

Independent Review of the Innovation Centres Programme

Chaired by Professor Graeme Reid

Oral Evidence

Transcribed from audio recordings of Advisory Committee sessions held on 1 June, 29 June, 27 July and 11 August

SJ: For the record, I'm Siobhan Jordan, I'm Director of Interface and have been since its inception in 2005, and I'm also a member of the SSC Working Committee.

GR: Thank you. Douglas?

DM: Good afternoon, I'm Douglas Mundie. Siobhan, welcome. Could we start by exploring a little bit more of the background to the Innovation Centres and the fact that we've developed Scotland Assets. How well do you believe they're delivering against the objective of being truly Scotland-wide in terms of their funding?

SJ: I suppose I start with my observations and everything will be with respect to what we know from our engagement within Interface and the Innovation Centres, and perhaps others; enterprise agencies, etc., companies on the ground may be better placed to understand the geographical basis. Our observations are that the companies.... We have tried to bring companies to the Innovation Centres that are pan-Scotland. Our remit is very much pan-Scotland.

So some of the companies that are engaging particularly with DHI would have based in the Highlands and Islands, for example and housing would have come through the referrals from Interface. I think there is no doubting that the Innovation Centre has had very specific aims and objectives, so for some of them, they lend themselves naturally to being pan-Scotland and I can contribute an example. I think others perhaps are more restricted to central regions.

DM: You made the point in your evidence that you feel more focus could be put on development of large-scale collaborations. Why are you focused on that in particular?

SG: I think there's no doubting it's a very busy landscape for academic business in Scotland and there are promotional activities by individual universities, by

ourselves at Interface, there is activity involved in supporting business-to-business activity through the Enterprise Agencies, etc.

Where the Innovation Centres sit is really important for the future of academic to business in Scotland, and the impacts that they can deliver, but if we're all butting up against one another and trying to almost get attractive businesses through the demands of each, I don't think that can lend itself to transformational outcomes.

I think our experiences have been in... I suppose that the way Interface itself is delivering both on our individual and geographical remit of individual brokerage to businesses versus our Interface programme, looking at sector-based activities, you have to have distinctions and almost separate programmes and teams running.

So, we have experiences both with the sector-based industries in food and drink and looking at the longer term... Medium to longer term aids for groups of businesses on a sectoral basis and I think that is definitely showing that. Whilst it's not easy to do, we can get those transformational step change transformation happening in businesses.

I look to the breadth of activities that are going on across the innovation sectors, and I think part of the challenge that you face is in looking at the programme life of each of the businesses are operating very differently and distinctly, and that's part of our challenge because we have failed to engage with them collectively, and have had to produce significant resources in engaging with them individually.

Some of the programmes of activity, for example, in agriculture, have set very clear transformation projects with very clear aims. Others are perhaps more looking at business solution type quick wins perhaps. They are the ones that probably are most chasing the same core of companies and individual universities themselves and enterprise agencies.

I think being able to aspire to what is going to be the legacy of the transformation programmes perhaps there's a need to look at how they are actually achieving them. The Mirage project presents us with great example of something that perhaps... Whilst it took time to get to a solution and to get it off the ground, is a great example of a group of companies working together in a programme of activity that could make a step change to Scotland.

DM: So, if you're looking at how the original vision can be achieved more effectively going forward, you have a concern which again comes out in your evidence about the confusion of overlapping activities by Interface and by the Innovation Centres themselves. How would you propose that can be done better? Because you said you've had, as an organisation, to put a lot of resource into making contact with Innovation Centres. Did they not want to engage with you for instance?

SJ: It's interesting. At the point of time of application, I was an observer on the panel that was choosing and selecting applications of the successful bids and there was a lot of discussion on the complementarity at that point, and certainly agreement that it should be addressed once the CEOs were in place, and the business plan had been implemented.

There was no doubting from day one there was a huge desire to be really, firm objectives in it and it was really naturally in there about complementarity. But two of the CEOs at my first meetings with them said why did the SSC put in place a programme of Innovation Centres if they had Interface. So that's the starting point that I was faced with.

It's the whole realisation that from the CEO's point of view... Well, they're there to deliver a business plan and therefore almost Interface was there either as a... Get in the way or therefore, when SSC didn't see that Interface was delivering because they couldn't [Inaudible 00:07:23]. So, that's the starting point. We've tried a huge amount of resource to build those bridges and make sure it was competitive.

I think it's very interesting and turning to the latest publication from RSE where one of the DHI quotes... and you know, DHI works very closely with Interface. Coming from industry, my instinct is to be competitive, and I think that's what we're faced with CEOs in some instances, is the desire to deliver on the business plan but perhaps is seen as competitor versus understanding the Scottish ecosystem, which is a Team Scotland approach and certainly there's a huge desire from the Scottish Government and otherwise that there's greater alignment of improving resources.

Looking to what would make a difference, I think an opportunity that we're not seen as competitors and a realisation that there is huge complementarity

and I think the whole thing should be seen as good here, and as actually clearly demonstrating DHI get where we can add complementarity.

But we don't have the circumstances to make that happen. We have tried to put in place engagement plans, we have put in place our Interface Board measures of success which would look at over the course of the year what we would anticipate would happen through our recording and measures of engagement.

GR: Thank you very much. Alex.

AH: Hi, I'm Alex Herbert from The Higher Education Funding Council for England. You talked a lot about complementarity, or lack of, in some cases. Can you tell us a little bit more about the governance and where you think improvements could be made to the structure of the programme to encourage...?

SJ: So, reflecting on each of the Innovation Centres and how I think, quite rightly, they need a very strong steer from industry and that really cascades down through the CEOs with a strong industry background, the Chairs who also have a very strong engagement with industry. And I think that structure in place in place is absolutely quite right to ensure the Innovation Centres are delivering to what industry require.

I think there is no doubt in observing that there is a close-knit community and great connectivity between the two, who are meeting regularly and frequently. And I think again, probably good engagement across the piece between the funders and the stakeholders.

I think where opportunities lie is what the next level down in other organisations; not just Interface, but other innovation networks. I've been working in the academic business and on other pan-Scotland initiatives; tourism, sport, with the mountain biking initiative in Scotland. It's a huge core of the sector and so there's a lot of cross-learning that could happen on the consultation programme, again through the Government.

AH: Under the current structure where Innovation Centres are hosted by universities, how effective do you think that is or could you see other more effective models emerging?

SJ: I suppose we're a good model that has been hosted by the University of Edinburgh for the past 11 years without any challenges or.... And quietly almost got on where both organisations see the complementarity in Interface being hosted by universities. I suppose I speak from quite a lot of experience from having a very successful relationship with my host institution. And that goes down from being employed by the University of Edinburgh, using their HR systems, their financial systems, etc. So, that complementarity has worked for us very, very well.

I think from our point of view I am still really keen that we would be hosted by the university because it has very much showcased their supply side. Talking to other partner universities, it is really important that you understand, we understand, the nuances of how academics work.

The starting point is, from our experience is, you can work really, really well and be seen as a very business-focused organisation, even within the confines of being hosted within a university. I think certainly with my SSCR hat on, that works very well from the funder's point of view in being able to make the payments, etc., through the structures of the university.

I think that is where the tension lies. It's can you operate and almost focus as a business and still be within the confines of the University, and I think there's not just Interface per se. The University of Strathclyde operates very successfully as a host within Strathclyde as well. So, there are good models. Is it constrained to the Innovation Centres? Personally, no, I wouldn't think so because there's ways of getting round everything. And I think through some of the mechanisms that the universities themselves have put in place, like the administrative or the spectrum, they are very willing to work more closely with the Innovation Centres and address problems if there are any.

AH: Thank you. And just turning to the monitoring system, do you think there's clarity around how the performance of the Innovation Centres will be assessed against their original objectives?

SJ: I think the measurement framework that is put in place by the enterprise agencies and funders from day one provides a huge degree of clarity and I think that measurement framework was very helpful in running it out to other programmes. For example, some of the textiles future programme modelled their metrics on the Innovation Centres. I think it provides a great framework for programmes of this type.

It's clear probably, I'm going to say, from the inside, and tending to know about this, how they will be monitored, I'm not sure it will be clear to other organisations, externals or even businesses themselves, as to what the level of monitoring and evaluation will be going on.

Whilst I hugely understand the need for monitoring and evaluation, and with Interface evaluation techniques in loads of ways, we are probably an example of having a huge amount of data at our fingertips to be able to showcase our outcomes, I'm not sure that's the same within an organisation.

Alex: Do you think they've got the level right and those processes are allowing freedom to innovate?

SJ: Yes, and I think that in looking at the flexibility and how each of the Innovation Centres have evolved, even though they have a common set of metrics, I would have said that is of vital influence to them. I think with public money there has to be a degree of transparency and given the high profile of the Innovation Centres, I think it's right that funders and stakeholders have to be able to draw on that evidence base because it will be asked as to what they are achieving.

GR Thank you.

TB: Tim Bedford, Member of SFC. I'd like to, if we can, just go back to the original vision, the aims and objectives as they were originally set out, just to ask you to reflect on whether those objectives that were set out in 2012 are still relevant in 2016?

[Laughter]

SJ: There is no doubting, the OECD reports, etc., all demonstrate that businesses that work with academia and innovate have actually a greater, I suppose, impact, from the point of view of their turnover and productivity, etc. Even in the smaller scale programmes that we put together, we have businesses that have grown from 10 employees to 42 employees who are working with universities.

There is no doubt in the underlying premise that exists that getting more industry to work with universities will fundamentally deliver economic benefits. I think in looking at the aims and objectives, certainly I feel they are still correct and valid. There is probably even, I suppose, three or four years on from when this was created, probably an even greater need on the focus of skills and the employability.

From the Research and Commercial Directors that spoke to each of the sector groups, sector industry leadership groups around key industry sectors in Scotland, the greatest topic of conversation was around skills. How do they get the graduates of tomorrow thinking innovatively and knowing about their sectors?

What skills are in here and there's no doubt a strong desire by some of the Innovation Centres to develop greater, flexible programmes around the skills. For example, some of the Masters in biotechnology and some of the work that's been achieved by Data Lab, again perhaps looking again whether all of them are focusing on generating future innovators or future skilled professionals for all the sectors, is probably very interesting thing to perhaps look at again, reference aims to objectives.

TB: That's useful. As you know, also one of the things that was intended was to build up this culture of collaboration and involve research pools, cross collaboration across the different universities, and really build on the other knowledge of change activities that's been created. Are the Innovation Centres, and maybe you want to differentiate between differences in sectors; there are some cross-cutting and some very consumer/sector focused, to what

extent are they creating and increasing chances of developing innovation opportunities?

SJ: That's where a broader aim of collaboration can be integrated into a university or it can be across a groups of companies. All are valid in the context of Innovation Centres. I think those focused on individual or cross-sector, for example, Construction and Oil and Gas, have probably a greater focus on one-to-one engagement with individual companies, rather than key themes. The key themes activity really comes through from the Stratified Medicine and Agriculture where there are transformative themes happening.

I think if you contrast those two, the cross-collaboration with respect to groups of companies and groups of universities are probably, at this moment, less evident, as opposed to the others when particular contracting is happening... The themes that are set out in agriculture and particularly in stratified medicine...

It's interesting you mention the research because I would say, and I'm racking my brains here, perhaps the most engaged research pool in particular, in the Innovation Centre, may be Data Lab and the [Inaudible 00:19:24] programme. But apart from that, and forgive me if I miss some, but racking and horizon scanning, I can't really see of any others that would be engaged in interactions.

TB: Just to evolve on the Data Lab one, is that working in a sense of a view to science that's being used there, or is it more helping to engage with industry as well?

SJ: I think with... [Inaudible 00:19:52] had a strong, I suppose, track record in having cogs in various different locations; the Borders, Glasgow and Strathclyde, so in terms of the key academics being geographically spread across Scotland, as well as the strong commitment to developing greater engagement with industry through some of their skills programmes. I think the Data Lab has really evolved quite quick and considerably.

Is Data Lab still focused on engagement with academia and computer science? As far as I can observe, yes, and it's certainly whether they come to us and say we want introductions to other academics across all disciplines, so I think from

that point of view my observation would be is still the broader sense of software in computer schemes.

TB: And if I could just follow up again by asking more generally, because you're obviously very much aware of other things that are going on across the UK and we have a Fraunhofer in Scotland, we've got some Catapult Centres, and if you compare and contrast the way these work, do you think there are lessons that can be learned in either direction from the different models?

