

**UK Trade & Business Commission**  
**Protecting UK Manufacturing in a Global Supply Chain**

27 January 2022

**Paul Girvan MP**

Thank you all for logging in this morning, we hope we have a good session and an opportunity to identify and highlight some of the areas in relation to UK manufacturing and the global supply chain and how we as a nation play a part in that and how we can continue to be a player or increase our opportunities for the future. And with that I want to thank our witnesses for coming along this morning, we have two panels and we're going to take an hour for each panel. We have a series of questions that we want to go through. We would ask that we try to stick to that as much as possible, but I'm going to ask the panellists maybe to give a small one-minute profile, so everyone is aware who we have on to question this morning.

**Jill MacBryde**

Hello everybody, my name is Jill MacBryde, I'm a Professor of Innovation and Operations Management at Strathclyde University. I've worked with manufacturing over about 30 years. Right now, I am co-director of Interact which is a network funded by ESRC and it's part of the Made Smarter family and it's all about trying to bring in knowledge and expertise we have in the economic and social sciences to help build a stronger UK manufacturing base. And I'm also doing a project that's looking at the impact of Covid on UK manufacturing and the importance of innovation going forward.

**Jack Semple**

Many thanks Paul. Jack Semple is my name, good morning, everybody, and many thanks for the invitation this morning. I run the Engineering and Machinery Alliance of ten trade associations working in the machinery and components supply chain. So, we represent firms that make for example and supply machine tools, mouldings, handling and processing equipment, automation and control systems, fluid power and air systems and air compressor systems. So, as you can imagine we work right across the economy from space and aerospace to oil and gas and food and automotive, rather than a particular silo or sector. Export and trade is very important to us and I like to think of us as trade associations as communities of capability which is really important in the current context and obviously, we are keen to see UK manufacturing advance.

**Paul Girvan MP**

Apologies, you think you'd be learning this by now. I don't see Dr Carmen Torres-Sanchez.

**Carmen Torres-Sanchez**

Yes, good morning I'm here, thank you for inviting me, thank you. I'm Carmen Torres, I'm the Research Lead in the Multifunctional Materials Manufacturing Lab at Loughborough University and I represent an academic school who work at low tier levels that can support manufacturing and the manufacturing sciences in terms of material science, in terms of data, communications, instrumentation for the different machines and machinery that can enable manufacturing and particularly productivity in manufacturing. And I also represent those of us who educate the manufacturers of the future, those of us who are involved in the skills and the attitudes and abilities that we are going to need in the manufacturing in UK in the next five, ten, 15 years. Thank you.

**Paul Girvan MP**

Thank you very much indeed. I want to move on then to Simon and if Simon Collingwood would give us just an update.

**Simon Collingwood**

Hello there, just very briefly my name is Simon Collingwood, I'm Head of External Relations at the University of Sheffield Advanced Manufacturing Research Centre. We're a 20-year-old research centre, we're part of the High Value Manufacturing Catapult, we work with over 120 industrial partners from large OEMs such as Boeing and Rolls Royce through to nationally and regionally placed SMEs. We really focus on supporting companies to make their products better, to make their processes better, to make them more productive, more competitive for both national and global markets.

**Paul Girvan MP**

Thank you very much indeed and thank you very much for coming along this morning. I'm just going to kick off with the first question and we did have a table within our questions which was, and there's already been reference made to it within our pre-session and that is to do with manufacturing and the decline in manufacturing, but I'm just going to ask the question, how important is manufacturing to our economy and is it growing or declining because recent trends have shown us over the last number of decades manufacturing has been declining within the UK and I'm wondering is that something that is going to continue or is it something we can build upon. Thank you. And I just ask that basically if everyone wants maybe to make a small comment on it or if you feel it's not relevant you don't need to answer on that if it's not in your area of expertise, but I'm just saying we'll adopt that approach through the session unless somebody wants to direct the question to one individual, OK, so Jill, OK thank you.

**Jill MacBryde**

Well I'll start off by saying yes I firmly agree manufacturing is essential for our economy, you know I think apart from the kind of the money and the jobs it creates it's really important for innovation, it's a huge driver of innovation and we know there's a big link between innovation and economic prosperity, so for me you know I think the UK has this aspiration to boost investment in R&D to 2.4% of GDP and I think manufacturing is the largest contributor to R&D expenditure in the UK, so for me I think manufacturing plays a big role in that particular part. Is it declining? Well, I think when you look at the statistics it does suggest that, but I don't think statistics tell us the whole story. Very often the statistics we're looking at is the percentage of it contributes to GDP and yes, you know we're now

down less than 10% and back in the 70s we were closer to 25%. But it's not necessarily that manufacturing is contracting, it may be that other areas of the economy are growing. So, the jury is out on that, I'm not an economist but I certainly don't see a depressing picture of manufacturing.

In fact I was chairing an Interact event yesterday and one of the speakers likened UK manufacturing to being in its Spring and I liked that, being a gardener I liked that analogy but I think we have to say that the seasons are quite long, but his point was that we're coming out of a winter that's been harsh, we've got Covid, we've got Brexit and the new kind of environment is very different and we've got to feed it in a different way, so the things that I think are important are looking to the future and when I talk about the future I'm talking about the longer-term future about what kind of manufacturing do we want to grow. Again, as a gardener you've got to think about that long-term vision, it's not all about the next six months, the next year. So, I thought I liked that analogy and I think that's one of hope, so hopefully we'll pick up on that again.

### **Jack Semple**

Paul, can I just add I think it is a critical time for manufacturing, it's a critical time for the economy and certainly from our members' perspective the two are very closely linked. While we're 9% of the GDP there's some very good reports on this subject the last two or three years, we account for something like 23% of the economy through indirect and induced impacts and I think that point and the importance to other high value elements of the economy from marketing downstream to R&D upstream has been very well mapped, but I think we've really got to, we're at a pivotal point, we've got to get under power because the technology and the markets are changing quickly and I think we've got to turbo-boost a little bit because at the moment we're 24<sup>th</sup> in the World for employee for adopting robots and we're only 6% of the European market for automation. So yes, there's some really bright spots but I think overall we've got to get moving a bit more strongly.

### **Carmen Torres-Sanchez**

Something that I would like to add supporting what Jill and Jack have said is what we identify as manufacturing, it is the concept of just being large manufacturing so cars being put together, aerospace, there may be some reports as I say that that is declining. However, we really need to consider which other technologies and which other enabling technology and services are around manufacturing that also should be counted as manufacturing. And I'm talking about the design, I'm talking about the electronics, the intelligence software, the packaging integration of those services, or even the material science. And those areas are definitely blooming and growing in the UK, and they all are there to support manufacturing, so they are also part of the manufacturing sector. And having the right resources, not just in terms of machinery and what we can build but also the brains that can make the most out of those resources is very important and I do think that the UK is top class in the World in terms of educating our engineers and manufacturers of the future, so from that perspective the future is very bright.

### **Paul Girvan MP**

Thank you very much indeed. Simon.

### **Simon Collingwood**

Yes, if I can just offer a couple of comments Chair. I think that sitting here in South Yorkshire the scars of de-industrialisation are very alive, like they are in many places around the UK and what I would say is that what I see is actually a very optimistic position, here in the Sheffield/Rotherham border we've seen the development of a cluster of advanced manufacturing companies that have been magnetised to the area for skills and for capabilities and of people like ourselves as well and the universities. One of the things which I think often gets missed when looking at manufacturing is the very important regional and place-based elements. It's very easy to look at the importance of manufacturing from a point of view of what's its GDP, what's its GVA, how many people is it employing, but actually it has a really important part of how people identify with a place. And I think one of the important things for me for manufacturing is how people just working on this advanced manufacturing park where I sit now, people really identify with being part of the manufacturing sector, sitting in part of the aerospace sector is parts of people's identity in much the same way as perhaps mining or steel was some years ago. And I think that's a really important part of how people feel that they're connected too, for wider economy. And I think having worked in the services sector at various points in my life, that doesn't happen in the same way in the service sector as perhaps it does in manufacturing and I think part of that is that manufacturing invests in R&D, it invests in its export capability but it also invests in its skills and its people in a way that the wider services sector simply doesn't.

**Paul Girvan MP**

Thank you very much indeed, I take a positive approach from what has been said instead of seeing dark clouds on the horizon, I want to see a sunrise, thank you very much indeed. That leads me on then to our next question and that's coming from Claire, and Claire is one of my colleagues from Northern Ireland, we bat quite strong on this committee from Northern Ireland. So over to Claire. Thank you, Claire.

**Claire Hanna MP**

Yes, we're getting all the Northern Irish MPs out of the way at the start. Thanks very much, I just wanted to ask, Government has invested in manufacturing recently, how would you grade that investment and what impact has it had? Carmen I'll start with you if that's OK?

**Carmen Torres-Sanchez**

Thanks very much. The best example that I can think of has been the most recent one which has been the investment in the manufacturing of the vaccine, that has pretty much saved our lives in many ways and has touched everybody's lives. And the effort that the Government has had in manufacturing that has been top class. High value manufacturing catapults as a way of crystallising that investment in the manufacturing in a broader sense, not just in the pharma but also in the automotive and the food and drink and the digital technologies, that perhaps has been less bright and sparkly in the sense that from my viewpoint I think that there is a disconnect between the bottom up approach and the top to bottom approach and perhaps a stronger leadership to make that continue and come together and be more powerful and more impactful should be necessary.

