay, of those 20, 000, 5, 000 of them are going to have to probably look like this.

[00:22:51] Okay, and here's the skill set. And also, then we're able to say, and they feel starting point is this. Okay, these, this is the, this is the delta, this is the [00:23:00] extra bit you're gonna have to pick up in order to deliver that. So I think, again, one of the problems, so much of the skills work to this, to date, in a lot of areas, is all about full qualifications.

[00:23:11] Yeah. Whereas, of course, an awful lot of people that we need to upskill are already in work and doing work, and it's about how we top up and adapt what they've got. Okay. And I think John talking about that forensic view leads into another. Another comment, really, which is that in order for the exercise we undertake to take the benefits of experts and provide evidential conclusions, we need to bound the exercise.

[00:23:36] We can't just spoil the ocean. But what we expect to find, and indeed have already observed, is the trends that emerge from the multiple data sets.

And they are really valuable because those trends will reinforce the need to have more analytic education, more, more ability to, to question AI or whatever it is.

[00:23:58] But we'll be able to look at those [00:24:00] trends relatively soon now, and we need to start designing our foresighting applications so they fill gaps in our understanding. Yeah. Not perhaps being about where we do things.

[00:24:19] So can you talk a bit more about sort of the collaborative approach that we have with the Workforce Force IT Hub process? So I think, harking back to some of the points Paul made earlier about the complexity and the challenges of bringing the different groups together, I think one of the things we've achieved through the Workforce Hub project is creating a collaborative platform, a mechanism where we can that enables the different groups to come together.

[00:24:41] So the different constituencies be the technologists, the employers, and the educators, each looking at these issues through their own lenses. But the workshops and the data set and the methodology we've developed enables us to integrate their views, ask the experts so they stay within their domain. So the [00:25:00] technologists are looking at the technology, the domain, the data set.

[00:25:02] The impact on the supply chain. We're not necessarily asking them about the skills issues. We're just saying, okay, what are the technology requirements? And so forth. We work through in that way. So we can allow them to be comfortable in their space. and talk about the things they understand and they're expert at, but we can then integrate that data and feed back to them how, given your collective responses and the data structure we've got, this is then the insight that we're able to feed back.

[00:25:29] So it enables the different, different groups to speak the language they want to speak, but we integrate that into a common currency and a common format. Okay, yeah, that makes sense. Just to sort of finish on, you know, This is a fantastic initiative and clearly provides some great benefits to the UK as a whole and to individuals involved in the process.

[00:25:50] But can you just maybe elaborate a little bit more on sort of why people would want to get involved? I come right back to one of the reasons we did the initial [00:26:00] study tour, which was an awareness that we, for a long time, this country was poor at developing and implementing. new technology and innovation.

[00:26:11] And the catapult initiative has been a very solid answer to that. It bridges a valley of death between university research and industrial applications. I think there was a an an awareness very early on in that process of, of looking at innovation. That perhaps we needed a workforce that could do that.

[00:26:30] And we would then, you know, we, we reinforce that by saying actually the purpose of looking at the skills that we're looking at are to anchor the benefits of that innovation in the UK. Quite shamelessly, why would we spend a lot of government money on developing technologies for industry unless they stayed in the UK?

[00:26:48] So we see the workforce as providing an anchor to that. And if the workforce is anchored in the UK, then of course. higher skilled jobs, higher paid job, better jobs, more jobs, all of those [00:27:00] things that come off from a social consequence. But also, as I said earlier, it will address the diversity barriers because we're looking for modular upskilling.

[00:27:09] We're looking for changes that relate to people's wish to re enter the workforce. There's all sorts of things like that. So I think the benefits really are to do with anchoring the outcomes of innovation in the UK through the workforce being the right sort of workforce. We say on each of our slides, right skills, right time, right place.

[00:27:27] And that's what we mean by that. I'm Emily Brennan. Thank you for listening to the Workforce Foresighting Hub podcast. If you would like more information, please look at the podcast show notes or visit our website and follow us on LinkedIn. Thank you very much.