SJ: I absolutely would consider... So, Fraunhofer offers a really good model for housebuilders and stakeholder, if you call them, Innovation Centre or otherwise equivalent in its sister bureau and the third model they have achieved successfully in Germany and that has been piloted from the UK in Strathclyde and I think there's a lot of lessons to be learned from the Innovation Centres because it can actually deliver on the map.

Observations are intangible and interesting because they are always so unique and different and perhaps have a very clear perspective and a clear focus on business to business academia and business to business opportunities rather than perhaps business to academia, so again lessons to learn in terms of whether that's the natural evolution of some of the innovations measured or whether Scotland still wants them measured in academia.

Again, I think perhaps some of them are controlled on a much larger scale in transformation of projects than our innovation centres in academia in Scotland. Interestingly, Science Foundation Ireland funds quite a number of Innovation Centres in Ireland which map with the themes quite considerably to the themes here in Scotland and so it's quite good to get and interesting.

I've been speaking to the Chief Executive of Science and Innovation Ireland and it's very interesting they have set themselves up very much as, building on, I was going to say the equivalent of research pools, but very much on the blue sky, transformation and applied research and then delivering them into large-scale industry.

I think there's a good model there and they went for, not so much an evaluation, more a peer review, with bringing in international review of their other ways they review the Science Foundation Ireland programmes. That's a

kind of close neighbour, similar type of economy and they've also partnered with Science Foundation Ireland with some of the American institutions as well and some of their programmes. So there's interesting lessons to be learned from what they've been doing there as well and a real willingness to show best practice and so on.

I think whilst the Catapults offer us the good examples from the UK and Germany and other models as well that are similar, as a country, that perhaps could be of interest to you.

GB: Do you have one more?

TB Just one more, if I may. The diversity we've got with the Innovation Centres is apparently driven by the freedom they were given at the start to model. Is that something that simply reflects the diversity between the different sectors that they're operating in, and is therefore something that is simply a function of the way you interact with a particular sector, or do you think that's something that's emerged more simply because of the freedom they were given, if you're comparing it to these other examples from outside?

SJ: It's a very interesting question because I would put diversity down to two levels. They were given a huge amount of freedom, and that did allow them to reinvent the wheel on quite a lot of activities, particularly I would say, around some of the more collaborative templates, like IP, etc. that perhaps they didn't look out for and some of the work had already been done by the University of Scotland Research and Commercialisation Directors, etc., was being reinvented.

I think in hindsight a lot of the short circuit work could have been done there but in their freedom to operate, just those connections weren't made to existing organisations that had actually been there, done that. That's in one sense the nuts and bolts but then I think there could have been a lot of perhaps, better use of resources to perhaps look at how some of those established operational procedures could have come into play.

And you know, particularly perhaps our assurance and customer relationship management systems, etc. so if I look back, I think I would be certainly be

asking why could we not have been more consistent in data sharing and that very much resonates with Interface as well, and you would need to have some of those competitive situations where we're all working with the same businesses.

Going back to the establishment, I spoke more of the themes, I think it's interesting that both some of the Innovation Centres, particularly in their business plans, outlined very clear themes and stuck to those. I'm thinking of agriculture in particular, stratified Medicine and others that have had to evolve due the changing nature (oil and gas being exactly one) and circumstances.

And we've also had, I suppose, DHI's leader using the opportunity to reflect on yes, we started on this particular, wider, approach, do we now need to narrow and be a bit more, I suppose, strategic, in where we go next in the next generation. That's not a bad thing because I think you can learn a lot from having a wide approach in the beginning but somewhere you have to make a decision as to where best can you fund and resource it.

And also I go back to that clinic with Team Scotland where we actually stipulated being ready and addressed by the programmes. I think this review and suppose my comments are, in the context of, it's a very good point to look at what continuous improvement can happen.

I think from our point of view, when establishing interface, we hugely benefited from our being in 18 months of inception to actually being on the curve of continuous improvement and that's the approach we've always adopted is to continuously re-evolve and work in a collaborative setting. I think some of the themes for stratified medicine is right to start and continue with them and to others I think an evolution can happen.

GR: Okay, thank you. Willy.

WF: Hi, I'm William Findlay, I'm with the GlobalScot Group and I'm looking at this from an industrial point of view. When the IC programme was set up initially, it was set up to help solve matters, what we classed as industry-confined problems. Interestingly, this programme actually makes industry appropriately aware and engaged in the relevant programmes and, as from another point of

view, is a research-based finding of programmes innovative and exciting enough in order for them to be able to be both ways?

SJ: If I start with the industry-led programmes and problems. I think yes, there's no doubt that the activities we've delivered on by the majority of the Innovation Centres are actually very much led by industry and we try to address what the short, medium and longer term innovation plan is and I think that's absolutely right and I think continuing to do that is absolutely essential.

I think in terms of the engagement by individual universities, that is probably easier for the universities as part of the original plan, or less so or part of the original business plan, probably less so for universities that may not have been involved in that first development.

So how you break in to almost being able to, perhaps, identify and break into some of those programmes of activity? Certainly it's not clear to some of those universities and certainly a common thread there. If I just step back and explain, Interface has 23 different supply partners between the universities and the research institutions. We operate in partnership so as far as we're concerned, every institution has the relevant expertise, is open to and able to find a solution to that business, because it's up to the universities themselves to determine their capability and capacity, so that transparency and openness is very much welcomed by the academic partners, to be able to engage with industry in its broader sense, be it anywhere in any sector that we respond to.

So I think from the Innovation Centre's point of view, some of them just replicated our processes but perhaps that's taken them long time and goes back to the nuts and bolts of setting up those operational procedures, and was that necessary actually, could they just have worked alongside us. Others have probably gone to their original pool of their established team here and just really continued to use them.

I think certainly this part of our work with the Innovation Scotland Forum we were doing some practitioner work with some of the universities and there was less.... And that was around making pathways for business so it was clear from a business point of view what the journey was and to start working with academia and continue to build a small scale programme to a strategic place.

And where those practitioners in the universities were less than clear, was how they would engagement with the Innovation Centres. Certainly a lot of what we have put resource and time into is with engaging with universities and where the Innovation Centres tell us how we can refer new companies, we have worked with over 3000 businesses across Scotland.

We just like to know, are some of these relevant to you and if not, that's absolutely fine and if they are how do we actually get these businesses to escalate their level of innovation by working with the Innovation Centre and that, I think, is about clarity of... In some cases, with the IOIC they put out professional calls and are clear as to how you can engage from a business point of view and for others, it's just OK, and that's also again back to insight of understanding business and academia you're not au fait with everything unless...

GR: Siobhan, can I just ask a question about the Highlands and Islands because you haven't talked about geography at all, but do you think that our distinct challenge is with the Innovation Centres in reaching some of the more sparsely populated parts of Scotland? If so, can you suggest ways in which the centres might develop in years ahead to try and rise to that challenge?

SJ: We've got a team of four in Inverness, and of course Strathclyde Enterprise so we're hugely aware of what it is to reach businesses in very sparse areas of Scotland. I think there is no doubt in some of our greatest success as a company and innovative companies are actually some, perhaps through resilience, perhaps through location, are based up there.

I'll give an example of TimeScan, which is an organisation based in the very north of Scotland working in St Andrews and I've done a huge amount of work in terms of sustaining partnership. That was brokered through Interface and the Innovation Council to start with and then I put a lot of money into it. So, it's not....

The opportunities are there. I think there's a real opportunity for the Innovation Centres to work alongside our experiences, and the team we have, in reaching those sparsely, isolated companies. So, rather than the Innovation Centres having to replicate resource and put individuals in the Highlands and

Islands, would it not be better use of resources to have our team understanding more about the opportunities where Innovation Centres can support those businesses.

It goes back to the point there, for us, we would love to learn more about how we can escalate some of the programmes that we have to date into some of the Innovation Centres, and they're companies that are, I would say, academia active.

Will it help by doing a blanket marketing campaign to every business in the highlands and islands about the Innovation Centres? Is that going to add more business confusion? What we're trying to in getting to in marketing to both is I think we just have to be clever but equally, take that bunch of great companies and support from the Highlands and Islands (200-250) that are very active with the universities and say, OK, so what more can Innovation Centres offer them as a starting point.

If they're not the relevant population, then let's look at what would be relevant with the Innovation Centres. I mean great work is being done in engaging some of the agricultural companies with respect to that particular area. But loads more could be done in respect perhaps with construction.

Again DHI have made some quite successful tractions on businesses in the Highlands and Islands and that remains a fantastic test bed for some of the more opportunistic or opportunities for remote digital in healthcare sectors.

Opportunities are abundant, and we would love to work with them rather than it having to be a kind of blanket approach.

DM: Siobhan, how well do you think business is aware of Scotland having Innovation Centres or creating Innovation Centres, do you have to be very focused on a particular sector to be aware of them, or how well are they being promoted and drawing business in?

SJ: This is a balance because there is no point in the Innovation Centres doing blanket promotion in actually reaching... That then is going to turn off for them and the right businesses. For example, you could do a blanket promotion to every life science company in Scotland but actually it's through stratified

medicine and digital health that's there's actually a lot more the types of business there that may not be able to be supported by those.

If there was blanket promotion where every business was aware, then behind that has to be the quick... If you're not appropriate to work with in an Innovation Centre, here's another organisation that can help you. I think it's that referrals and being Team Scotland approach that would be critical. I think there's no doubting, for example, through the Construction Innovation Centre, they've reached a lot of businesses, so there is a particular sectoral properties there and they're reaching huge numbers of businesses.

Are they working with individual core of businesses? Probably not. I think again, there's a real onus on how can we join up the dots here. Even if you are engaging and piquing the interest for business around innovation, it's not right for an Innovation Centre who can come alongside and help, because what we don't want is that businesses demand peaked and then it's not the right door, so to say, so really there's an emphasis on no wrong door for business would be welcome.

Do the Innovation Centres have capacity to work with every business? Probably not. Therefore, we have to pick things of interest and that's absolutely, I think, right because we want to drive transformation programmes and activities, so you we can't have everything. We can't have the Innovation Centres being absolutely everything, but there are other organisations that come alongside to be able to spread the load.

Publications like the RSE, etc., might be really good in awareness raising. I think each of the individual Innovation Centres themselves have very good marketing teams. I think what we're trying to do is work alongside them and the universities and make sure it's a job done properly and no wrong door.

DM: So this is going back to your view that your relationship, Interface's relationship, with the Innovation Centres has to develop and be clarified, or is it just about developing it further and clarifying it?

SJ: It's both. I think it has to be clarified, that it is not competitive but... Going back to the original aim and objective, it's about complementarity and exploiting existing initiatives so that, I think is a really key thing that needs to

happen to avoid competitive element that's currently on the way. Some Innovation Centres, I'm not saying all, but some, so that's that clarification. The second point is, absolutely in pan-Scotland.

TB: So for us to follow through on that, do you have a picture in your head that you can paint for us in which everything would fit nicely together and work perfectly.

[Laughter]

SJ: Every company in Scotland innovative?

TB: No, No. The relationship between Interface and ICs.

SJ: In a picture in our heads, I think it would be absolute clarity from our point of view of what companies the Innovation Centres would like to engage with and in what way. That goes back to are they looking for companies to join particular programmes or not? In which case, there are great opportunities for us to be able to refer in companies.

Equally, where if a company has that relationship, an existing relationship with the university that brokered the database, or perhaps funded in a particular way, and we see that as perhaps of relevance to some of the Innovation Centres, is that something they'd be willing for them to link to? There's a clearer method of referring in business. Alongside that clearer methods of the Innovation Centres, not in their objective or aims, if they would say, great company, we can't help you in this, here's a new base for us for you to establish particular requirements.

In that, transparency would be really helpful from our point of view. The secular of both would be a greater appreciation within Scotland. The landscape has... The innovation landscape has different actors and here's what each of our remits are and there might be a degree overlapping but actually we are Team Scotland here and we're not acting. I think that would be an opportunity for Scotland.

GR: How many are aware, as you talked to us about the skills of the Innovation Centres...?

GR: Did you say about the skills development should be done entirely through relationships with universities or would there be opportunities to involve FE colleges in that agenda as well?