Another aspect to the conversation here has been the investment that Innovate UK has put in particular in the SMEs, small and medium companies that can go forward with proposals to get a bit of money from Innovate UK to do their work. My experience working with them, and they are the majority of the companies I work with they are SMEs, is that they are in a continuous game of chasing the money, gaining the money and then going back to the drawing board with very little time

to actually sit down, focus and do the work. Those proposals, those projects tend to be rather short a year, 15 months, 18 months are they majority of those and as I say they are constantly in that game of chasing the money, not leaving them the time to sit down and truly be productive, squeeze the lemon as I say to the maximum. So, I wonder whether we could take the learnings from this successful story manufacturing the vaccine, the BioTech and re-engineer how well that went to then export it to other sectors that perhaps need that much impetus, like the automation and electronics and the digital technologies, food and drink as well, we must remember food and drink is also a very important player in manufacturing, so that's my viewpoint from where I sit.

**Claire Hanna MP**

OK thanks very much. Jack have you anything to add to that in terms of assessment of advance manufacturing investment.

**Jack Semple**

Yes, thank you. Picking up on Carmen's point about the pandemic. I think it taught us three things. I think it taught us about the importance of manufacturing. I think it taught us how little Government knows about the UK supply chain and actually I would include a lot of OEMs about that as well which is another important issue, and tier ones. And I think it showed that we have great strengths in UK manufacturing, but also gaps and we need to find out more about both. But I think given the importance that we would see of manufacturing to UK economic recovery and sustainability and taking a lead in net zero and all those things. I think the Government really has to come out much more strongly and explain what is its view of manufacturing. So, the Government gives a great deal of support in terms of upstream R&D and innovation, the Catapult does a terrific job and other research organisations, but there's another aspect to that and that's what's happening on the ground at companies. So, technology adoption, skills development and here the Government has not been investing nearly enough and we really need to hear more about its intentions in this area.

So the high value manufacturing Catapult has a vision for manufacturing to double its contribution to the UK economy by 2030 which is quite an ambition but I think we need to hear more about what the Government thinks about that because in comparison what it's doing elsewhere and the support it's given through Covid to other sectors they are not investing nearly enough I would suggest. And what is the point about manufacturing that makes it so important compared with other sectors. Manufacturers tend to compete on the global stage and once you lose the jobs, the IP, and the taxes they are much more difficult to re-establish than other sectors, so that fault line about how do we get the R&D down to companies is, that is a fault line in Government policy at the moment.

**Claire Hanna MP**

Thanks very much. Jill, you were nodding along there, how do you think it has impacted certainly on the process and performance areas you look at?

**Jill MacBryde**

I think I agree with everything that's been said but I like the fact that people are talking about long-term, they're talking about systems. To me something I say a lot is it's not all about the technology and I think we're investing well in the technology, and I think the UK is well-respected for its science and technology base. But it's doing something with that that brings economic and social

benefit. You know when we look at history it's not always the technological innovator who wins the prize if you like. You know if we look back at cars, it was Henry Ford saw the potential of bringing that system together for economic and social benefit and even modern day I guess, Amazon or Jeff Bezos, it wasn't the technology winner, but he saw the potential to put the system together. So I like the fact that I think UKRI is much more joined up these days, I think they are starting to talk about systems and as I say we are starting to look at, it's not just the technology but we also have to think about the change management, the people, the behaviours so that's my kind of view, I think we're in the right direction but we need more of this joined up and working together.

**Jack Semple**

And if we look at the Made Smarter programme for example what's needed is a national sustained programme and what's we've had is a regionally restricted piecemeal drip feed, as just one example. Absolutely agree, and we can see other competitor countries that are doing this and are benefiting as a result and their tax revenue, and their competitiveness has benefited.

**Claire Hanna MP**

Simon, you've maybe been on both sides.

**Simon Collingwood**

Funding is there, you know perhaps we can argue about the quantum of it and perhaps some of the application of it in its effectiveness, but I think that there has been significant amount of funding. The gap for me has been the industrial strategy to really give us a coherence about where we want to go as a country. We saw the innovation strategy launched last year but at the same time we're not seeing the clarity of direction and I think what really sort of backs that up when it starts to hit the ground is I think something that Jack and Jillian both pointed to which is short-term funding cycles, you know we don't have long-term funding pieces which provide the opportunity for firms to invest themselves in their capabilities, in the skills that they require for the future. So, there's a mixture of the lack of strategic piece and then how the funding is being directed to the sector on the ground.

**Claire Hanna MP**

Thank you very much, Chair back to you.

**Paul Girvan MP**

Thank you very much indeed and I thank the panel for those answers. That leads us on to Anatole and I think you might have something which is very topical relating to how costs can impact upon your opportunities to move forward as well, thank you.

**Anatole Kaletsky**

Yes, well Jack mentioned the ambition for British manufacturing to be a leadership sector in the net zero process all over the World. Maybe starting with Jack, how well placed do you think the UK is actually to play a major part and lead this energy transformation and to what extent do you think

rising energy prices are going to affect the manufacturing industry both as a threat but also as an incentive and also if you have any views on this perhaps you could refer to how Britain's decision to be outside of the European Union and the European NextGen Recovery Fund is likely to affect British leadership towards net zero.

### **Jack Semple**

Thank you. I think the industrial strategy first of all, this industrial strategy point that Simon made is important. If I could answer the point about energy costs, I think there's a real paradox here because in the high energy users they are ... the high energy users, even those who are looking to invest in lower energy production are looking for lower energy costs. So, we have to find a way of reducing energy costs to industry and in manufacturing they can be a really important part of costing global competitiveness. In Europe we have from industry's point of view just about the worst balance between domestic and industrial energy costs and that's a real issue for retaining jobs in this country. So yes, we want to drive green energy but we can't get to the position that we say well you've got to be green, there's a paradox there, if you get to a position you've got to be green because then we have something which is euphemistically called carbon leakage which is the jobs just go to abroad to areas which often are much dirtier in terms of carbon.

I think in terms of the preparedness for net zero, it gets back to what is the skills level in terms of process and technology adoption and development and the ability to attract investment in UK manufacturing. Because if we can get the knowhow into companies then we're much better placed on net zero. We have got a greater awareness of net zero I believe in the UK than in almost anywhere else in the World which is great, and Government deserves credit for that because they've worked hard to create that and with the support, I have to say of trade associations. But where we're going to go from that, I think we need to see stronger regulation from Government, regulatory leads and to take business with them. And it's very important to think about the supply chain rather than the well-known large companies.

In terms of our relationship with Europe, I think that's a massive issue, but I think there's a lot that the UK has to contribute to the discussion with Europe and other partners, but Europe specifically. I think we've got a lot of knowhow in this area in terms of standards and how regulations can evolve, and I would hope that we would keep our communications channels up to Brussels live and active as well as to other parts of the World.

### **Anatole Kaletsky**

Thanks. Simon, I saw you nodding quite enthusiastically at part of that. What would be your comment?

### **Simon Collingwood**

On energy costs it's clearly something that is a major factor for some significant manufacturers across the country, both large and small. I think our relationship with the EU, it's clearly a factor but in the small world that I operate in I think it's not something that crosses my door a lot in terms of commentary from industrial partners. In terms of your wider point about the capabilities of the UK to embrace the low carbon transition, I think that's where I'm very, very confident and I think that the phrase that was used recently in a meeting I was in with a number of industrial partners was that actually the capability of UK manufacturers to drive and thrive in the low carbon transition is really second to none. It's a question of whether or not there's the support and the funding to be able to

enable them to do that. You know I look around my patch and whether it's on sustainable aviation fuel, whether it's on hydrogen, there's incredible work being done and indeed on electrolyzers as well just down the road. So, there's a lot of optimism there but it's about the coherence of the narrative and a long-term approach to this. I'm personally very optimistic and tend to see net zero as being a potential pathway to re-industrialisation of the UK, but I think that there's a lot of steppingstones between that vision and where we are at the moment.

**Anatole Kaletsky**

Very interesting, Jillian and Carmen anything to add, I think we're running out of time.

**Jill MacBryde**

Not much on the energy front but I would say on the net zero, I agree that I think we are quite well-placed, but I think there are big shifts coming. You know I think there's a tidal shift I think in consumer choices, and I think Covid has also shown us the worry of bringing things, travelling across the World and disruptions and so on. So, it does worry me that you know when we talk about some of our big manufacturing sectors like cars and aerospace, you know with cars, eight out of ten cars are being exported and I think when we talk about the output of aerospace it's something like 90% is going overseas. So, when we talk about reshoring there are some opportunities I think for the UK, but there's also I think a lot of people in boardrooms across the World asking why are they manufacturing here and that does worry me.

**Anatole Kaletsky**

Carmen?

**Carmen Torres-Sanchez**

I just want to make a small comment about the net zero because our ambition really is to become net positive and the three aspects that I would like to mention, one of them is where we're going to get the energy and renewables, definitely it's a strong contender, lots of science and technology is being developed in the UK, tidal, solar, CO2 capture etc, that the efforts need to be joined up, so the efforts they've got in terms of renewable energies out there, they need to be harvested and harnessed to help manufacturing. The second aspect is in terms of instrumentation and control, so the one kilowatt of energy that we are going to use is efficient, 100%, rather than having a leaking pipeline so to speak. So, instrumentation that allows us for distance monitoring and to make sure that we fix what is broken in time, on time, not letting generators run in inefficient conditions. And finally, we've been talking about cars and large manufacturing sector but food and drink, electronics, those are quite high wasteful production manufacturing sectors as well, so we also need to tackle the first time right instead of thinking that the waste from those industries is cheap enough to just sweep it under the carpet, we also need to tackle those things. And if we're to bring those three buckets together, where we get more energy, how we make sure that all the energy we get is used efficiently and finally minimising waste that would be a good step forward towards net zero, but as I say the ambition is to become net positive.

**Anatole Kaletsky**



Thanks very much.

**Paul Girvan MP**

Thank you very much indeed. And we'll move swiftly on to Dr Charles Rose and welcome him to his first meeting as a commissioner.

**Dr Charles Rose**

My first question. As someone who has developed a manufacturing business, I've always been captivated by 3D printing as something which I saw as expediting the development cycle particularly in plastics and I just really wondered how well-placed the UK is in terms of these new manufacturing techniques, the additive manufacturing which obviously could add huge value and take time out of the manufacturing processes. And I'd like to push that to Simon in the first instance.

**Simon Collingwood**

Thank you, Charles, really interesting question. I think the additive manufacturing is an absolutely critical vital part of the future of manufacturing globally, the size of the market is projected to grow many, many times over coming years and I think that there's a few elements of it which I think are quite important just to kind of note here. One is that it has the possibilities of incredible light-weighting which I think will be really important for the route to net zero. And I think that also what it can do is move us away from you know mass batch manufacturing to much smaller personalised production, localised production which I think will be quite an important feature potentially of manufacturing in the future, very local bespoke manufacturing or whether it's a seal for something or you know a component for something.

I think that also one of the things I think will be really important for the UK is that when we think about some of the large infrastructure projects and indeed manufacturing objectives for future years, whether it's a defence programme like Tempest or whether it's large infrastructure, replacement of all bridges on British roads or HS2 or whatever it might be, is that 3D printing is part of how the procurement works through the system, so that we're actually thinking about the supply chain and the capabilities of this manufacturing mode for supporting some of those initiatives. We are as an organisation part of a zero carbon Humber project which is looking to decarbonise the Humber industrial cluster and I think that there's real massive opportunities for additive manufacturing around some of those initiatives. So, I'm really very optimistic, I think the UK has got huge potential in this area, but I think that you know there's got to be some incentives and drive to kind of really make sure that it lands properly.

**Dr Charles Rose**

Thank you, can I move that question onto Carmen, see what she has to say on this?

**Carmen Torres-Sanchez**

Thank you for that and I am going to be on the other side of Simon, I do agree with what he has said and tremendous opportunities 3D printing brings to small companies, to larger companies, but I'm going to play now the other side of the coin and there's all the challenges and the threats that we have in the UK as a country. Now again visually, so imagine a cake, three quarters of that cake is hardware, 3D printing hardware and from the one quarter that we've got left, let's divide that into three, one of them is materials, the other one is software and the other one is processing. That's sort of the market size. Those three quarters of the cake unfortunately none of that is in the UK. They tend to be German players, they tend to be American players, Israeli players. The market is not consolidated at all. Plenty of acquisitions and mergers etc. So, the UK is not a strong player in the hardware that definitely puts a risk, and we are always on the back wagon waiting for other countries, as I say particularly the USA and Germany to see what they develop for us to then use.

Now, in terms of the materials, remember the one third or the one quarter that was left, the UK is moving fast and is moving in a very clever way because thanks to the research base that we've got in terms of alloys and metals and material science we're able to contribute to the materials. One of the big drawbacks of 3D printing is a lack of a broad palette of materials to use, Charles you mentioned plastics, there are also metals and ceramics and composites that can be made in 3D printing. However, that palette as I say is quite limited at the moment. So, if the UK could make the most out of that, as I say making use of the research base that we've got in that field, that would be a great step forward, but equally what Simon has said we do need investment in that to move that forward and be competitive.

**Dr Charles Rose**

This sounds like this is the piece where you have the competitive advantage and actually build on that, is that what you're saying?

**Carmen Torres-Sanchez**

Correct, yes, that's right. One of the drawbacks of 3D printing is sometimes the mechanical properties of that final piece that in some cases is not as good as say a cast piece. But if we are able to have an R&D that moves forward those materials that make that final part, that functional product better, that would place the UK in a strong position. As I say we are less competitive in terms of the hardware, in fact we are not competitive at all in terms of hardware, but we could enter the game from a materials viewpoint taking advantage of what we know.

**Dr Charles Rose**

Thank you very much. Jillian, can you add to this?

**Jill MacBryde**

I think the only thing I would add is going back to my systems point and I think this is an example of a technology where we really need to kind of think beyond just the technology. You know we've all seen Star Trek and the replicators; you know we're talking about that kind of technology and it's the people who can make that leap and take the technology out of the factories and into our homes. I think there's huge opportunities there. You know there's social benefits, there's economic benefits but we've also got to think then about if we are going to be at the forefront of some area that develops it further, how do we then anchor some of the core bits of technology within the UK so that

we're making sure that we are manufacturing some of the things that are giving us these social and economic benefits.

**Dr Charles Rose**

Thanks. And Jack.

**Jack Semple**

Thanks Charles, just to amplify one point that Carmen made, I think there's a great opportunity for the UK to establish the reputation for quality in this area, because quality is going to be one of the issues that really matters in additive going forward and if we get the right foundations there in terms of standards and processes that could be a real advantage. But I think also there's a crying need in the additive sector for a broader understanding of its relevance, its capability and the role that it's going to play in the future. And I think that's something that we really need to work on, not only with the technology people and the engineers, but with the financial community, the FDs in companies and so on so that they can really understand what this is about and the potential for it.

**Dr Charles Rose**

Thanks very much panel for a really splendid set of answers.

**Paul Girvan MP**

Thank you very much indeed. Can we move on then to Geoff, I think Geoff is coming in on question number five?

**Dr Geoff Mackey**

Thank you very much Chair, much appreciated. I'm riveted at the positiveness of the panel talking about the opportunity in the UK, I think it's fantastic. From my perspective though, does large scale manufacturing like automotive actually have any sort of future in the UK or are we actually talking about a much more specialist and smaller scale production and I'll try and move away from any answer that involves integrated supply chains. Can we start with Simon on that one please?

**Simon Collingwood**

Thank you, a really good question. So we put together a panel a few months ago where we looked at prospects of jet zero [ph 0:41:12.8] and we had people from a range of companies speaking and participating in that and the answer that came through and bearing in mind that the aerospace industry in the UK employs around about 260,000 people, it's spread across multiple parts of the UK with some concentrations and it has a fairly significant supply chain both nationally but also globally and indeed the scale of R&D in the sector is phenomenal. Now, I use it as a sort of starting point because it's clearly a significant manufacturer in the UK, it's a significant part of our economy. The answer when we asked the question is jet zero possible was very much absolutely from a technology

point of view without doubt it's difficult, it's incredibly difficult and it will require a significant amount of investment in time and clever people solving problems. But it's absolutely possible but it relies upon an investment in reducing some of the risk of those investments over the long term. And for me it comes back to what is that industrial strategy. Is this something that our government and indeed our regional players, our regional governments want to back and support. Because I think that there is potential for large scale manufacturing in the UK, but I think there's a step before that which is what's the industrial strategy.

**Dr Geoff Mackey**

Jillian just to pick up the industrial strategy conversation and where it fits and just to throw a little additional in there, will we simply employ as many people or do the systems take over?

**Jill MacBryde**

Yes, I agree with what's been said. I mean you've heard my view that I think a lot of people are saying that we're moving away from the factory as being the focus of production and that it will be more distributed, it will be people working together in networks and quite a few of my fellow panellists have been saying similar things. But there are some areas where I think you do need scale. You know so for example if we're talking about our electric cars as we are, you know to make that happen we need the battery capability and the investment that's needed in these things, does mean that it has to be at scale. So, I think it's not an absolute no from me, but I do think we're probably looking at a more distributed system but absolutely what you're saying, I think having that strategy, that long-term vision and thinking not just about oh we've got this great technology but thinking about what are we going to do with it. So, thinking about the applications, working it back, thinking about then what's needed, doing this kind of road mapping activity and then that I think takes us to the point where we say what do we really need to invest in, what are the core things that will anchor the manufacturing and the innovation in the UK. So, I think that kind of call to try and not just come up with the next kind of drone or whatever that's going to work but think about well if we're going to go down that route, have we got the capabilities to make these drones if they're going to be so crucial in the future economy.

**Dr Geoff Mackey**

Jack, betting on winners, where do we start?

**Jack Semple**

We start I think by understanding the supply chain, and we probably start with Simon's industrial strategy but within that ... but after that, I think we need to map what is our supply chain at the moment, what are our supply chain capabilities, there's huge gaps in understanding not only within Government, within OEMs and tier ones as well, as to what the UK has to offer and what its potential is. So, I think we build on understanding of what we have now, what we're going to need in the future, so it's been said before but how do we take the automotive firms supply chain at the moment and equip them for the future. I think also in terms of the jobs, two points I'd make, if we don't adapt to the new technologies and the new trading environment then we're going to have far fewer jobs. That's for sure. And it's not only in manufacturing that we'll have fewer jobs but to get back to the point I made earlier, reports by Oxford Economics who are one of my members, the Manufacturing

Technologies Association, it's all the jobs that are directly not only directly but indirectly created by manufacturing. That's why manufacturing is so significant. But the opportunity is to really grow manufacturing with the newer technologies and that will create more jobs and it will create more jobs not only in manufacturing but in support industries as well.