SJ: I totally agree every college should be involved in the agenda. They are key players in that. And again, it's the breadth of what the industry requires from them, from skills and can really be addressed through the goals and the lens of the Innovation Centres. I think there's natural partners in further education colleges, particularly for agricultural and construction. Absolutely. They are the ones who are crying out for co-operation and joint approaches. I think again through the other programmes that may be more specialised, but I think there's absolutely the kind of...

It's been interesting the different evolutions of the Innovation Centres with respect to skills. Again, with the variety of freedom they've had to operate they have all evolved quite differently with different emphasis on that. So I think it is again opportune to look at across where are they currently touching and what more can be done.

GR: While we've got a couple of minutes left and in time-honoured fashion, I should ask you if there's any points you would like to raise, that we haven't.

SJ: Looking down through my files... I suppose the sixth question looked at whether there was relevance for having Innovation Centres in other sectors and I think that's a really key question particularly, I think in sectors that may feel at a disadvantage because they don't have an Innovation Centre with their particular sector in shining lights.

I think what we have in Scotland is an approach that has looked at some of those other sectors particularly in our SME rich, creative industries, tourism, etc. and there are other programmes, perhaps of lesser scale, that are operating in these areas and supporting challenges and initiatives. Whereas

what we've done with [Inaudible 00:43:18], so there's really good lessons to be learned there about how other forms of multi-party collaboration and co-operation between academia and businesses can actually have significant impact on those SME-rich sectors. I think that's a natural evolution of where innovation is in those particular sectors because innovation in a business driven sector is very different to innovation in the life sciences sector and I think we have to recognise that. Does one size fit all? Absolutely not.

Do we have other models that can be implemented, scaled and learn best practice by? Yes. I think part of the opportunity in almost producing brochures like this and it's firmly focused and quite rightly on the innovation sectors, tourism sector may feel at a disadvantage for an application like this. What more can we do to show that other sectors are not being disadvantaged through publications like this.

GR: Thank you very much for joining us. I thought that was a... You're our first witness for this sort of session and a very good witness at that. I would also like to thank you for the written evidence you have submitted beforehand. So, the next thing you'll from us is the outcome of this review, which will in September.

SJ: Thank you very much indeed. Best wishes with your continuing consultations. Thank you.

END OF TRANSCRIPT

File Name PARTNERS (SFC, SE, HIE) 1 June 2016

File Details

Audio Length: 00:85:47

Number of speakers: 8

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].

Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: Well good afternoon and thank you very much for coming. My name is Graham Reid and I'm chairing this review. This afternoon's discussion is being recorded and we plan to publish the recording at the end of the review, so in a moment I'll ask you to introduce yourselves for the record and when committee members first speak, they too will introduce themselves for the record.

We're joined today by observers on my right hand side from the two Enterprise Agencies, the Scottish Funding Council, the Scottish Government and Ekos Consultants, so they won't participate in the discussion but they'll be observing. I should thank all of you for the written evidence that you've submitted and we discussed it this morning and I can say without a doubt that each one of the committee found each one of your submissions hugely valuable, so thank you.

Could I ask you, perhaps Jim, starting with you, to introduce yourselves for the record?

JW: Sure, Jim Watson, Director of Innovation and Enterprise at Scottish Enterprise.

EM Eleanor Mitchell, Director of High Growth Ventures at Scottish Enterprise.

CW: Charlotte Wright, Director of Business Development and Sector Development at Highlands and Islands Enterprise.

SF: I'm Stuart Fancey, I'm Director of Research and Innovation at Scottish Funding Council.

GR: Thank you very much. Douglas.

DM: Douglas Mundie, I'm a Scottish Funding Council Board Member and I'm a member of the RKEC as well. Welcome this afternoon. The first question I'd like to explore and you can answer individually or collectively, however you feel... When the Innovation Centres were first created they were very much developed as pan-Scotland assets. How well do you feel they are delivering on a pan-Scotland basis?

CW: Shall I pick up on that? Douglas I know where you're coming from on some of that, given your location and interest, and Highlands and Islands picked up on some of that in our written evidence that there is some opportunity for Innovation Centres to do more across the board in Scotland. From our own experience in HIE we've seen, I suppose, the greatest attraction with the Aquaculture Innovation Centre, perhaps that's not surprising given the presence of that particular industry and in the Highlands and Islands.

I guess it's a question of penetration and resources and how we lead those assets that we have collectively, across the agencies and Innovation Centres, to

really achieve that as far as we can. Again, speaking from a Highlands and Islands perspective, I think it would also be realistic that there are some Innovation Centres where we would expect to see a strong relationship into our region, such as stratified medicine, but I think we'd like to see more opportunities to work together and develop that.

SF: I think, Douglas, it is a very important question. In setting up the centres, we tried – partly encouraged by Charlotte and her colleagues, of course, but also for the reasons you outlined – to ensure that the centres gave us their planning for how they might affect such national coverage and Charlotte is absolutely right.

There is definitely a variety of approaches we've taken, some were more effective than others, but what I've observed, some of the centres have taken a kind of roadshow approach of going to visit businesses around the country, which is good, others in a smaller number have built infrastructure of one kind or another, so actually trying to establish some kind of a presence, and that is probably restricted to some of the work aquaculture are doing, or will be doing, a little bit of the IBio refinery work on the west coast and the work the GSA are doing in Forth with DHI. So there's a limited number that have actually established [inaudible 00:04:29].

We shouldn't give up at all that national vision and that's extremely important; and we should ensure that if there needs to be any form of encouragement, to put it mildly, then we should do that.

EM: I think the only comment I would make is that it's still very early days in the Innovation Centres journey, I think most of them are still working on their first projects to prove their capability and capacity. And I suppose they work for the most willing businesses, the businesses that bring themselves forward to do that.

I think once they have that evidence base, once they have the ability to have the business conversations with the evidence supporting it to interact with more businesses, I would expect to see them ramp up their engagement across Scotland more than we're seeing potentially at the moment.

JW: The only thing I would add to that is by its nature, if it's demand led, there are going to be certain parts of businesses that are not going to participate. If you're creating demand-led opportunities, there are going to be some businesses that have capability and some that don't. So I think the aspiration's right but I think we also need to keep an eye on, sometimes this is going to be about focus around the opportunities and the businesses that are capable of taking forward those opportunities.

DM: We've heard previously that it may be possible to work effectively pan-Scotland through other agencies, such as Interface. How practical do you feel that would be for where the Innovation Centres are at this moment in time?

CW: I think there's some synergy that can be made there and from a HI perspective, we have some Interface staff [in the mix 00:06:21] That's been helpful in delivering Interface objectives. I think what we could do jointly as partners is work on promoting awareness and getting the information out about Innovation Centres, so I think perhaps that would be easier to do.

I'm not sure... the intention of your question was a kind of closer role in terms of actually delivering something. I think that the skills and expertise that they've built up in the Innovation Centres are used to deliver collaborative projects with businesses and other institutions, but certainly collectively we could use our efforts, perhaps more, to ensure that awareness raising is getting traction, particularly with business.

JW: Can I just clarify the question you've just asked, are you talking about what the Innovation Centres could do more in terms of their relationship with Interface? Or are you talking about the agencies here?

DM: It could be both. We've got a crowded space and bringing the Innovation Centres in has perhaps increased that, when you put in Catapults and [inaudible 00:07:32] and everything else. We've heard that there is potentially some reluctance to work collaboratively with Interface by some Innovation Centres and I'd like to explore whether that is a reality and whether that is

likely to hinder development of the Innovation Centres' offerings on a Scotland basis.

SF: Douglas, your question is a good one. It's an important one. When we created the Innovation Centre programme we essentially placed a very large, new set of structures onto a landscape that had existing activities within it. And of course the space in which those structures were placed was not exactly empty or its edges didn't match in a jigsaw-piece-like way with the edges of the activities and responsibilities of the roles that we placed on the Innovation Centres. So there was, has been, a process of discussion, negotiation, alignment, adjustment, accommodation between, particularly the Innovation Centres and Interface, since they both have some aspects of functions to do with connecting businesses with universities and enabling those activities...

But also, of course, we've been in discussion with other bodies like the FRC and I'm sure you know Catapult and other people who need to understand where they can either make use of or, if you like, leave the job to, Innovation Centres rather than necessarily have an unhelpful [inaudible 00:09:17].

I would say that perhaps the challenge that Interface has, if we want to go into that, the database they and the Innovation Centres have between them, is that the Innovation Centres, as I'm sure we'll say more than once in the next little while, are not identical to each other. So the modus operandi, the staffing, the expectations, the project structures, the kinds of businesses who are coming forward in this initial phase, as my colleagues correctly mentioned, this is an initial phase – they vary from centre to centre.

Which means that the relationship with Interface necessarily varies from discipline... from sector to sector. And that's been an interesting, and I think quite challenging process. And I don't deny it has had its moments where those have been difficult for the parties to find that correct accommodation. I have no doubt that we will get there, the Interface board have talked about this often and individual Innovation Centres have talked about it with us, often.

And as long as we keep talking about where those points of either potential overlap or a gap, even worse, appear then we can solve them. But it is a challenge and one that we entered into in the expectation that by solving those challenges we would end up with the very synergy that you referred to as the potential for extending the reach of the Innovation Centres and

extending the reach of the activities of Interface. We are already seeing the benefits of those collaborations and referrals, but I think that will improve and will continue to become cleaner.

JW: I think it depends. As Stuart says, the Innovation Centres are all very different. I think in terms of space and the customer base the innovations centres are serving. So if I take an example, I had a conversation yesterday with an Innovation Centre dealing with relatively small companies, relatively small projects and the question I suppose you guys might be asking is, could Interface have done that job through, for example, innovation ventures, versus the Innovation Centre who we're talking to?

And I think that's something that, as well as, how do we make sure there's complementarity, as long as that type of activity exists, what we've got to do is work out what we do about it, so that there's no duplication of effort.

DM: So moving forward, what do you believe could be done to ensure that the original vision is achieved more effectively and efficiently?

SF: The original vision of the Innovation Centre programme?

DM: The Innovation Centre programme, yes,

SF: Placing Interface to one side for a minute.

DM: Yes, leave that...

SF: That's a large question.

DM: You wait until Tim starts [laughter].

SF: Gosh. Glad I had a robust lunch before. So, what could we do, in a few short sentences, to help the Innovation Centre programme be realised more effectively?

DM: Yes.

SF: Well, in my view, and my colleagues may well have a view, but I hope this isn't too far away but maybe different... In my view we need to continue on the path we have set forward on reasonably resolutely. It's been put to me very often that one of the diseases of the public sector is an unwillingness to change tack too quickly before the benefits of investment or policy direction have been properly realised, so it has always been our view that if the Innovation Centres are to work we need to give them time and space to do so, provided, of course, that's justified.

We have a public duty to use resource in a way that we can justify. So we need to be thinking very hard about what we learn - this very review that Graham's leading here is going to be very helpful to us in understanding what we can learn so far. We've already learned many things about how Innovation Centres are developing, where those difficulties lie and we're trying to help them to adjust.

The divergence we've talked about in terms of operating structures, is partly self-improving, if you like. So what I think we need to do in the future is essentially retain the demand-led vision, this is about helping Scotland's business community or the NHS, I use them interchangeably, and other aspects of the user base to lead this relationship with the university sector through these vehicles, we need to give that increased emphasis within the business spaces where we can.

I think we perhaps still have work to do there to push this opportunity into corners that it hasn't been heard of yet. And we need to use the political support that we have to help give the centres the confidence to continue to take risk, to continue to be bold in their courting of their customer base. I don't think we should change anything fundamentally from where we're sitting right now here. However, as I say, Graeme might conclude that there is advice that we should consider as we go forward.

CW: I think you could hear a few times about there needs to be time for things to develop, but I'm going to balance that a bit, because I think we also need to be adaptive and flexible and looking at the programme, as we're doing now, is an important part of that consideration. But we also need to look at the individual Innovation Centres which are all quite different and may need to take different paths.

I think what we all need to do, in terms of the agencies and the political context, is provide that support infrastructure which allows adaptability and flexibility to change and respond quickly. I think if ever you hear the criticism from business about working with the university sector, it's about how responsive and how quickly they can react to the needs of business, and trying to get those two timescales to move together is one of the main things the Innovation Centres are trying to do.

So I think they do need time but I think we need to be careful how we use that time, it needs to be managed effectively. And if there are any difficult decisions or changes we have to make sure they are implemented effectively and rapidly when that needs to happen.

GR: Douglas, I'm going to move on, if that's all right.