**Dr Geoff Mackey**

Thanks very much Jack. Carmen, as a last word because unfortunately the rest of the panellists seem to think we should have a plan, would you like to comment on what actually happens and what we do in the UK?

**Carmen Torres-Sanchez**

And I would like to continue Jack's argument there in that in order to have a strong productive manufacturing we do need to remember that there are supplier and typically SMEs who are going to be able to give us the digital technologies, digital tools to be able to increase, improve our productivity and then we need the skills, the talent who can make it happen. So without that supply chain and I know that at the beginning you said forget about supply chain for a minute but it's true that we do need that supply chain to make the manufacturing truly productive and providing those jobs into the communities, local communities, the make local that we are also so in favour of because we know the benefits that that will bring. Thank you.

**Dr Geoff Mackey**

Thank you. Chair unfortunately I have to leave it there.

**Paul Girvan MP**

Thank you very much indeed Geoff and thank the panel for those answers. Move swiftly onto Paul Blomfield.

**Paul Blomfield MP**

Thanks very much Chair and I guess I really want to pursue this theme a little bit more. Carmen just now and earlier together with Simon and Jack I think made comments about the relationship between manufacturing and the wider economy, but largely framed until I think the point you were beginning to make Carmen, largely framed in the context of the added value manufacturing brings to the wider economy and the creation of additional jobs and so on. But I wonder if I could kind of look at the issue the other way around and ask how far manufacturing draws on and particularly the relationship with the services sector, how far manufacturing draws on the strengths of our services sector and is dependent on them. And perhaps I could start with Jack, you're at the cutting edge of this.

**Jack Semple**

The manufacturing, first of all I should say manufacturing is an important service sector in itself and so we've seen for example with coming out of the EU the challenges that are arising and

understanding which maintenance and service engineers can go to and from Europe and what they can do when they get there. So, the servitisation [ph 0:49:03.0] of manufacturing is developing and will develop further. But more broadly I think there is scope for strengthening the UK manufacturing understanding and brand starting within the people that you want to recruit to work in the sector. So, I think, and it would be great to have advocacy from Government, but I think companies themselves could do far more to get out into the local community and project themselves more positively in terms of what they do. Maybe engineers aren't the greatest at doing that but I'm sure that some of them are and they can find people who have the skills to help them. I think that's a really important point.

I don't think manufacturing is supported by the finance community as strongly as it could be. There are exceptions, I can think of banks that are doing terrific work in that area, but if you think that we're a powerhouse in London in the finance world, I'm not sure that that's coming through strongly enough by far to the UK sector and I think we need to understand why that is the case.

**Paul Blomfield MP**

Thanks very much you make a really important point there which I most certainly feel as an MP representing one of our great industrial cities traditionally, Sheffield. Jill, would you like to add to any reflections on the dependence of manufacturing on the services sector?

**Jill MacBryde**

Yes, well I've been involved in part with the manufacturing recovery plan for Scotland and that's certainly something that we've been talking about, the ecosystem around manufacturing and working together. I like the point that was made there about branding and again thinking about if we want to put ourselves up as being green sustainable then I think there's a job to be done that we're not very good at doing, but we've got the potential there. But no, again I think it's the working together is important and the regional part I think comes back in there because it's easier perhaps to do that at a more local level.

**Paul Blomfield MP**

Thanks very much, I'm conscious of time but I wonder Simon and then Carmen whether there's any brief comments you'd like to add?

**Simon Collingwood**

So totally agree with the comments from Jack and Jillian. I think the only other comment I would make is that I think what's called the Through Life Engineering Services or outcome-based manufacturing I think is really important here, where we're not talking just simply about the provision of products, a jet engine for example, but we're talking about the outcomes that it's trying to achieve through the lifecycle of it, and I think financial and legal services in the UK have got incredibly capabilities globally in that area and I think that is something where I think UK manufacturers together with those sectors could benefit enormously.

**Paul Blomfield MP**

Thanks. Carmen.

**Carmen Torres-Sanchez**

For me, a good example of how manufacturing, or one of the aspects of manufacturing is exported and is one of the silver ladies of our sector, design. A lot of the what we call manufacturing that we export is actually the design, the design of a product, the design of a system etc. And on the other hand, something that manufacturers complain that they are not supported that well is the finances. So how come, and this is really a question rather than an answer I'm sorry Paul, it's more that how do we do so well in some aspects and not that well in others. How do we support manufacturers so well in some aspects but not that much in the other aspects? So, I think that this is something that we need to get together and solve because they deserve a chance. I'll leave it there, thank you.

**Paul Blomfield MP**

OK, many thanks. Back to you Chair.

**Paul Girvan MP**

Thank you very much indeed Paul and the interesting thing is that don't depend upon politics, business will find a way, that's my way of putting it. That leads me on to the last person in this session, this first sector, and that's Stephen Farry and by no means last in this section but doesn't mean he's ... so I'll pass over to Stephen.

**Stephen Farry MP**

Thanks very much Chair for that and good morning to our witnesses. I want to ask a question around skills and access to labour, but I'm going to break it down into three components and I appreciate we're tight for time, so we'll try and pack as much in as concisely as possible. Basically, the three components would be first of all any comments on the immediate challenges from the loss of freedom of movement in terms of access to skills and where that's having a particular impact. The second aspect is any comments you wish to make around I suppose in particular the UK Government's approach to skills at present around areas such as reforms of further education, reforms of qualifications, apprenticeships, what could be done better in that regard. And perhaps just arising from that as maybe a short third strand, given the smaller scale of manufacturing in the UK compared to some of our European colleagues, is there any particular lessons from what they do particularly around their approach to professional [inaudible 0:54:54.5] vocational skills that we should be trying to apply better in the UK. This has been something we've been chasing for many generations to learn that but any further thoughts on that angle. So maybe start with Carmen and Simon and then Jillian and Jack.

**Carmen Torres-Sanchez**

Thank you and I'm really happy you're asking this question Stephen. We've been peppering through the conversation this morning the importance of skills and talent that will make it happen and will make that supply chain work and therefore support manufacturing and do the manufacturing. The UK is, and it's not surprising, the UK is one of the top countries in the World in terms of education and we have lots of international people coming to the UK to get their education and I'm an example

of that. But if we don't have the manufacturing sector or the enabling technologies that go around that we're going to educate those people for them to go back home again or going elsewhere, again brain drain. And that will be such a shame and we make such an investment in those people for them to then go elsewhere and flourish elsewhere.

The second point I want to make is that it's widely accepted that if we want to make that reshoring happen, i.e. those companies went away at some point and are now thinking about coming back, they are only going to consider coming back if they've got the right talent locally for them to work in that company, in that factory or in the enabling companies around that. So, if we really are serious about getting those companies reshoring back to the UK, we do need to invest in those skills. And it needs to be multi-level. We're talking about people at the entry level, we're talking about apprentices, we're talking about people with degrees, PhDs, the whole pipeline has to be sufficiently and healthily populated. Adding the dimension of EDI, the diversity, allowing people from minorities and different gender, women in particular etc, to also consider manufacturing as a career and a career that is going to make them go to the next level for them to grow professionally and personally and not to think of engineering as blue overalls and the oily hands that previous innovations perhaps had.

So, we all have that job to do in terms of telling the world that manufacturing is much more than building cars and using a screwdriver. They are all the different industries and technologies that go around it, it's very, very important and that is worth investing their life in a career in manufacturing. Thank you.

**Stephen Farry MP**

Simon.

**Simon Collingwood**

So, I think they are good comments there from Carmen and I agree with wholly. In terms of immediate challenges from freedom of movement restrictions, it's not something that's really crossed my path at all. In terms of UK Government approach to apprenticeships, I think that you know I'm drawn to the Government's heightening of apprenticeships and the equivalency with the academic route, but again you know without wishing to sound like Oliver Twist, I think we need some more on that. I think we need to see more focus on technical education and the opportunity pathways for people who are 16, 17, 18 and what that perhaps non-University route looks like. I think the other point I would make is about continuous professional education because we're seeing it in, with our manufacturing companies that have got, they've got brilliant manufacturing engineers and technicians working in their companies but they're looking to invest in digitisation and automation and robotics, I think that, and noting that the UK doesn't sit in the top 20 for robots per head in the UK, I think that helping manufacturing engineers who are very skilled and experienced to learn about data analysis and digitisation I think is incredibly important.

**Stephen Farry MP**

And Jillian and then finally Jack.

**Jill MacBryde**



I think Carmen, I could have said exactly what Carmen said, totally agree that we need to make manufacturing attractive again and I've been out interviewing companies about this Covid project and I'm hearing time and time again people, lack of people is a major, major problem. We've lost, we had an ageing workforce in the first place, a lot of the people who took redundancy during Covid, it was the over-50s and I think the problem at the other end with the apprenticeships during Covid, a lot of companies failed to kind of invest in apprenticeships and there was figures last year in The Manufacturer that suggested 64% of companies in manufacturing had failed to take on the apprentices they needed. Another study came out this week that said manufacturing has got something like 18% unfilled positions, so we're just not getting the people out of schools and universities wanting to come in the sector and I think we've all got a job to do there.

**Stephen Farry MP**

And finally, Jack please.

**Jack Semple**

Thanks Stephen. Whenever the skills and training issue is mentioned to a group of firms, for example in a trade association members general meeting or whatever, there is such animated discussion, you almost can't stop it. This is a massive, massive issue. EAMA did some research which it published December 2020 which highlighted right across our trade association membership which is right across the economy therefore, the skills gaps. Biggest skills gap was in digital, and I notice the HVMC has talked of a workforce crisis and a skills gap holding back investment. This is a huge issue, it gets back, we're seeing apprenticeship starts for a variety of reasons are well down, we've been bombarding BAIS and the DFE with all sorts of information and skills from EAMA. It gets down to again, it gets down to money, money for apprenticeships is being starved. We've got one signed off apprenticeship, they appealed against the funding, they can't get anybody, any FE college to train it because the funding from Government isn't adequate and that's a critical sector for the economy, right across the economy. So, we need more money for training, for apprenticeships, we need more support for SMEs.

I have to say we also need SMEs to step up to the mark themselves, but it gets down the issue about how seriously this Government see manufacturing and advanced engineering. To take Carmen's point about this is a whole massive infrastructure. Take one tiny example, air compressors account for 10% of all industrial electricity used in the UK and 15% of it just goes in leaks. So, we need to train the people absolutely to move forward and Government needs to decide it's a huge fault line for it, how seriously does it take this and are we going to invest in the future. We've just spent huge amounts of money keeping the economy going in sectors which sadly were forced to close. A very much smaller proportion of that needs to be fully invested in this key sector for the future.

**Stephen Farry MP**

Thank you very much. I would love to discuss skills for the next hour but appreciate we have to hand it back to the Chair for the next half of the session. Thank you very much.

**Paul Girvan MP**

Thank you very much indeed and I want to thank Jillian and Carmen and Jack and I know Simon will be staying on for the second group, but thank you very much for your input and I think it has been

extremely enlightening and has identified some areas that we need to get focus on and ensure that there is a plan and a way to bring us forward to be a major player in the world's supply and manufacturing aim. Thank you very much indeed.

And that leads me onto our second session, and you can stay on if you wish, there's no problem, I have no issue on that. But the second group and I'm going to just, Simon has already given us an introduction so I'm going to just move straight on to Tim and if Tim maybe wants to give us a wee one-minute profile.

**Tim Ward**

Yes, thank you, hopefully you can hear me good morning, everyone. Great. My name is Tim Ward, I'm a Principal Consultant and Director of MTPW Consultants, I work mainly in trading goods and rules of origin. Previously I was a Trade Negotiator on behalf of the Australian Government for about 20 years and negotiated the rules of origin in Australia's trade agreements with the Association of Southeast Asian nations and New Zealand and also was our lead negotiator in TPP for rules of origin for a few years. And following that I spent three years at the Australian Mission to the WTO in Geneva working as our representative on groups like the Trading Goods Committee, the Committee on Technical Barriers to Trade, Rules of Origin, Customs and so forth. And more recently worked as an advisor to the UK Department for International Trade advising on strategy in negotiations for rules of origin. We are now advising industry on similar sorts of issues.

**Paul Girvan MP**

Thank you very much indeed Tim. And then we have Richard, Richard Rumbelow.

**Richard Rumbelow**

Good morning, Chair, good morning, everyone. Richard Rumbelow from MakeUK. I lead on our international trade policy work covering both our relationships with the EU and also on our international work following the UK Government's free trade agreement programme. In addition to that I'm also the Membership Relations Director and therefore monitor closely what our members are saying on the matter of international trade as it affects their business operations going forward. I've been with MakeUK for five years, we are the representative body for UK manufacturing covering somewhere in the region of 22,000 firms across the UK. Prior to that I had specialised in public policy and public affairs for a range of sectors, primarily digital and telecommunications.

**Paul Girvan MP**

Thank you very much indeed and that will lead us in and I'm going to ask the first question and it is what has been the impact of the new EU trading relationship on the UK's manufacturing sector? I'll ask that to Richard, yes.

**Richard Rumbelow**

Thank you Chair. I think what we have seen so far is that the changes that we've seen in our trading relationship with the EU has affected the practicalities of trade between the UK and the EU. Most members report some degree of challenge in how that has affected them over the course of the last

12 months, both in terms of understanding the requirements particularly when it comes to customs administration and related matters of being able to import and export goods. But also, just in some of the other impacts that they've had to bear in terms of that. First of all, the costs, certainly of recruiting and hiring additional capacity for them to be able to understand that, whether that's internal resource or the hire of external advisors. Secondly the actual costs of for example customs administration which obviously is a new cost burden for them, particularly for EU trade. And lastly of course some of the related impacts of trade disruption, supply chain issues that have affected trade between the UK as those customs and administrative requirements begin to bed in.

And of course we're only part of the way through some of those changes which were introduced from the 1<sup>st</sup> of January last year, we've had a further suite of changes applied to the UK border from the 1<sup>st</sup> of January this year which affects both the administration and the timeliness of the administration of trade both now for imports as well as for exports, and of course we wait further changes during the course of this year in regard to the UK border as it affects more specialist goods, agricultural products, food products and alike. And lastly firms are also with a keen eye ahead to the 1<sup>st</sup> of January next year when product labelling legislation changes here and the application of new UK or GB specific product labelling for goods to be sold here on the Great British market.

So yes, undoubtedly Europe has the changes have taken place have affected trade between the UK and the EU and that administrative understanding and ability to do that. And certainly, from the most recent work that we've done with our members reported most recently earlier this month that 66% of them state that the departure from the EU has hampered their business operations during the course of the last 12 months, with concern that will obviously continue into this year and next for the reasons I've just outlined.

**Paul Girvan MP**

Thank you very much. Does Simon or Tim wish to add anything to that?

**Tim Ward**

Yes, certainly look most of the issues that are really affecting business were mentioned by Richard there. But it's difficult to quantify the impact that it's been having so far, partly because it's still an evolving situation, the other factor being that it's not normal trade at the moment because of the Covid effect on things. But two other things that certainly stand out I think are we've seen the videos and the images of trucks lining up trying to get to Dover to move across the Channel, those sorts of delays are particularly significant especially given the number of manufacturers that work on just in time supply chains. They're unable to rely on being able to meet those, which has follow on effects for delays. And also, as was previously mentioned, the new administrative arrangements, people that haven't, or manufacturers that haven't traded outside of Europe previously would be quite unfamiliar with the fact that the sorts of things that they need to deal with. The rules of origin can be quite a minefield for people, despite the headlines that tell us that we're getting zero tariff access to trading partners, what isn't made clear initially is that that only applies to goods which meet the rules of origin which can be less than transparent, aren't necessarily the most objective things in the World at times, they have a political edge to them and that adds an additional burden.

The people that are most, or the companies that are most likely to face that additional burden without having the resources necessarily to deal with that are the small and medium sized enterprises. When it's new to them the burden for them becomes that much more significant. The bigger companies, the major manufacturers, the autos industry and so forth, a lot of those will be in

a reasonable position to deal with it because they have staff already dedicated to the roles of dealing with customs, dealing with the rules of origin, dealing with moving goods around.

**Paul Girvan MP**

Thank you very much indeed, and Simon have you anything to add to that?

**Simon Collingwood**

No, I don't think so Chair.

**Paul Girvan MP**

Thank you very much indeed. And that leads us on then I'm going to pass over to Hilary for Hilary's question.

**Hilary Benn MP**

Paul thank you very much indeed and just following up the answers we've just heard from Richard and Tim, Richard you've talked about the costs of the new trading relationship, any immediately apparent benefits that you could point to?

**Richard Rumbelow**

I think one benefit that potentially has come through and I think this will emerge in time, is that firms perhaps have a view which I'll summarise as this – going global but remaining European, and what I mean by that is that there are going to be opportunities outside of the EU which I think firms will take more seriously and want to investigate more seriously as part of their trading portfolio. Europe is still going to be a significant part of the UK's manufacturing base when it comes to export and trade for reasons which I'm sure we'll go through the rest of the session, but I think there is now an appetite of view that they can look beyond the European shores to international markets where that appetite for UK manufactured goods is strong and will continue to be strong. So, there is that opportunity, but I don't think it can be ignored and my comment there is by no means a suitable reason or a suitable counter to the fact that firms are still getting to grips with the changes that have taken place for the movement of goods between the UK and European Union. And we're going to be in that cycle for some time as both we move from out of the pandemic impacts of this into the more straight issues that affect trade between the UK and European Union and making sure that the trade and cooperation agreement works beneficial for both the UK and the EU in making that arrangement as simple as possible in the future.

And if I may just touch on one point, I know we've just referred to trading goods here which is obviously important but services is also a critical part of UK manufacturing too. The ability to send staff to the European Union both for the purposes of work but also for the purposes integral to manufacturing, so that's commissioning, installation, service and alike. What we haven't seen yet is the impact of the TCA on those business movements because the pandemic and restrictions have limited the ability to travel for all but essential emergency reasons. Once we move away from that,

once barriers begin to be removed from the ability for people to trade, what will be interesting to see is how firms have prepared themselves to allow their employees to travel to the European Union and to comply with the rules of each member state when it comes to entry for the purposes of work. We haven't seen the impact of that yet but that is one certainly aspect we will have to keep under close review as those travel restrictions become reduced over this year.

**Hilary Benn MP**

OK. That's really helpful. Now obviously there was nothing to prevent British businesses from trading with the rest of the World before Brexit was there, so is it that you think that there will be a greater focus on it now because there may be a concomitant impact on our trade with the European Union?