AH: Alex Herbert from the Higher Education Funding Council for England. I'd like to talk a bit about governments. And Stuart's evidence talks a bit about satisfactory and unsatisfactory government arrangements and I'd like to hear more from you about how that actually plays out on the ground, so where that creates barriers to achieving the vision of the centres.

SF: Would you like me to start, given that you quoted me? I might be the wrong person to start with... In that phrase, I tried to summarise the conflicts inherent within the government's structures as we've established. So as I said in my written submission, we knew full well that the government structures would have within them elements that would be challenging to operate in, in challenging times as they arise.

But it was quite deliberate, so placing these said centres inside universities wasn't just ease, it was also to give universities great proximity to a group of people, the people who are employees and boards of these centres and the big companies that the centres are working with, to bring them quite close to a university environment.

So that government structure is a challenge. We've been asked often, so what does it actually mean? And it does, as I said in my written submission, boil down to quite straightforward relationship between those who fund the centres and the universities who are in receipt of those funds in return for particular deliverables, however we place on top of that a veneer of a business-structured operation, partly, as I said in my written submission, to give the ability for the boards to involve those businesses in directions that might need that kind of governance.

So if we set off on that line then that gives the ability for the boards to move it that way, we may see that over time when we talk about that, if you like. And also in order to ensure that those people we invite to come and help us run those centres on the boards and the management of those centres, who come from deliberately, dominantly business or NHS backgrounds, that they recognise the activities as being ones which they can take part in and contribute to.

So we know it's a challenge, we know in an ideal world we'd have a much simpler government structure. But the benefits thus far are, we are definitely seeing, and have seen almost immediately, some quite challenging conversations between the Innovation Centres' boards and management and the universities that are hosting them, and the wider university sector, which is extremely healthy.

Because it means both parties are asking themselves questions about how that relationship should work in practice and that was part of our design for placing the government structures such as we did. Now when things are very challenging, then ultimately the Funding Council has to recognise that our relationship is with a particular university and our care for public money is a partnership with that university. But we're not apologetic for having created the structures like this.

But I think it might have been [inaudible 00:19:47] or Charlotte mentioned already, we fully expect that as these centres continue to grow and evolve, we

may need to grow and evolve the governance structure to reflect the relationship they have with businesses in the future. But all of it tied to that original vision.

CW: I don't know what we can add to that [laughter].

EM: Sorry, I was just going to add a reflective note on your looking back that we set them up to be private-sector led. Was there enough introduction to the university environment? If I reflect on many of the Innovation Centres and the kind of teething trouble they had at the start, a lot of it was down to the misunderstandings of how university systems work. And I think some time taken to really work that through, so, we're working in this environment, it's a different environment, here's how things are done.

And I think some universities probably sat down and did that with their Innovation Centres, others didn't, and so we were very aware in the first year, 18 months, of a number of them struggling to understand, why do we have to hire in this way? Why can't we get our own accounts? All these sort of things which, to people who work in the university sector, are obvious, but for private-sector people, it really makes no sense whatsoever.

So that's a kind of reflective bit. On sustainability, moving forward I think there will be, again, the variety between colleagues about, do we remain in the administrative hubs that we're in at the moment? Do we see their future as taking them outside of the university sphere? And in which case, what sort of corporate governance model for that? I think, going forwards, that will be conversations I expect we'll be having over the next period.

CW: Also, maybe just to separate administration, which in many cases could be more efficient and effective, and what we're trying to achieve through governance, which brings together the role of the university and trying to affect a culture change by using the university in that host way. I think there are probably a lot of improvements that could be made in terms of administration, but the overarching objectives of that kind of governance model, I think are important in this case.

AH: Because from one perspective it looks like that kind of governance model could potentially dampen the innovation or affect the risk appetite if it's contained within a university, but from Stuart's response, it doesn't sound like that's the experience. So I'd be interested to hear your views on that.

CW: Whose views?

AH: So the appetite for risk might be affected by being sitting within a university rather than being purely industry led and whether you see that on the ground or the reverse?

SF: Well if risk is interpreted as, for example, enthusiasm to speculate in hope of later accumulation, then the nature of public financing does limit that, in that we're not quite able to give Innovation Centres or indeed our universities quite the freedom to use the money we give them in quite that way. So yes, there is a public financing limitation to that to some degree. Is there a risk appetite diminished by the proximity of the university infrastructure, I don't think so.

I think there is a lack of, I think it's the fact that we, the Funding Council, are at the moment the largest single investor. There isn't a lot of, if you like, generated surpluses to play with within the centres. That is limiting the ability of the boards, for example, make some risky decisions. That I could see. But we need to get to that point. For some of them, I think some of them will get there and they will be able to operate like that. Others may always be strongly publicly financed but with such a benefit derived for society that we can justify that.

JW: I don't see them as risk averse, I don't. If anything the Innovation Centres have worked really hard to develop projects with industry. I would say a bigger issue is finding demand-led, market-opportunity-driven projects, which, to a certain extent, has been a big challenge for most. So the appetite for risk through the governance, I wouldn't say has been affected, but it's being able to take a proposition that says, we know industry wants this, and we've got universities that can help you solve that problem. That's been more of a challenge than anything, rather than the risk appetite.

AH: Just a little bit about monitoring... Do you think the monitoring and evaluation processes as they stand are appropriate or need updating?

SF: Does anybody else want to start, because I feel like I've talked too much.

EM: I think, again, it's been a bit of an evolution to get to where we've got to. I appreciate the Innovation Centres submitted their own version of how they felt they would monitor their own performance when we first submitted our bids, the necessity and the ability to have a common set of measures to use across the Innovation Centres I think causes some tension within the Innovation Centres around what they thought they were going to be measured against versus what we are being measured against.

But looking at the actual measures themselves, I believe they are appropriate measures and they will capture the different stages that the Innovation Centres are on. So in the early days there are no projects, you are setting up and getting going, your exemplar projects are exemplar projects and you need to do them for a certain reason, and then you measure engagement with business, actual projects as it evolves, I think the management framework gives us the ability to measure that journey as they go through their eight years.

CW: They're finding themselves. I think it's fair to say the monitoring and review sessions, they're a bit like this, they've evolved over the time as well. And a conscious decision was taken to make that much more of a strategic conversation, rather than a grilling and 'defend yourselves' approach and I think that shows a bit of maturity and understanding both from the Innovation Centre's point of view about how they interact with the agencies, and in particular the Funding Council who is providing the majority of resource, and recognising actually that that's about a partnership that we're all engaged in.

SF: The one thing I'd add, which is about our risk. So the Funding Council's investing quite a lot of money in this initial phase of the Innovation Centres

and we may – we don't know – we may invest more. The centres are a risk in and of themselves. We can't be absolutely sure how all of this will turn out. So in order to give our board comfort, we actually paid close attention to what is and isn't being achieved and what is and isn't being done.

This degree of monitoring and oversight is, in my view, perfectly proportionate and reasonable. So we're asking Innovation Centres to monitor themselves as a business would, and to share that with us. We're paying close attention to the operation of their boards through staff of my Directorate who are there with them, and colleagues of Scottish Enterprise and HIE also. And we are asking them to meet us annually to give us, as Charlotte said, an increasing strategic view of how they're getting on and where they are going. And I don't think that's actually hugely burdensome and it does give our board some confidence that there is monitoring and oversight of progress.

GR: In other domains, I've watched people struggle to work out what to monitor and oversee in innovation. But I'm not hearing that that's a problem. Is that fair? Eleanor you said that you felt it was all working okay, but most people really do struggle to know what to monitor and oversee.

EM: I think they are monitoring the tangible engagement end of innovation, so looking at how many companies are you engaging with, how many projects have you got, how many of them have concluded, how much money have you spent, those kind of things... I think the ultimate measure that people struggle with is the actual impact of that.

So, what has that led to? So, has the company grown as a result from the funding they got from this particular project, as opposed to some of the help they might have got somewhere else? So that's the bit that I'll pass to Jim because he's much more knowledgeable about innovation measurement than I am, but to me that's the difference, the difference is we're monitoring for one reason...

JW: I can imagine we want Innovation Centres to ultimately create significant impact and we can see that we're growing on the expertise and the research from the universities. But we want to see that, in a sense, coming through the

businesses that they're engaging with. So it needs to be a mix of activities, outputs and impacts, to be perfectly honest. I know we talk about [inaudible 00:29:37] quite often as one measure but it is one of many.

And I think it shouldn't be too narrow a focus. But for me if the measurement has activities, outputs and impacts, instead of judging them, it's about the impacts for me, it's not about the engagement. We're always trying to do better with academia in business, for example, but my understanding is that in Scotland, our collaboration, while it's vastly improved between academia and business, it's pretty good compared to UK and UK is pretty good compared to Europe. So we do quite well on that front, we could always do a lot better. But if that was what it was all about then I think we'd be missing a trick, but I don't think that is the measurement framework, as I understand it.

SF: It is that mixture of inputs and outputs and we're also encouraging the centres to capture as much of that further impact out into the businesses as they can actually get hold of. So we ask them to monitor what they can from businesses that they've worked with on subsequent impacts and benefits, so we hope that to accrete all of that, and a common framework across the centres gives us that opportunity to build it up.

We consciously set up the framework with help from our colleagues in Enterprise Agencies in such a way that that information will, over time, allow us to apply economic models, the kind that we use for other forms of business support, so that we can make some sort of comparisons of the effectiveness of this intervention with those that might be made in other forms of business support that the public sector has made.

TB: Tim Bedford, a member of the Scottish Funding Council's RKEC. So I just want to start off with a simple question, which is, in 2012 the Innovation Centres programme was set out with its original vision, aims and objectives. I just want to ask you to reflect on whether those original vision, aims and objectives are appropriate today?

SF: I think so [laughter]. I think even more so, if we look at how the expectations of the Scottish Government on those of us in the public sector and then the

expectations of the Scottish Government on our colleagues in the private sector have evolved from 2012 to 2016, the expectation is that innovation will play a greater role in the four Is underpinning the Inclusive Growth Agenda of the Government's economic strategy, that is all emerged since 2012.

So I don't know which cart led which horse, either way, there's a match between the Innovation Centre programme and the greater view of the Scottish Government, also the way the Scottish economy will thrive has become better and better. I think the highly collaborative ethos of bringing public sector agencies more closely together in a common purpose to affect economic shape and value, using the assets at our disposal which in this case include universities and over time we hope the colleges, that agenda to us has become clearer and clearer to us as being desirable both desirable by us, as ways of sufficiently discharging the responsibilities we've been given, but also desired by those who provide finance for what we do.

So I think in that demand-led innovation support, using the excellence of our university sector, and as I said increasingly our colleges, to give businesses an innovation advantage to help them grow and prosper and to build communities of academics who are engaged in that enterprise, focused around these centres, that has simply become more pressing, not less.

EM:

I think one of the key things in that initial vision was the desire to have some kind of transformation, step-change, those were the kinds of words that were used. Perhaps over that time we all get quite close to it and we don't necessarily recognise the distance that's been travelled on some of the things that are actually making that change within the innovation landscape in Scotland. It's certainly brought the word 'innovation' to the fore, within Scottish public sector absolutely.

And I think Stuart's right, what's led to what in terms of the ongoing debate about innovation, and I think without the movement into Innovation Centres we would have a lot further to go in that debate. Bringing together the [inaudible 00:34:27] agencies actually is a really important step. That might seem like something that's a bit of a no-brainer, but actually achieving that in a way that we can work together and challenge and unite towards this overriding vision actually is something that is about making that transformational change. They're the important bits. Actually standing back

and doing a review exercise that you're doing now it's actually important to look at the distance that we've travelled in that four-year period. And what it's actually likely to produce in the longer term, which I say will be even more than we've had in these initial phases.

TB: I'm happy to move onto the next question if you don't have any more to say. So, the formal question is really around the way the Innovation Centres are functioning and in driving forward this cultural collaboration, research pools love those sorts of initiatives that have taken place, they're building on a long tradition of collaborative activity and what we've understood from the documentation that we've had is that there's quite a diversity of models between the Innovation Centres and of course that was part of the original approach to allow industry to define what they should be.

Do you think, on reflection, and also thinking about the other organisations that we have, such as Fraunhofer, UK Catapults, even Kicks. Are there things that we can learn from that as we evolve the Innovation Centres further in order to make them even more effective as engines of collaboration?