**Richard Rumbelow**

I think in both, generally both the UK and European business want to continue and work as closely as they have done in the past, no question about that. For the 40-years history of integration that we've seen across supply chains, across commercial and professional relationships and the ability for the UK to be geographically close to that central market, both for those supply chains but also for the opportunity of selling direct finished goods into that market as well. What we have to ensure is that the trade and cooperation agreement moves on and develops the relationship so that ease of trade continues in the best format possible going forward. But I do think that there has always been a more international view of UK manufacturing beyond the European Union both for supply chain aspects but also for finished goods sales as well. I do think there's an increased sense that that is a wider opportunity that needs to be investigated and developed, what that does mean is that for many firms they will have to develop the skills to understand what that means, of the resources to be able to do it more successfully, to ensure that Government supports them in providing the intelligence, the market information and some necessary if you like concierge type services that allows firms entry opportunities into new and evolving markets. That appetite is there, and I think it will become more of an integral part of how firms assess their international trading activity.

**Hilary Benn MP**

OK that's very helpful. Can I turn to you Tim? Obviously, the TCA avoided tariffs on trading goods between the UK and the EU and so I want to focus on non-tariff barriers, and we've heard from Richard about the costs and the time and the fact that a number of the implications we haven't yet fully seen both because of Covid and some things being delayed. Can we just begin with rules of origin, which you mentioned, which are the sectors of the British manufacturing economy where you think rules of origin could prove to be a bit of a problem?

**Tim Ward**

It's a good question. It really depends on the model that we take and the approach that we take to negotiating the rules of origin. For instance, in the case of autos the rules of origin in the TCA recognise the fact that manufacture of autos between the UK and EU is quite integrated already and

so the rule of origin that exists for that sits a relatively high threshold of regional value content in order to meet the rules and to allow trade across the Channel.

If you apply that same rule of origin to trade outside of the EU/UK bubble it would be incredibly difficult for UK manufacturers to meet the rule of origin because there is not enough UK content in the goods, in the vehicles that are being produced here. And so, it's important that when the UK continues to negotiate its trade agreements with other players and other partners, that it bears that in mind and works hard to ensure that the thresholds more accurately reflect the nature of the production taking place just within the UK.

### **Hilary Benn MP**

Yes, just pursuing that autos point, I mean from the EU's point of view they've made it very clear they want to grow a car battery manufacturing industry in the EU and therefore they probably wouldn't be very keen to change the rules of origin arrangements with the UK to allow UK car manufacturers to bring in batteries say from Japan, and isn't that the reason why we are now beginning to see announcements about battery manufacturing here in the United Kingdom because the car manufacturers know they've got to do that to be able to meet the rules of origin requirements to continue to sell just under 2,000 cars a day to the EU?

### **Tim Ward**

It's certainly part of the need yes, certainly. But it also speaks to a number of the issues that are growing up in the World more generally, we'll talk a bit later on I believe on things to do with onshoring and so forth, and having a larger proportion of the key parts of the supply chain and the manufacturing process taking place relatively locally is strategically a very sensible thing to be doing and it's an area where if the UK is serious about being a major autos manufacturer in the future it needs to be looking at all parts of the supply chain and encouraging the development of new investment in the different parts and the key parts in the supply chain.

### **Hilary Benn MP**

OK, just one other question, I mean the Government recently announced that it is further delaying the implementation of UK REACH which is the new system for the chemicals industry in the UK to register its chemicals having taken a decision not to be part of the EU REACH system. Now evidence was given to the Select Committee I chaired saying it would cost the chemicals industry as I recall about £1 billion in effect nugatory cost just to replicate what we have at the moment. The fact that the Government has delayed the full implementation of that as I recall to 2025 what do you read into that, I don't know if any of our witnesses would like to comment on that, and allied to it what impact do you think this is all going to have on the nature of supply chains, because if it's difficult to bring stuff in in the way that we have in the past, might that lead to more manufacturers looking for supply chains within the UK but also vice versa in the EU where they say it's a hassle to get stuff from Britain so let's buy from elsewhere in the EU. How do you think this is going to play out? I don't know who wanted to touch on that, I know we're running out of time for my bit.

### **Richard Rumbelow**

I'll have a go at that question first. I think what it's showing is the practicalities of the TCA is very separate from the tone and the delivery of what the TCA was meant to do and I think there will be other occasions and other issues where the practical reality of delivering a regulatory change to a sector has to be thought through a lot more carefully, the practicalities of it, the delivery of it as well as obviously the cost implication for business in that compliance process. And the REACH decision as you've alluded to confirms that in all those cases that the implementation of a unique model for the UK has significant operational reach, but also cost impacts for businesses trying to comply with that. Not just UK businesses of course but international businesses who have to bring product into the UK as well. So, this is not just a single cost for one operator in the UK.

I think we've already seen that in other areas too, and I alerted the panel of course to the change in product market regulation coming into effect from the 1<sup>st</sup> of January next year. That's a delay of one year from the original intention of bringing it into effect from 1<sup>st</sup> of January this year. Again, because the infrastructure for that product regulation isn't fully in place yet and there's a lot of guidance to work through to ensure businesses both on this side of the Channel, the European side and internationally are ready for those changes and the right infrastructure is in place. So, the timetable of some of these very critical impacts to business are still being thought through, policy is still being worked out and the implementation of that clearly will take time to get through. So, I don't see either of those two being unique in changes that will come forward.

In terms of the point does the UK become less or more attractive, I think it depends on the nature of the product you're either importing or exporting from the UK and the cost impact of that business change to you. If you're supplying a relatively low amount of quantity product and have more specialist product into the UK, the cost of administration for that may exceed the commercial value of doing so. So, product in the margins of import to the UK may become less beneficial for a European supplier to think about that and to service the UK market going forward. So that means that we will have to have a domestic supply of that product or an alternative non-EU source of supply for that product in order for that still to happen.

So, it's those decisions that firms will be looking at now very closely to see if the cost of business of importing to the UK still remains valuable and profitable to do so.

**Hilary Benn MP**

OK that is really helpful, I've ran out of time, over to you Paul, thanks.

**Paul Girvan MP**

Thank you very much indeed Hilary and that leads us onto Tamara, Tamara asks her question.

**Tamara Cincik**

Thank you Chair. So, my question is to what extent do you think those people setting UK trade policy have a good understanding of modern supply chains, and I'd like to start with Simon please.

**Simon Collingwood**

Thank you, Tamara. I think to be entirely frank I think that question is probably a little bit beyond my bailiwick [ph 1:24:31.7] at the HVMC and indeed the AMRC. All I can point to is some fairly laboured and long-standing experience of when I worked in trade policy many years ago and the level of

engagement with business organisations and indeed non-Governmental organisations, charities principally, was fairly robust and far-reaching and so I think that at that time as officials we had fairly strong understanding of the different elements, but as I say that's fairly tired memory now and I think you might be better speaking to Richard or Tim.

**Tamara Cincik**

Well, I'll be asking both of them but thank you for that input. OK, Tim I wonder what your thoughts are please.

**Tim Ward**

Yeah, look building up the level of expertise to be able to argue these points and to understand just the implications of what you're doing is something which does take a lot of time and it does require a lot of contact. A couple of interesting things to my mind is that since mid-2019 I think we've had three different UK Trade Secretaries; we've had four different Business Secretaries. The learning curve despite the best will in the world is quite long. Added to that the effect that we've had off Covid where all the normal communications channels have been heavily disrupted means that it's very difficult for people to build up the necessary expertise to be thought leaders in this sort of area. I knew from my time as a trade negotiator that my primary source of information was always to go out to industry because they're the experts. I came in with an economics background and various other things and political science and so forth, but I'm not a chemist and I'm not an engineer and so when it comes to understanding the processes that are required in order to develop products and manufacture products, get them to market, build up the links with international suppliers, I had no illusions that I was an expert when it came to those sorts of things. And so of course I turned immediately to our industry contacts.

Now as Simon has just mentioned those sorts of contacts have always been quite good within the UK, as I say at this very critical time they've been terribly disrupted because we've no longer had that, or we haven't for the last two years had that level of face to face contact where you can ask those sorts of questions and you can get into these free-ranging discussions with the experts in industry to tell you how different policy options, different issues out there will affect the way that they are doing business and what the best outcomes for them could be.

**Tamara Cincik**

OK so before I go to Richard ... Tim, I just want to ask as a second part of that question if they are engaging as you say and I'm sure they are and I have evidence in my sector that they are, are they listening because if what the trade experts are saying goes against political will therein is the rub, would you agree with that?

**Tim Ward**

It's always a difficult balance, there are pressures coming in on all sides for politicians, they have their own rhetoric to consider, they have their local interests to consider, they have the party priorities to consider and that will always balance things. So, any of the agreements that are negotiated and any outcomes that we get from that always have a strong political edge to them. So, you can hear the message, but you can't necessarily do terribly much about it, and you can't necessarily put anything like the ideal outcomes from an industry perspective into place because



you're trying to balance so many other factors either in a trade negotiation or in industry policy issues generally.

**Tamara Cincik**

And arguably this is more evident here where emotions are so heightened.

**Tim Ward**

Indeed, yes. And yeah, we're in an environment where you've got such strong divisions in politics and everything is seen with a very strong and quite narrow black and white type of political lens at the time, that makes life even more difficult again.

**Tamara Cincik**

Thank you very much Tim. I'll hand over to Richard to answer this question as well please, thank you.

**Richard Rumbelow**

Thanks Tamara. I think a number of things have happened here at the same time, I think the pandemic impacts have undoubtedly put a spotlight on where our global supply chains in the UK come from, how vulnerable are they, how diverse are they and I think what we have seen as a result of the pandemic, the economic disruption as a result to the physical infrastructure of the supply chain has certainly brought that question to the fore, both for policy makers and also for business.

The second impact obviously the EU trade impacts and we've touched on that already but certainly the questions about how robust those are going to be, how practical they're going to be in the future, how impactful are those barriers to trade which have been inserted as a result of the trade and cooperation agreement, is that going to change the balance of certain supply chains, is there going to be a need for firms to reconsider that either to bring back some of that to the UK if possible, or to look for alternative supplies outside of Europe.

And lastly, I would also say that the geopolitics of international trade is very much sits underneath this as well. You've seen that already, the international vulnerability to supply chains because of geopolitics around trade wars, about trade disputes, around to a certain extent nationalism when it comes to certain countries applying trade policy has also affected both policy makers and businesses making an assessment about the vulnerability to their supply chains of trade with a certain country. And obviously at the moment that has been an underlying issue for some time, but we've seen that come to the surface particularly over the course of four or five years. No greater point of course than in the early phases of the pandemic, that nationalism came in in terms of sovereign protection for medical health equipment supplies and other things too. So, you've seen all those three factors, pandemic, EU trade and also the geopolitics of international trade make an assessment both for Government and also for business about the vulnerability of your economy to significant supply chain challenges.

I think as Tim has alluded to, I think now that we have a more established Department for International Trade, alongside our Department for Business, I think there is certainly the breadth of ability to have that strategic assessment of what and where our vulnerabilities might lie. Just in terms of understanding what could be future threats to that and what political judgements might need to be made around that. But it is also a case too that businesses undoubtedly over the course of the last two years have experiences at the front line, those disruptions, and are making assessments now as to what way and how do they change their supply chain to make them less vulnerable to some of those issues that we've seen over the last two years.

**Tamara Cincik**

Thank you very much, I'll hand back to the Chair, thank you.

**Paul Girvan MP**

Thank you very much indeed Tamara and that leads us onto Professor Alan Winters.

**Professor Alan Winters**

Yes, thank you very much Paul. I want to pick up really exactly where Richard just left us and talk about reshoring which is a bit fashionable in policy circles and I just wanted to enquire in a sense at a factual level are you seeing evidence of this occurring, you know in a sense driven by policy or driven by a business consideration. And secondly is it something which the UK should be encouraging or the opposite? So let me start with Richard since he landed us here.

**Richard Rumbelow**

Thank you, Alan. There is no question from a business point of view there is further evidence that firms are looking to reshore or certainly reappraise the supply chains they've got. Look to where those vulnerabilities might be, make sure there is not just a reliance on a single supplier for a single critical component. So, all that assessment is going on and our latest data suggests there is more evidence that firms this year and into next will be making those assessments and making adjustments to do so. That is certainly not across the piece, that is certainly not a majority of firms but there is an increasing minority of firms, probably a fifth or so who have responded to say that is an active part of their consideration over the course of the next 12 months or so.

Of course, there are limitations to that, and limitations are of course that the UK doesn't in itself at the moment have a complete suite of supply chain options to it, some key commodities, raw materials and others are not available in the UK and therefore you have to rely on international supply chains to help you with the supply of those critical products. And also, to a certain extent firms are in commercial relationships which they don't want to necessarily disrupt in this particular moment in time and therefore those are considerations also as to how quickly and in what way does reshoring or reassessment of it take up as well.

I think it's also important to mention lastly that what we're potentially beginning to see too where firms have the ability to do is take far greater control over their supply chains and that might mean mergers and acquisitions, it might mean deeper integration in some way, so they have far greater control over what they're actually able to import in terms of critical raw materials. So, it's those three things which I think will play a part in the course of the next couple of years in terms of a shift or

behavioural shift to one which will have a greater focus on reassessment of supply chains and undoubtedly decisions to reinvest more geographically locally.

**Professor Alan Winters**

Thank you very much Richard. Perhaps turning to Simon, is there anything you want to add to that Simon?

**Simon Collingwood**

I think Richard covers it, but I think that just on do we see any evidence, no, but what we do see is conversations as Richard says about taking control of supply chains. So I mentioned earlier a project, programme of works that we're involved in called Zero Carbon Humber where there is a potentially very strong procurement opportunity for British manufacturing firms around pipelines, for hydrogen, for carbon capture storage, all around on both banks of the Humber, and where the collaboration between a whole series of companies are looking at establishing the UK supply chain for that to set a sort of threshold that must be met of the content coming from UK companies. So that should hopefully provide an incentive for some level of investment in that capability, whether that's reshoring or domestic expansion.

And then I think the other point I would make is just around the offshore wind sector where we have traditionally seen a massive expansion of capability and installed capacity in offshore wind, but largely by buying in the kit. But we are seeing some shift in that and particularly with UK Government insisting on a certain level of UK content, which I think is impacting upon certain firms' decision making.

**Professor Alan Winters**

Thank you very much. Tim, do you want to contribute?

**Tim Ward**

I think Richard has covered most of the points very effectively where it's still working essentially anecdotal evidence on what's been happening so far. And we are only talking about a very short space of time that people have been adjusting to both the change in the UK's position having left the EU, plus this huge evolutionary change that is coming with concern over the impact of climate change and so forth. That will play out over a period of 15-20 years or more and so while there will be strong pressures and there will be innovations which will lead to changing the way we do things in order to make the new expectations that consumers and industry and others will have out there, so it will take quite some time to play out, they will offer up some good opportunities. But the one thing that we need to keep in perspective is that from a manufacturing perspective the tariff barrier at least is now a very small thing, we've pretty much done all the work on tariffs, the rates across industrialised countries tend to be 2-3% so the tariffs themselves are not a disincentive. The issues that we're dealing with in adjusting to the regulatory side of things is a big issue for the time being, how it plays out over time is something that will take time for us to fully understand and appreciate, but those with well-established commercial connections and networks and so forth will continue at least for the medium-term to rely on maintaining those sorts of links and profiting from them. And so that's really going to dampen the speed with which we move into more of an onshore environment.

**Professor Alan Winters**

Thank you very much. Can I just say a 15 second supplementary, since you do rules of origin have any of the people you deal with explicitly said they're thinking of changing their supply chain because of the rules of origin?

**Tim Ward**

I've had a couple of comments along those lines. So of the hidden nasties in the rules of origin as they apply in the EU agreement have caught some people out, so you get some of the cumulation effects which I could spend a couple of hours talking about the meaning of cumulation, but they're discovering that if you do part of your process in the UK and part of your process in the EU and you're moving goods backwards and forwards at different stages of production you can suddenly find that you're no longer eligible for preferential access and it's a bizarre sort of approach to rules of origin, there are good reasons for it in political minds but they're not the sorts of things that I find to be terribly attractive. And that has caused some problems, and there are some people, now I don't know whether those sorts of comments have come out on the spur of the moment when people are just angry at frustrated at what they're facing but yeah, I have had some of those sorts of comments that we'd be much better off just doing everything in Europe or doing everything here and just accept the additional cost or whatever, or the loss of local connections.

**Professor Alan Winters**

Thank you very much indeed. Back to you Paul.

**Paul Girvan MP**

Thank you very much indeed. Can we move onto Andrew Ballheimer?

**Andrew Ballheimer**

Thanks very much, thank you everyone as well for the excellent answers. Picking up on the point earlier that adjustments are being made by many firms and it's work in progress, I mean as you know you look now and also in the medium-term is the UK an attractive location for those planning to invest in manufacturing production, I would be interested in your views, Richard maybe first.

**Richard Rumbelow**

I think there's still optimism the UK is, even with the changes that we have set out or we have seen so far. I still think there's a huge appetite for the quality of UK manufacturing, both as a centre of excellence but also as a contributor to those supply chains that we've talked about, despite there are some challenges and I listened to some of the previous session around skills, apprentices and all that infrastructure issue which is absolutely critical for us. Despite those and addresses those are critical, but the despite that UK is still seen as a centre of excellence for manufacturing both in terms of current capability but also looking at some of the innovation that's coming forward through not just industry but also those collaborations with institutional arrangements as well. So, the UK is still

attractive, it still will draw in that international investment and obviously Government must play a much more critical role in flag raising for Britain on the international stage in bringing that excellence to the attention of international audiences and investors. That is absolutely critical. Considering we are now competitive, or sorry we are going to be as competitive; we need to be as competitive as other critical countries when it comes to where that Pound/Dollar is going to be spent in investment.

Now I also think too that we must also have a more strategic line between what we want to achieve in our domestic economy when it comes to manufacturing and what those international opportunities are for export. We haven't quite got that definition right yet, we are certainly pursuing an international trade policy which is aggressive, which is about accumulating trade discussions and trade arrangements with other countries, but what we haven't quite seen in the same way is the marrying up of what our domestic policy priorities are going to be to support those objectives going forward. We have a huge opportunity with green and tech, our net zero championship through COP26 for example should be a great platform of bringing forward those discussions where that investment can be for, and I certainly agree with earlier comments about green technology here and etc. So, we must demonstrate a strong industrial base which has foundations in what we want to be known for in the future in the manufacturing capability, that will draw in investment, but that will also link in with our international trade ambitions on an international footing.

**Andrew Ballheimer**

Thank you. Tim, interested in your views, in the medium-term as well I'd be quite interested as well.