SF: Yes. That's partly impossible to answer any other way. Of course there is. What exactly is hard to predict because some of that is in the future. So what we can reflect on is what we've learnt already and what appears to have been helpful already. I think that there is a health, or a noticeable imitation of some of the existing structures, which shows that some of the existing structures have got good things going for them.

So, for example, the concept of having two or three very significant businesses at the heart of the AFRC has been essentially imitated by one or two of the centres who have similarly set themselves up around two or three anchor companies who have got very, very strong investment in the early stages of this. We've also seen some very healthy coming together of the Catapult model and the Innovation Centre model to establish, by working in an intertwined way, how to ensure the maximum benefit is reached.

So the SMSIC and [inaudible 00:37.25] Catapult relationship is extremely intertwined and that's a very, very good thing, we hope to see more of that. I can't remember what's been publicly announced, so I won't say, but we hope

to see more of that. That form of working very closely together gives us confidence that there would be unhelpful [inaudible 00:37:45] conversation, I think. I think it's worth stressing the variety, so as not to get too concerned about, or be too prescriptive about how one set of actors can work with another.

It's obvious, it's noticeable in some of the ICs, for example, they have taken advantage of the existence of the research pools to give a very, very pre-ordered university relationship setup, and so on. Others have taken advantage of pre-ordered business structuring, in order to give a very structured business relationship, the construction of the Innovation Centre's relationship, the construction of ILG. These are very different across the centres and so to be able to say what has the programme learned from other programmes is really hard to say.

The individual centres and the way they have operated are picking some good things from what's around them and are benefiting from it. Usually, by getting very close to it, rather than by distant observation and copying, is how I've seen it happen.

JW: Probably two things from me. The objective is to have demand-led market opportunities; I've probably said that three times already. That's a really tough bit. And in my experience, most of the models that work really well start at that end, and then take that proposition to businesses. And I think it's mixed in terms of experiences in the Innovation Centres and I think some have done that better than others. But if you can get that bit right, the rest of it becomes much easier. I suppose the second aspect is a number of the models – the funding models, the business models – have private sector commitment and some of the Innovation Centres have private sector commitment.

And what I'd be really interested in from the review is whether those that have business membership models are doing better than those that don't. Because my experience of looking at other models is when you get industry buy-in, and I mean money, you tend to get better impact. Because they see the value in it. They can see what the university can bring and what the Innovation Centre can bring as part of that relationship.

So I suppose those are the two things, but I agree with Stuart, there are ingredients in there with some of those Innovation Centres and it wouldn't be

a 'one size fits all' either. I completely agree with that. So some things in a business membership model might work very well in one area but might not work so well in another.

CW: The only other thing I would add is that actually what you see is the eight Innovation Centres learning from each other as well, very much so. Learning best practice and learning the pitfalls not to fall into as we go through. I was particularly struck, we had a meeting at the AFRC building and the CEO of the AFRC expressed vociferously that he wished he could be part of that group as well because he felt that he could obviously contribute his learning about the AFRC but also gain a lot by having a group of like-minded colleagues who were struggling with the same issues, potentially. But some other issues to hear of as well. So I think there's a great opportunity there for us to bring those individuals together on maybe a wider basis to share experiences and to learn from each other.

TB: If I could just follow very quickly. Jim just pointed out demand led, so I was wondering if one of things that differentiates the sectors that are being aimed at with the Innovation Centres is that in some areas industry knows what its demands are and in other areas, industry doesn't quite know yet, or it's not evolved to a level of innovation maturity where it really has got a consistent sectoral voice.

JW: Well if you take, oil and gas, it's a great example of that. We probably know that the innovation challenges are for the industry, I've known for 30 years, but the real challenge is how do you break that down into manageable chunks so that you can actually go about tackling the problem? So the emergence of, we've now got the oil and gas Innovation Centre and the oil and gas technology centre coming along, I think the proposal there is to try and break some of those big challenges down into manageable-sized chunks.

So that's an example where industry probably knows where the problems are but they're so general and they're so wide, it's very difficult to make any real progress. And to a certain extent, that might be an opportunity for innovation. I'm not saying that's easy to do that, but... and that's one where the innovation

challenges are known. But yes, I would agree in some ways some of the challenges aren't as well known and that's been part of the exercise that some of the Innovation Centres have had to go through.

EM: Or to be specific, some of them didn't actually make it through to becoming Innovation Centres. For instance, the tourism and creative industries reflect exactly that in terms of the makeup of those sectors and not being able to say, here's the one big technical challenge to fix tourism, because it doesn't operate like that.

So we need to work in different ways to support those sectors and indeed we all do. But as a consequence of that we've actually tackled how to support those sectors in a different way than the Innovation Centre model.

TB: I'm struck by Jim's observation that you would expect the ones where... whose business leadership is expressed in financial investment, would be the higher performing ones. I'm acutely aware of evidence elsewhere, I'm just wondering whether the monitoring and evaluation frameworks are able to give you lead indicators or whether you have to wait for the cash to hit the back of the till?

SF: I think it'll take time in order... if this is about impacts, which I think is where we're coming from, I think it'll take time to demonstrate whether one type of business model is working better than another. I'm not saying that that will happen, I'm saying that from looking at other models, if you take Fraunhofer, it works on that [inaudible 00:44:22] basis and that seems to be something that works particularly well.

So it'd be interesting to see how the different business models operate and which one will create a great impact. I suspect at the moment, given where we are, some are more mature than others, it might be difficult to make those comparisons at this point.

JW: Perhaps measuring the financial engagement of business, that will tell you the existing disposition of business, rather than whether the Innovation Centres are adding value.

CW: You have to be slightly cautious with that, I would say, because in talking to some of the Innovation Centres, they're dealing with early-stage companies who are cash strapped. So their engagement is not necessarily in terms of money, it's in terms of working out, is it better to put my resource, my person, working with an Innovation Centre on this project? Something measuring monetary value is not necessarily... sorry, monetary commitment is not necessarily going to lead to what I think we're all trying to grapple with here.

JW: Yes, Eleanor and I had a chat with the Oil and Gas Innovation Centre yesterday and most of their client base is small businesses, so their industry input to that was relatively small because of the nature of the companies that they align with. Whereas you might go to some of the other Innovation Centres who've got a much broader mix of large and medium-sized companies where it might be chunkier projects and the value of their contribution percentage-wise it might be the same but in monetary terms it might be larger.

SF: We are being asked when the centre programme was quite new, at a conference I was asked, how will you know when this is working? And part of my answer was, well, these have been set up with businesses putting actual money or time or effort into what they perceive as being financially beneficial to them in the short to medium term.

If those businesses cease to find that looks promising, then we assume they will retreat quite quickly, particularly if we're spending other people's money – their investors' money – on those programmes, so we're looking at the business engagement as being very, very important. The concrete business engagement in the centres has been a very important indicator of whether or not there is that confidence.

We do notice, for example, in the aquaculture Innovation Centre, that the proportion of Innovation Centre's funding that is going into projects is quite low, relative to the amount of money that some quite large companies are willing to place in those technical challenges. If those companies see benefit flowing, they will stay or go. And so we're quite confident that canary will help us.

JW: I do think the sustainability of some of the Innovation Centres will depend on how much industry buy-in they get, that's my honest opinion.

WF: Thanks, Jim. I'm Willy Findlay, I'm from GlobalScot and that leads right into the question that I wanted to bring up. If you go back and look at it, ICs were set up to help solve industry-defined problems. And the question I have is, is industry today appropriately aware of and engaged in ICs? Are we getting enough feedback from them? Or are they aware of it and only serving key industries that we're already looking at now direct?

EM: I think we've talked about different models and they've gone about it in different ways in the Innovation Centres. I think there are some quite dramatic figures of numbers and businesses touched by the Innovation Centres, so the reach I imagine you could say they've tried really hard to talk to everyone they could about Innovation Centres.

I think what we find is the challenge of converting that into something substantial is the biggest challenge, because how many companies have that appetite for engaging with a project that involved a university, etc. Well there's that kind of hurdle that needs to be got over first by education of, this will be a very useful thing that will help your business grow, etc.

There's the hurdle of, what is it going to cost me? How am I going to be involved? So there's lots of steps that they need to go through to actually translate that reach and that touch to the hundreds of companies in Scotland into actual demand-led innovations that Jim has talked about. And I think the exemplar projects we talked about earlier are part of that mix as well.

That will help start to translate some of that, are you interested in working with an Innovation Centre, into, here's why you should really think about working with an Innovation Centre, here's the business impact it will have if you work with us. And I think we're just starting to get into that phase now, we'll hopefully get more traction from the kind of introductions that have happened up to this point.

JW: I think part of the expectation is the people coming from industry to the Innovation Centres, they themselves are knowledgeable, experienced and networked in those industries, so that gives you more of that insight and... We touched the point that Eleanor made. Most businesses tend to go to suppliers and customers around innovation, so we need to get more out of academia in business but it's not first choice.

We didn't factor that into their expectations. If you look at the Community Innovation Survey, on our list of partners' universities don't fare highly. They go to other people first. And a part of what we are trying to do, I suppose, is to get them to recognise that value, get them to recognise there's more to be had around that but it's not a natural preference, because they work with customers and supply chains and all the rest of it. First they see if they can serve something that's going to drive contracts.

SF: A couple of brief things I can add, one that I think has been mentioned already. We view the Innovation Centres as being... this is following on from the point on business culture... So, in order to increase demand for innovation, we want to help businesses recognise some of the opportunities that are there, to which more entrepreneurially minded people, that cost-benefit analysis needs to be clearer to more people, that it's worth the risk-taking, that it's worth the time and effort to get to know perhaps structures and ways of working, even with universities that are new. So that's quite a big cultural shift for Scotland actually.

And so we think of the Innovation Centres as not being the whole answer to that question, they're contributory to this. You have to look at the whole can-do framework of activities to help Scotland become a more entrepreneurial and innovative country and these Innovation Centres are one of the pillars within that set of contributions, because it's a long-term process to help a larger number of companies become more ambitious.

That was one point. The next point was... I've forgotten what the next point was, so I'll leave it there [laughter].

CW: I think that point that you just made then Stuart is actually quite critical. Innovation Centres aren't attempting to solve innovation for Scotland, they are

part of, what by its nature has to be quite complex, and I know perhaps there is criticism out there about what that landscape looks like, but it's a complex issue to deal with, therefore its solutions can be complex and it's not going to be just one simple 'here's your fix'.

And I think we created some of the Innovation Centres which are targeting certain sectors and some of them are more [cross-cutting 00:52:22] so those in themselves give us some comparisons between those that are taking a slice right through a sector and things like data and CENSIS which have the potential to be quite far reaching across a number of sectors. So it's evolved into a really interesting mix that's working as part of that growing innovation landscape.

TB: I guess just to close my part... Any of the projects that have come forward, have the Innovation Centres found them challenging and rewarding to them? Did they get any results that can add to that?

JW: There is one that kind of springs to mind and I can't remember the name of it. And why was it interesting? It wasn't quite what I would describe as [near 00:53:11] market, but it was a really interesting project that covered a number of aspects that were sometimes quite far back, in terms of the science or whatever, all the way through to real possibility.

What was really interesting and challenging about it was that it was quite a chunky collaboration, and I think the Innovation Centre really – as we all do, to be fair – wrestled with is, how do you get everybody on the same page? How do you get expectations lined up? Because collaborative projects, particularly around innovation, do tend to create more impact, but they're hugely difficult because people have different expectations, and certainly one of the conversations that we had with the Innovation Centre, was there anything we could do to bring collaboration expertise to that?

Because from our experience, people out there that... Some of the universities, for example, are extremely good at doing that... So I think the big challenge was around collaboration. But the potential for that project looks huge. But collaboration, for me, was the really tough bit of it.

EM: I think that's right, because the projects that are just one company to one academic group are fairly simple, as long as the culture is right on both sides, that appears to be fairly simple. The challenges come when you've got maybe a business that doesn't really have the resource or the mind-set to enable the best working with the university, or a university academic that has the technology skills but has not worked in business before and probably doesn't appreciate the timescales, etc. we've talked about.

So, that one-to-one is usually fairly simple but can throw up some problems. I think where the problems do come when you have more than two parties around the table so you are trying to manage delivery, expectations, all those kind of things. That become a bit of a pressure. Risk/reward.

F1: I just wanted to say, the example that we highlighted in our written response around [inaudible 00:55:18] so it's quite a practical end of the spectrum, and I think the good thing about that was actually the support that the Innovation Centre actually gave us the confidence to actually make a significant investment to that, so it works both ways and it helped us to say, yes, we're happy to take this risk on the basis of working together.