**Tim Ward**

The Government has started reasonably well in this in terms of providing incentive for industrial development in the UK and the manufacturing. So that's a good sign, it's an early sign. Whether it's well-coordinated, I heard what Richard was saying there and I think I agree entirely with him. But the UK manufacturing industry of the future is going to be very different to what we've known from the past. Obviously, we're not going to be able to attract labour intensive manufacturing because we just can't compete on wage levels, that's gone, that's not coming back. The UK is almost certainly going to continue to focus on capital intensive high tech industries and this is where the UK can do very well, it does have a well-deserved reputation for innovation and development, as an outsider, someone from outside the UK we've always been very well aware of just how strong the UK has been as a technological leader in so many industries and this provides a good opportunity for the UK to do well in the future in attracting those sorts of industries to become in one respect a niche manufacturer but nevertheless that's a very high value, very useful manufacturing. So, it's providing great wealth to the country and providing a lot of employment as well.

So, look, there are good opportunities out there and the UK remains very attractive I think to foreign investment.

**Andrew Ballheimer**

And Simon.

**Simon Collingwood**

I guess my starting point would be that the UK has long been an attractive place for inward investment, at various points we've been the number one destination for inward investment into Europe and I think that notwithstanding the discussions with the EU I think we continue to be an attractive destination for inward investment and I think manufacturing falls within that for the reasons that Richard and Tim have outlined around the reputation for quality, particularly at the higher innovation-led end. Speaking, you know my parochial interests here I think that we've seen some fairly significant inward investment from, whether it's for likes of Boeing or McLaren or whether it's Rolls Royce looking to invest in the UK and the capabilities here, as has been mentioned, in fairly capital intensive, automated manufacturing capabilities. So, we are seeing it and sitting in a slightly privileged position that I do here, that we do see a pipeline of potential investments coming into this region and indeed where we have other footprints in Lancashire and indeed North Wales. So, I am positive, but I come back to my sort of point that I was making particularly in the last session, I think the marrying of domestic industrial strategy with our international market access and international trade strategy, I think need to marry up far stronger than they are currently.

**Andrew Ballheimer**

Cautious optimism I guess is the conclusion.

**Simon Collingwood**

That's right.

**Andrew Ballheimer**

Thank you, back to the Chair. Thanks Paul.

**Paul Girvan MP**

Thank you, Andrew. Last, but by no means least, we will move onto Alison, and I think Alison has a couple of questions.

**Alison Williams**

Yes, thank you, thanks Chair. So, I'd like to turn our attention to SMEs, we tend to hear a lot about the big manufacturing companies like Rolls Royce, JCB but what is the role of SMEs in this sector, are they dependent on these larger players or are they able to trade successfully on their own? If we could start with Tim, please.

**Tim Ward**

Yes, certainly it tends to be the bigger companies that grab the attention, but if we look at an industry or a sector like automotive, the automotive industry, the suppliers of components and so forth account for 40% of the employment manufacturing side of things, there are 2,500 approximately suppliers in the automotive industry and the vast majority of them we don't know

their names, they're not out there making headlines. They are essentially small and medium sized enterprises, and they play a fundamental role and not just in supplying the domestic market but also in exporting as well. The automotive suppliers in the UK in the last full year of production, normal year of production, here before Covid hit us were doing more than £5 billion worth of business into the EU. Or at least internationally and 70% of that was the EU, so they are a fundamental part of most of the major industry sectors here and they will continue to be. But it also underscores that at the moment the vast majority of that continues to be trade with the EU and it's the SMEs that face the biggest challenges because they tend to be the least resourced when it comes to dealing with the issues to do with administrative challenges of getting goods from the factory gate to the consumers. And we certainly need to see an environment which allows the SMEs to do what they do so well with minimum disruption when it comes to trying to get those goods to market, wherever those markets happen to be.

### **Alison Williams**

Yeah, I mean that's very consistent with all of the evidence sessions that we've run that SMEs tend to be really core at the centre of a lot of these industries but are definitely the hardest hit in terms of the scale of change and their ability to absorb it. Thank you. Richard, do you have anything you'd like to add?

### **Richard Rumbelow**

Yes, I think Tim has summarised that very well. I think it would be wrong to profile UK manufacturing as only being dominated from an export point of view from the big brands that we would normally associate ourselves with. Export profile of manufacturing goes from the SMEs right up to the global brands. All do so for a variety of strategic reasons, whether that is because the domestic market isn't sufficient for them, they want to expand internationally, it gives them an ability to achieve scale which they wouldn't be able to do. Brings innovation back into the UK as well for them too because they're up against international counterparts, so they are able to do that too. And lastly of course it achieves growth, so all the reasons that any sized company would want to export is typified whether you're an SME or a large-scale company. There are some differences between the two of course and Tim has alluded to the fact of resources and being able to resource up what you need to do if you're going to achieve a significant amount of export sales and I think at the moment again I'll come back to a point that those SMEs do need additional support to be able to develop and understand those international markets. It is about skills, it is about learning what international trade is, international trade is law, and it is commerce and its strategic awareness as well as just being able to make a product and put it on a lorry and send it to someone. There's lots of skills that have to be learnt by SMEs to do that and skilling up, skilling in that area is hugely important as well as being able to identify those international market opportunities, the intelligence of a local market, the concierge ability of knowing who to talk to, critical resource limitations for many firms but critical for them to have success and that's where I think additional support from Government is needed.

Also, just to bear in mind coming back to that European supply chain point which obviously we've touched upon. Many of the SMEs do and are part of those supply chains maybe first tier or second tier so they are integral to those supply chains, they may not be the exporters of the final product to a customer, but they are an integral part of that European supply chain and therefore it's important for them to have that continuity going forward as well. But I do think many of them do see the opportunity of going beyond the EU particularly those who have finished products and whether it's pharmaceutical, whether it's medical devices, whether it's specialists in aviation products, whether it's chemicals or whatever there's a lot of very good SME firms exporting really hard, really

competitive into the international market. They don't get the recognition because they're not household names, but many of them have expert resources and one thing they're very good at doing, and this is a difference from an SME compared to a larger firm, is that SMEs love peer learning, they love to learn from their peers how they have been successful in critical markets, that's how they learn and develop and those SME champions are exceptionally good at giving those war stories of what it's like being in competitive international markets and we need to enhance that and develop that even further.

**Alison Williams**

Very powerful, compelling description of that community, thank you. Simon before we move onto the last question is there anything you'd like to add on the SME question?

**Simon Collingwood**

No, simply to somewhat echo what Richard and Tim have said about the importance of the SME community but the point I would make is just it's quite a broad category as well. Broad in terms of size and capability, broad in terms of their innovation capability and ability to adopt new technology and techniques and indeed to trade internationally. And indeed, great variation in where they sit in the supply chain, whether they're direct to consumer or B2B enterprises. So, it's a huge amount of variation. But the point I would make about SMEs is really SMEs are by far the largest part of the business community in any region and to that extent are part of the resilience of our communities and their ability to withstand economic shocks and to provide the wellbeing and prosperity we all want.

**Alison Williams**

Very good point, thank you. OK just in the last few minutes I might just do a very quick whip round, what are the competitive threats to our future as manufacturers and what are your main recommendations on how we tackle this? So maybe reverse order, Simon.

**Simon Collingwood**

Two words, industrial strategy.

**Alison Williams**

Thank you. Richard?

**Richard Rumbelow**

Industrial strategy linked to an international trade strategy that recognises the value of manufacturing within it and looks at also issue beyond tariffs as critical aspects of trade and negotiations. We haven't really touched on that but there are various aspects of trade negotiations beyond tariffs which are important for manufacturers to be able to export successfully. And also, to give the resources, particularly for SMEs, to give them the skills and the capability of being able to export more.



**Alison Williams**

Thank you. Tim?

**Tim Ward**

Yeah look, I think the two from my perspective the biggest threat would be ongoing disruptions to UK/EU trade, you can't divorce yourself from 50% of your import and export market without the potential for major costs and problems. We need to bed down that relationship, make it more effective, we need to ensure that the manufacturers and others that are working within that relationship have a clear voice in determining where it goes so that we can have an effective ongoing relationship with the EU, that's just essential to UK manufacturing and UK trade. And we just can't allow for high admin costs and delays in just in time supply and so forth to dominate the storyline going forward.

And the other one which I'm not so sure that it's necessarily just a threat, it could be seen as a challenge or as an opportunity and that is if we don't have coordinated response to the challenges of climate change that is changing people's, consumers', manufacturers' expectations of how the world will work in future it is changing the nature of products which will be acceptable to the marketplace. We need to have a solid policy in place that recognises the reality of this and how that is impacting not just on the planet but on the people that populate that planet as well and what their expectations might be and this probably goes back to what we've mentioned a number of times during this discussion, the reputation that the UK has for innovation is something which drove the UK as a leader of the first Industrial Revolution and I believe has the opportunity to do the same for this new Industrial Revolution which is exactly what this represents for us, and we need to have an environment in place which recognises the capacity of UK innovators and manufacturers to rise to the challenge. So, as I say I'm not sure it's necessarily a threat, I would hopefully see it more as an opportunity and a great challenge for UK industry.

**Alison Williams**

Yes, and let's end the session on an opportunity. Thank you, OK thank you all for your time today, back to the Chair.

**Paul Girvan MP**

Thank you very much indeed Alison and I would want to put on record our thanks to what have been two excellent teams with a wealth of experience and knowledge and also it has given us an opportunity to see the challenges and opportunities that we can, as a nation, and as manufacturers within the UK face and meet and the way forward. I also want to congratulate the support team in basically identifying the right people to bring along to ensure that we get a good opportunity to bring ourselves up to speed with what is going on and the opportunities that are there and the challenges that we face. So, I have nothing further to say and thank you all very much for attending this morning and all of those Commissioners who took the opportunity to ask questions, thank you very much indeed.