SF: I'm very pleased to see the variety of projects that the Innovation Centres are pursuing. So we've talked about the different scales, some of the centres are looking at big, big portfolios of really quite modest, quick projects and that hopefully will touch lots of companies, stimulate a lot of thinking, perhaps make a big difference. Other sectors are looking at much more modest number at any one time, with some big industry challenges.

Aquaculture is a great example. They are rigorously sticking to a small number of really big industry questions for that industry, which are transformational. They're go, no-go problems for an entire industry. That variety is really good, because if part of our goal here is to affect a broader – and it is – a broader cultural change in Scottish business to be more attracted to the notion of taking risk, investing for the future, being ambitious, then we don't actually know – I don't think any of us know – exactly what's going to stimulate that.

So the messaging that comes from a variety of different forms that we can help the Innovation Centres to get moving, some of those things will help, but

we don't know entirely who it will help, where and in what order. So I was delighted to see the Herald's report about the Industrial Biotechnology Refinery, Heriot-Watt, the day before yesterday, I think they also mentioned Aquaculture...

Because perhaps that will get somebody major in a chemical company going 'really?' Perhaps that will do it... Or perhaps it will be the sea [lights 00:57:00] project that the aquaculture team are working with [inaudible 00:57:05]. Or perhaps it will be the water torture of yet another little story, another little story, another small project that somebody hears about in Scotland's networks, from one of the more, kind of, smaller project portfolios.

So these are all unknowns but that variety will give us the fighting chance of having the effect that we want to have. And we will learn, perhaps this review will help us learn, whether one form of project support is more effective than another in helping wider impact to be evident.

TB: I was over at Interface this morning, which was very useful, and one of the things that's come up in some of the documentation is about people understanding the landscape, the innovation landscape and being able to distinguish – simplifying is a word that's been used sometimes.

Are from your perspectives things, structures, agreements, or ways to divvy up the innovation landscape that would make it, at least operationally useful but would enable people to understand naturally when you would go to Interface or when you would go to an Innovation Centre?

SF: If we knew the answer to that particular question... [laughter].

TB: I'm not asking for a complete answer, I'm asking in general, are there any broad indications that you would have... for example, you're talking about one-to-one projects, I don't know if that's perhaps one of the elements...

SF: My view is that a certain element of redundancy in there is a good thing because if there is too precise a prescription, then we'll get the prescription

wrong for somebody and they'll end up unable to be helped. I think a degree of imprecision of who does what is not necessarily a bad thing.

However, we absolutely – in fact, all of us have talked at some length and often – about whether we could hide quite a bit of the wiring that we are currently stooped in. Any diagram you draw ends up looking somewhat like spaghetti.

So, to hide quite a lot of that, whether it's a business or as a university or a bit of the NHS or a bit of the Scottish Government or whoever, who needs something, some form of assistance, then there is potential for that hiding. I would hesitate to tell you where there is too much redundancy, we have been trying to simplify it.

But we see simplification in entrepreneurial training support ahead of us, for example. We see some simplification in the various perhaps ways in which we present the many forms of support that we have between us. So we simplify the language. So, yes is the short answer and perhaps that was the long answer.

CW: Obviously some of it is within our control because it is Scottish public sector funded, some of it, of course, is more UK and European as well, so our ability to align all of that is a little bit more challenging, I'd imagine.

GR: Can I return to a question that I think several of you have touched upon, which is the sustainability of these Innovation Centres. One of the interpretations of sustainability is that you will achieve sufficient levels of industrial income to be able to cope with lower levels of public support. I'm just wondering whether impact and income are going to fit together well. Is chasing income going to eventually be at the expense of impact?

JW: For me, it's not an either/or. What tends to happen is that businesses will pay for something they value. So what you'll see is the levels of income going in if what they think they'll get out of it is something that is going to make a difference. Does it mean that some of the Innovation Centres, to take an example, would spend their time trying to raise money? Yeah it does, it probably does.

But I think if you get the proposition right, you get the offering right, then to a certain extent that makes that easier. I suppose the question is, do you want to continue to put public sector money into something that doesn't demonstrate any impact? That's quite a black and white situation. If it wasn't creating that much impact, why would you continue to support it? Whether in public or private?

CW: I think you raise a really interesting point though, Graeme, almost two things trying to come together there. In that business demands, as Jim says, absolutely people pay for what's going to make a difference to their bottom line, and that's the way you'd want our account managers to be supporting that awareness of Innovation Centres, use this and it will make a difference to your productivity and your profits. That's language you can understand.

But at the Scotland level, I think we also need to have that strategic overview, which is maybe your point about impact, to say well, as well as dealing with it from the business side up, we do need to be clear about what we see as strategic innovation challenges, which then you almost do have to do a bit of 'top down' to say, unless we take that strategic, unified vision about one of the big innovation challenges for Scotland, and set them out in a way, and perhaps we'll accept to just continue to support that, because otherwise would that happen... So I guess my answer is that we need to have both things, but both things that are working together.

SF: I think we separate the notions of income from surplus or surplus from profit and these are not all quite the same in answering the question. Charlotte's put it very well. There is, in my view, absolutely likely to be a case for some of the centres to be publicly supported to some degree because the impact they have on the economy and on wider society is so evident and the business model that would allow that to be self-supporting doesn't exist.

So it would be a good investment, maybe not even a long-term investment, for example the Fraunhofer Centres are so structured with the German Government, that support is something that we would call sustainable because its impact is well worth the investment, the return to the taxpayer is well worth it. And that may well be, for some of them, part of their future.

I don't think we perceive an attempt to make highly profitable, so I don't think chasing profits or very large surpluses, is going to be a game that any of them are in. But I think it is possible that some, as Jim has indicated, actually move to a situation where they can have a sufficient surplus, that their need for public finance diminishes, if not disappears. I can think of a possibility where that may actually happen.

So we foresee that range of futures. But your point is really, really important. The thing that matters to us is the impact on the Scottish economy. If that requires public finances to generate that impact, and if that impact is ongoing and clear, perhaps that's a good investment for the public purse to continue to invest in.

GR: I think I'd try to explore the incentives and rewards that an Innovation Centre perceives. What does an Innovation Centre think good looks like? And if good looks like revenue generation, then it will pursue a path towards revenue generation. But that may not be a path towards impact. Because they're pursuing... if they are going to end up with a balanced P&L account, they will need to be profit-making in some activities in order to tolerate the losses in others. So all of a sudden you're generating a lot of private sector technology consultants but that may not have been the original vision.

SF: But for that model to persist, you would need to be absolutely confident that at some point that impact's going to come as a result of that significant investment.

GR: All right, so I'm now going to come back to the monitoring and evaluation point. I'm not holding you to some phrase that was uttered, but the question is do you have the management information? And do you have the understanding of the Innovation Centre model that allows you to tell whether you're on a pathway to the place you want to get to, because that's what the monitoring and evaluation will one day allow you to do, rather than just testing how near you are to that.

EM: I'm not sure if this is the answer to your question. To me there are competing demands on Innovation Centres. They've been set up with Funding Council money, so they are clearly focused on, how do we work with the universities? We have to work with the universities and get value from what the universities do. Quite a lot of what the universities do is far from market. To get value from that you need businesses who are looking for things far from market.

We have very few of those here in Scotland, so they tend to be more international companies. So if you really want to drive money in from large companies and you're looking to work with universities, that potentially could be something that would drive Innovation Centre behaviour, looking for the large contracts with large non-Scottish based companies far from market.

So that's a kind of extreme that I don't think we see but there's a potential for it to go there. The other extreme, I guess, is that lots of small companies have problems they want solved, university research could help them solve that problem, but probably it doesn't generate much profit for the university or indeed for the Innovation Centre itself.

So those are the two extremes, but that will have a potential impact on the Scottish economy, because those companies, some of them will then go on to develop those innovations further to marketable opportunities, etc. So there is, to me there's quite a range there of the two. And you do sometimes have conversations with Innovation Centres that tend to be more of the, well I don't understand why I'm supposed to be working with a Scottish business base because it's hard, because they're very small companies and they're very small pots of money that we're putting into it and it's very hard work to do it, but it's not that they're saying that they're not going to do it, they're obviously struggling with that.

So when you talk about sustainability, where does the money come from? It doesn't come from all these small companies.

SF: You asked whether or not we have management information and oversight to allow us to know whether they're heading towards a vision that we know is the vision that they should be heading towards, that vision of impact that Eleanor's been outlining. I believe we do, partly because as Charlotte highlighted earlier, we have moved our monitoring evaluation to give us a more forward-looking discussion.

So we are talking to them about their plans, not just their historical progress. And we are keeping an eye on what's motivating the boards and management of the centre, what opportunities they're chasing, rather than what they have just done. So that's important. It's also important in that setting the KPIs for the centres, most of those are very impactful.

So they're not tasked with making a particular profit or turning over a particular amount of money or growing to a particular size, or even tasked with being financially self-sustaining. They're tasked with creating a number of jobs in the Scottish economy, they're tasked with increasing volume of business in a particular business sector, to grow it from small to big, so IBio, for example, have some very clear ideas of how big industrial biotechnology in Scotland could be and what slice of that they hope to be able to influence. So do others.

So because those are their targets that they're tasked with, that's good for us because that's what we want to do as well. And we want them to use their expertise in the higher education sector and if we can, the further education sector, as much as they possibly can to get there. There's one thing that was touched on earlier, and I didn't get a chance to say and it's worth saying here because it's pertinent. It is true that not everything that businesses who wish to be innovative want... sorry... the survey that Jim referred to says that businesses go to two or three other sources by preference before turning to an academic institution to solve a problem or answer a course. So in our original vision for the centres we included this concept of a community, a community of businesses and academics.

I would thoroughly hope that over time we'll see increasingly businesses using the centres as communities of interest for themselves, we've set up that concept with Interface, you've probably heard about it before. So at least if they wish to turn to a supplier or a competitor or a colleague or a guy they bumped into in a bar, those people will be there in that orbit around Innovation Centres and that will be another benefit that the centres will bring to the cultural change of Scottish businesses.

So no, universities are not always the answer, they're not a silver bullet, they are a contribution to what Innovation Centres can do, which are themselves a contribution to Scotland's wider innovation improvement.

JW: I don't know if I can answer your question, partly because I'm not privy to the detail of each of the Innovation Centre's outputs. But I suspect it depends on a judgement call and some of them are more mature than others. And it depends on whether you judge them purely on impact or whether there are other factors. It really depends out of that performance management framework, what do you think the most important factors are at this stage? So, I don't think there's a black and white answer. I think the potential's there, whether you get answers to those questions at this stage, who knows?

GR: I think maybe the key is 'at this stage'. Because you can imagine the Innovation Centres and the funders are all going through all their [inaudible 1:12:19] process... Well I'd find it a bit surprising if all the management information processes were magically in place at such an early stage. Stuart mentioned further education briefly.

And there's a sort of underlying assumption that Innovation Centres are sitting between universities and the business community. But we've seen, in some of the early evidence we've received, quite a strong emphasis on skills. And it's not self-evident that all the skills will be supplied from higher education. Do you think there's more to do to engage the FE community in this agenda?

SF: Yes and we're doing that in two ways. One way is being led by the Innovation Centres themselves. When you look at the Industrial Biotechnology Innovation Centre who recognise exactly that skills, that breadth of skills requirement for a growing industry engaged with Forth Valley College to build an HND, I think, a course specifically to support the needs of that growing industry.

So some of this is coming from the centres themselves. We are also, at the Funding Council, exploring through our Research and Knowledge Exchange Committee, led by one of our board members [Audrey Cumberland 1:13:47] the potential to be more systematic in the way we, in general, work with the college sector to support innovation in Scotland.

So from that, we hope to grow our relationship which could be more productive in terms of skills and perhaps in answering some of the needs of industry in ways that colleges may be able to do. I think it's also fair to say that

when we started the centre programme in 2012, less of that was in our mind than it is now.

So the language that we used at the beginning was exclusively about universities and businesses and it has occurred to us over the intervening three or four years that there is the potential in Scotland to work harder with the college sector, which has itself been altered dramatically over that period – dramatically. So we now have a different college sector than we did four years ago, so working through that is definitely much more on our minds.

We haven't changed the language hugely but we're getting there as Audrey's work brings forward some potential to work with.

GR: The University of Highlands and Islands, as I understand it, is a higher education and further education provider. So is that university already some way down this path?

CW: In relation to the Innovation Centres?

GR: Yes.

CW: That is one of the areas where we would perhaps like to see better engagement. I think that's probably a function of geography rather than the model of UHI to be honest. So I think I see a lot of potential there. But the challenge for not seeing as much involvement with UHI in the Innovation Centres is actually to do with them building their own academic research and their own model. Maybe Stuart or Jim knows better than I do on that?

SF: We started this conversation talking about geography and potential for partnering. It struck me for a while that part of that partnering could of course involve some of the universities and partner institutions that could be geographically useful in their dispersion, their proximity to businesses. The breadth of thinking in the college sector and innovation, there's a very active community there.

And I imagine UHI is no different, though I couldn't be entirely sure. I think the potential for the college sector to contribute to innovation in Scotland is huge. I don't whether the UHI's colleges are particular special in that regard or not, but I would be surprised if they were not involved.

CW: I think that's two separate issues there, to be fair. I think what we're describing is great potential for FE to be involved in innovation and Innovation Centres. Focusing on UHI because it happens to have a university model that includes FE is probably not the best way to exemplify that.

GR: That's a very helpful observation. From the only evidence that is pointing towards the demand for skills, it would, at least at first sight, seem that if there is a demand for skills, don't limit the scope to universities when you've got a whole layer of skills providers operating out there as well.

We've heard about the private landscape, one of the members of the crowd is something called Innovation Centre Scotland Limited, which is proudly supported by Scottish Enterprise and Innovate UK. It is not the same as the Innovation Centres that we are here. I was just wondering... you're nodding enthusiastically...

EM: I'm nodding enthusiastically.

GR: Would you like to help us understand the relationship between the two Innovation Centres?

EM: So my knowledge of Innovation Centre Scotland comes from my limited engagement with them through the Alba Innovation Centre. Also through a conversation I had with a consultant who is running a review for them at the moment. So I say that caveat right up front, so you don't think I have a wealth of knowledge about this.

Innovation Centre Scotland, as I understand it, is an organisation that has over the last period provided support to the [Hillington] Business Park and the Alba Innovation Centre, so they provide on-site support to the companies that are

being incubated or developed on their site, I think they were – from my understanding from conversations with their consultant, and I'm sure there are people who have a longer memory of this than I do – they used to potentially do other parts into the ecosystem but nothing like the Innovation Centre model that we are discussing here, as far as I know.

It's always been an understanding, an engagement, our role to try to encourage public sector views around this kind of space, how do we support innovative companies to really develop?

GR: A start-up, more a start-up incubator centre than I would describe as an Innovation Centre.

SF: Unfortunately my memory goes back that far. There was a point where we were putting up buildings specifically for Innovation Centres and it was building the support a young company would need in terms of skills, finance and commercial background mentoring, in that particular building. So the two that are left, there was another one up in the Highlands, the Green House, the two that are left, and there's one in Midlothian as well, the Midlothian Innovation Centre, that's sort of become independent.

So you've got Alba, you've got Hillingdon in Glasgow. So they're very different, unfortunately there's confusion of names, and you've been quite right to pick it up. It's as usual not a clear distinction between the use of the word innovation and centre stuck together. And as far as I'm aware they've done no marketing in any shape or form as Innovation Centres, although that's the name of the company, if you like.

GR: But they're very good at getting high up the Google list.

SF: It's 15 years of doing it.

GR: I can tell you, when I agreed to do this, the first thing I did was to google Innovation Centre and those were the ones that came up.

SF: The Hillington one, four or five years ago maybe now, it's gone. And the Alba one...

GR: I really don't want to dwell on this but I offered the observation that to the external observer [cross talk 01:21:18].

SF: Well they've had 15 years at it.

GR: And we've given you a good range of questions, but before we wind up, are there any points that you'd like to cover that you feel we've not raised?

JW: Yeah, just going back to the impact question again, regardless of how difficult it is, we are a number of years down the line, so whatever information you guys see in front of you, I do think we need to take the opportunity to make a judgement call because some of us have progressed more than others. And I'm not suggesting anything in particular, I'm just saying that I don't think that should necessarily mean that we can't make some decisions about how some of them might move forward, because I think you will get indicators of some description.

EM: Just a view really, that what we've got is a mix of things in the Innovation Centres. And trying to balance they're given freedom to operate in the way that services the communities they're trying to get, whilst working in a public sector landscape of governance and lots of tricky balances will be brought up from that, so I think I'm genuinely interested in your feedback on how that actually meshes together to give something that has the kind of [inaudible 1:22:50] associate with innovation whilst not being mired in public sector and governance at the same time.

SF: Two small things, Graeme, for me. I'm almost surprised in the questions that nobody raised why the Funding Council would do this at all, given that direct

economic impact it has as a driver. This is quite unusual behaviour for the Funding Council and we're highly aware of that. So it's probably worth making the second point that I didn't get a chance to raise earlier but it is important for us.

Though we have to focus and continue to focus on the economic and social value, or economic and medical value – whatever form that is – of the Innovation Centres as being the impacts that we want to see primarily, there is a secondary impact that means a lot to us, though for the avoidance of confusion we don't talk about it quite so openly or so frequently.

Which is, that we are trying to help, of course, the academic research community to be given the challenges, goals, direction, interaction, partnerships, colleagues to work with from the commercial world to help Scottish universities remain, as excellent as they are, as research led and research active institutions.

So that direct benefit to the academic community of working with those businesses on challenges that matter, not all of which are short term, as we've heard, some of them are going to be longer term and already are, that's an outcome and an impact that we most definitely want to see. Though we don't want to talk about it too hugely so as not to confuse the business community as to what we're about, it's something that I try to say to the academic community reasonably frequently, so they don't forget that the Funding Council exists to nurture, support, develop and strengthen the Scottish academic, higher and further education communities.

So thank you for the chance to talk to you today, thank you for the breadth of questions, it's been quite enjoyable being asked to think about some of those rather difficult topics. Thank you for that.

GR: Thanks to all of you and on behalf of the committee I'd like to thank you for giving us so much of your time this afternoon. The next thing you'll hear from this will be in September when the findings emerge, but we may get in touch for points of clarification before that. So thanks again.

END OF TRANSCRIPT

File Name

IC Admin Hub Group – Dr John Rogers – 29 June

File Details

Audio Length: 00:31:49

Number of speakers: 6

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers.

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].

Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: Good morning, John, and thank you very much for joining us.

JR: You're very welcome.

GR: My name is Graham Reid and I'm chairing this review. This morning's discussion is being recorded and the recording will be published at the end of the review. On my left, we have four out of the five members of the Review Committee. On my right, we have observers from Ekos Consultants, Scottish Enterprise, Highlands and Island Enterprise and the Scottish Funding Council. Would you like to say a word of introduction about yourself before we get going?

JR: Certainly. My name is John Rogers, I am the Director of Research and Enterprise at the University of Stirling. I am a member of the Scottish Funding Council Research and Knowledge Exchange Committee, and I am the former Chair of the University of Scotland for Research and Commercialisation Directors Group, and in that capacity was responsible for setting up the Innovation Centres Administrative Help Group.

GR: Fine, thank you very much. Tim, could you introduce yourself?

TB Tim Bedford, Scottish Funding Council, RKEK. John, with the benefit of hindsight, how should we have gone around setting up the Innovation Centres?

JR: How should we have gone about setting up the Innovation Centres? I think absolutely with the purpose and the vision that we had, which I and University Scotland ICAHG fully support and continue to support, so the vision and the purpose was clear and appropriate and remains so. We again should have done nothing different about emphasising the critical importance of industry leadership of the programme. But, on reflection, we might have spent a little longer thinking about sort of the practical ways in which we could have helped give birth to the Innovation Centre Programme.

ICAHG was set up in part in response to a gap, a deficit in the understanding of the operational parameters for the Innovation Centre Programme, our industry leaders who drive the Boards of each of the Innovation Centres quite properly. I think we're not as fully equipped as collectively we might have made them with information about the inevitable conditions that come attached to funding and

I think had we attended to some of those issues at the outset we might have helped further smooth the path for the successful introduction of the Innovation Centres. And that really has been the core purpose of ICAHG to address that situation since then.

TB: Okay, that's useful. So are the changes to the Innovation Centres that you recommend, the operation of the Innovation Centres you would recommend now that they are a little bit more mature. And I just wonder whether also you think that depends on the type of Innovation Centre or the sector that we're facing into.

JR: I think it depends on a number of things. It obviously depends on the Innovation Centre type and the degree of, I guess, maturity of the business-led questions that the Innovation Centres are considering. I think that we inevitably have an array of different priorities appropriate to the [inaudible 00:04:04] industry in each of those sectors. I think we need to continue our efforts to have common practice, common understanding, common operations across the programme wherever that's appropriate.

Because I think that's the key to ensuring that we have the greatest possible efficiency and operation of the Innovation Centres. That we have the clearest lines of accountability for the substantial sums of public funding that are involved in the Innovation Centres. And most importantly that we maximise the expenditure on project and programme work that's delivered by the Centres, rather than on overhead costs that we have across the piece.

I think the other thing I would say which is not so much an operational question as such, is about the nature of the programmes is that we might do more to help both the academic and the industry partners engaged extend their horizons. I think inevitably business is concerned with the problems it confronts intermediately and in the short term and I think there is more that can be done working in partnership to bring a degree of industry for sighting and a degree of academic for sighting together to think about that which might be truly innovative or more innovative in the medium to longer term.

And if we're to have a sustainable and well-developed programme of activity that adds the value that it has the potential too, I think we need to attend to that set of questions that means that we will need absolutely to ensure that we have the smoothest possible operational path for the programme.

AS: Hello, I'm Alex Saxon, Research Councils UK and also observer in the SFC RKEC. So, having looked at the ICAHG written evidence, like many of these it

mentioned that it was too early to comment on several things. But also pointed to the complexity of the relationship between Scotland's research and innovation base. With the Innovation Centres now in place, what opportunities do you see for that relationship between Scotland's research and business base and really enhancing it?

JR: I think there are many positive examples within the programme already that we can draw on in answering that question. I think one of the most effective devices that's been developed by a number of the Innovation Centres, has been the workshop based approach where industry partners and academic partners come together to discuss questions, to discuss issues, to discuss challenges with no preconception about what the solutions to those challenges might be.

And I see examples of that in the agriculture Innovation Centres, which I am most closely familiar with, my own University, is the hub university for the Agriculture Innovation Centre and I sit on the Board of that Innovation Centre. But one of the features of the programme is that it is creating that space for those creative discussions around short and longer-term challenges and that I think very much is a novel feature. It's something that is really being enhanced by the existence of the Innovation Centres.

So, there are good examples to draw on. I think some of the challenges that we still face and the things that we have more work to do to get right are around about integration of the Innovation Centres into the landscape more broadly and clarity of purpose. And clarity purpose clearly related to the broader discussion of simplification. Simplification for all of the partners, all the actors in focusing on what we need to do. There is always a risk and again hindsight's a great thing. There is also a risk that when something new is established that it not only does new and exciting things but also seeks to replicate other good things that are already happening.

So in the written evidence it makes reference to this, there is a risk that Innovation Centres will develop their own versions of mechanisms and devices that are already delivered by other actors, the enterprise agencies, Interface and so on. And so we must ensure that collectively we exercise a discipline not to allow that to happen but rather to focus always on fully effective integration

with clarity of the purpose of each of the actors and very, very strong interaction and collaboration between and amongst them.

So, those I think are the issues that are my view; vast opportunities as yet undiscovered if we are able to unlock that for sighting function that I talked about earlier. There's always a risk when we are talking about the unknown knowns and the all the rest of it, so I will try to avoid doing that. But the true innovation, true economic impact through growth will be found for Scotland in those things that we do not currently know or do not currently do.

And I think that's a hugely distinctive area of opportunity for the Innovation Centre programme through that for sighting, that longer-term vision, thinking about the future business that can be found, that can be developed collectively rather than focusing solely on those challenges are already known.

DM: Douglas Mundie, Board Member of the Funding Council and a member of SFC's RKEC and Finance Committees. John, the IC's were launched as a Scotland asset, how successful or unsuccessful have they been, been really getting out of just central belt and getting around Scotland and engaging widely in both the university and the business community?

JR: My answer to that is, increasingly successful. And I will perhaps reflect in the ICAHG written evidence. Without wishing to dwell on the past, I think there were some early misunderstandings about the range of coverage of the Innovation Centres, there were proprietorial behaviours on both sides, both University and industry in thinking about these are our entities, they are to address these challenges. I think we have reasonably, quickly moved beyond that and we can in a number of the Innovation Centres a real extension of the engagement, the business engagement, the academic engagement.

I think we are starting to see something of a geographic broadening in terms of the project again I know agriculture most closely and we have quite deliberately worked with our colleagues in the Islands and the Islands Enterprise to put business development capability into the Highlands and Islands territory. It is early days, there is much more to do but I am encouraged across the programme by the increasing number of partners that are becoming involved. We have much more to do I think that we are at a very, very early

stage in thinking about the potential for College involvement in the Innovation Centre programme.

I am aware of some discussions taking place but we've not really developed that opportunity yet. And I think that the more innovative the programme becomes the broader of scope of opportunity exists. I can maybe just give you an example of a workshop that was held last week to engage with the engineering business based in Scotland to think about... to expose capabilities in that sector to the agriculture community. To think about solutions that are not even currently on the radar in terms of some of the issues that are facing the industry and some of the potential longer run developments that could really add value in that sector.

And that again is an example of the workshop based approach that is creating some of those more speculative conversations that inevitably draw in a wider range of actors and have a great potential to extend the reach of the Innovation Centres, so not great at first, encouraging progress but much more to do.

TB: As a supplementary to that, I fully understand the ability of agriculture to get to the north and south of Scotland, that's natural for it. With some of the more technology based Innovation Centres, is it realistic to look at them being able to engage on a Scotland basis?

JR: I think for some of the Innovation Centres, absolutely. Data, for example, is largely geography independent. In terms of its potential, in terms of the range of engagement, the technologies developed through the CENSIS programme have a very broad applicability in a whole range of different sectors. And so if the business demand is there, which is always the caveat for making this successful, then there's no reason why many of the Innovation Centres should not deliver on a broad geographic spread.

And indeed I think that's an explicit challenge that we need to continue to be enforced in the Innovation Centre programme to think about moving beyond the familiar and that's as true geographically as it is in terms of business questions. So, yes has to be the answer but it depends on the development of the business demand as much as it is on the development of the technology.

TB: Just a slight switch into the evidence you provided, you made the comment that the Funding Council could have been more directive about the base or bases on which ICs should fund and manage projects in universities, assisting and harmonisation of practice. Could you just expand on that a little bit; I don't fully understand whether or exactly what the point is you're making?

JR: By way of background, it may be helpful to explain to the committee that the developments of the ICAHG group took place within the context of the broader development of the University of Scotland innovation actual plan. Which was quite deliberately and purposefully seeking to address a number of concerns that were raised by business and other partners about some of the challenges around the interface between Universities and companies. One of the issues that was raised in that context was around the trouble that can be generated around negotiations concerning intellectual property.

And my view and the view increasingly of ICAHG is that we're making things sometimes more difficult for ourselves than they need to be. There was a theme through that innovation action plan and continues to be, it's a living programme that where public money is involved there's a great opportunity for the funders for the custodian of that public money to set the terms and conditions under which is it used and so we can design in effective IP arrangements for example from the outset and make those a condition of funding. Rather than waste time resource and energy in... on all sides wrangling about the conditions of access to intellectual property.

There is a place for those negotiations but that place resides when we're talking about public money at the sector or insistent level where we're talking about only private money that's a matter for the purchaser and the provider of the service. So that's one example of where I think with hindsight greater clarity on the terms and conditions of access to Innovation Centre programme funding could have helped. Equally, we have quite a variety of approaches to the expectation around leverage of private finance and private income support to match public funding across the IC programme.

Now I am not arguing, and I am not arguing for a straightjacket across the programme, but we are arguing that things should not be more different than the justifiably and legitimately needs to be to reflect the demands of the

industry service that each centre is serving. One of the real drivers for commonality, wherever that's appropriate, is of course a facility that is cross centre collaboration and again thinking about that longer term development of the programme. And already we are seeing some of this, some of the most potentially exciting opportunities maybe found across the boundaries between Innovation Centre and communities. And if we make things too different across each of the centres then we make those cross centre collaborations much more difficult than they might be.

And then I think there's a bundle of questions around, going back to what I said earlier, the initial expectations, the clarity of information to all concerned about what public money can and can't be used for. What level of accountability sits on public funding and critically what mechanisms exist within universities that are already very well versed, ensuring that that accountability exists and making that a resource to the Innovation Centres rather than... I think there was an unnecessary divergence between the university host and the business-led Innovation Centre Boards in some instances early on as the Innovation Centres grappled with was relatively unfamiliar territory to them where the understanding of that territory was actually right next door in the hub Universities.

And I think one of the learning points for ICAHG, and we've made good progress on this framework, is understanding that commonality isn't a straightjacket it's actually a strength. It's something that smooths the path for the operation of the core focus of the programme.

TB: Thank you.

WF: I've got a question. I'm Willy Findlay, I represent the GlobalScot Organisation. John, you mentioned, and I think I can see the issue here, you mentioned that a lot of the Innovation Centres are driven towards problem solving rather true innovation. And you mentioned a workshop, which I can see would be a good tool. But can you give us any feel for how successful it is to bring in an industry with a problem and move them from the problem to thinking maybe more like into the future?

JR: It's starting to happen and it's starting to happen within the Innovation Centre programme and beyond it and if I give you an example that I can draw on. Through some of the work I was doing with Universities Scotland in a northern Innovation Centre area, food and drink, we had been in discussion with Scotland Food & Drink to ask them what challenges they face. And indeed that was part of a broader series of discussions that I and the convener of the Universities Scotland's Research and Knowledge Exchange Committee, Professor Andrea Nolan at the time, with a series of industry leadership groups to go out and ask the question what the challenges you're facing that we may be able to help you with.

And many of them said we need help in raising our members' sights and raising our members' horizons. And that's a message that we've played back into the Innovation Centre programme, we've played back into the debate more broadly, how we do that is challenging. But, one of the real benefits that Universities can bring to this mix is that longer term more speculative viewpoint. I mean our business, our core business of education and research has its own challenges immediate and longer term.

But the future of our business means that we are able to take a longer-term view and to think more speculatively about what is emerging and so I think the next phase of development of the Innovation Centre programme and beyond the innovation programme could well be to put in front of industry that longer-term view. Maybe to give a little bit of creative space in what's inevitably a packed and busy schedule. The challenge sometimes is persuading industry that it's a sufficient priority to invest even a little time to engage in those kind of activities.

But if we can do that if, we can find the right levers the right messages to get that engagement. Then I think the rewards will be very substantial, but I have to say that why I point to the workshop model as a strength of the programme is that if you or I or anybody else goes along to an event and finds real value in it as people are doing in the current workshops. Then we are more likely to go to the next in the series to make it a greater priority and so we need to see this as a transition that says we understand the immediate and the short-term challenges let's also work to understand the medium to longer-term challenges and opportunities.

So I think we are moving in the right direction but it's not an easy thing to get anybody to prioritise. Maybe there is some way that we haven't thought of to just grease the wheels of that [inaudible 00:23:23].

WF: Interesting.

GR: John, as you look into the future, which you are doing very well [laughter], as you look into the future, would you expect Innovation Centres to diversify their income sources?

JR: This is a not a great week to be trying to look into the future, is it? But I have been doing a lot of gazing into what the future might be over the last few days. I think we have to envisage a diversification of income sources because if we are going to be serious about a genuinely collaborative partnership while we're moving forward then that means that everybody has to recognise the value and the endeavour to the degree that they are prepared to put their hands in their pockets and co-fund the enterprise.

You know from the ICAHG evidence that we do not envisage a public sector intervention free Innovation Centre programme for the foreseeable future. We believe that because of the nature of this endeavour and especially if we take some of those longer-term perspectives that, I've mentioned. We need to support that enterprise with public sector investment. But we do need to move more towards seeing greater leverage of additional sources of funding into projects.

Some of the Innovation Centres are already starting to do that with significant industry contributions we think that there is more to do to align the Innovation Centre programmes of work with some of the other programmes and projects and programme and project funding that's out there to help leverage more into Scotland. Something again that will be more challenging than the situation which we face now than maybe it was a week ago but nonetheless we need to think about leveraging in additional sources of funding.

And we need to go back to the previous point to convince our industry partners of the value of this endeavour and of participation in the long run enterprise to the point that we almost find the elusive Holy Grail and see

substantial and sustained private sector investment as partners in this endeavour. So we need to... we need absolutely to envisage a future where there is a greater diversification of funding sources. But we need to be very careful in how we develop that and we have referenced this in our written evidence. There is a risk that Innovation Centres just as any enterprise become distracted from their core purpose by chasing more money.

There are things that the Innovation Centres are very, very well placed to do and they're demonstrating that they are starting to do those things. There are areas where the Innovation Centres are not the right vehicle and I think that the balance that we need to strike for example and skills development is a very good example of this. Innovation centres could chase significant funding for skills development, skills provision. Which might not be the thing that they are best placed to deliver, what they can bring into that mix very helpfully is a deep understanding of business need and an opportunity to foresight business skills need more.

So again closer alignment and this is where Skills Development Scotland remit needs to be brought in my view into much closer alignment with the Innovation Centre programme and more generally. But I think we need to be more careful not to allow the Innovation Centres or require the Innovation Centres to become distracted by chasing funding to sustain themselves by doing things that they are not best placed to for example.

GR: So independent business-led Innovation Centres, who should permit or prohibit that form of business development that you've just described?

JR: I think this is about the clarity of purpose that attaches to public funding that sits within the programme as I've said we don't see a public sector free Innovation Centre programme anytime soon if indeed any time because there are new things that could be developed. So there are conditions that are attached to that money and one of those conditions should be that there is clarity of purpose. That the place within the broader landscape is well understood and that the Innovation Centres therefore are resourced from the public part of the equation to maintain their focus on those things that where they deliver greater added value that cannot easily be funded by business

partners or by project funding and that if they were to seek the resource to deliver may take them into other areas.

So our business development function, for example, going out and doing the leg work that is required to build and sustain the relationships that take us into this longer term more foresighted relationship. That's not something that business is easily going to pay for, it's something that's critically important but if the Innovation Centres are to do that they need to pay the people that will do those things. Does that make sense?

GR: That's super. Our time is really very limited but I just wanted to provide a moment in case there were any pressing points that you feel we have not covered but that you would like to mention?

JR: I don't think there's anything that we haven't covered that I will come back this afternoon with a different answer on, so maybe there will be some nuances that I want to share there. But I think that what I would say is that we started ICAHG out of necessity because inevitably collectively we hadn't got everything right as we set up the Innovation Centres. I think we're approaching a position where we now have much more mature discussions, we have the Chief Executives Group represented within the ICAHG and that's a major step forward because in the early days those communities were talking very, very separately.

So we're getting there, we have more to do and I guess... I think that I would want to leave you with the thought that we need to continue working at this agenda whatever some of the frustrations might be. Because we are making good progress in what are some difficult, technical and relationship issues. The other thing that I guess I would want to say on behalf of ICAHG is that everyone engaged in this endeavour has their part to play in understanding their own clarity of purpose, their own contribution and in making that contribution the full.

And we do reference that perhaps there's a stronger role that the Enterprise Agencies might play the Enterprise Agencies have been core partners in this endeavour from the beginning but perhaps there is more that can be brought to the table by the enterprise agencies in ensuring their clarity of purpose and

their offer sits in an integrated way with clarity of purpose and the offer of the Innovation Centres. So again, we eliminate any need for duplication and actually enrich the whole.

GR: That's very helpful, John. Thank you so much for your contribution this morning and we will see you again this afternoon.

JR: I will go and change the colour of my hat.

[Laughter]

END OF TRANSCRIPT

File Name

US – Prof Sir Pete Downes – 29 June 2016

File Details

Audio Length: 00:46:54

Number of speakers: 6

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].

Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: My name is Graeme Reid and I'm chairing this review. The discussion this morning will be recorded and the recording will be published at the end of our enquiry. To my left we have four out of the five members of the advisory committee and they will introduce themselves when they first speak. To my right we have observers from Ekos Consulting, Scottish Enterprise, Highlands and Islands Enterprise, and the Scottish Funding Council. So thank you again for joining us.

WF: Hi, I'm Willy Findlay, I'm representing the GlobalScot community, I guess, in this role.

PD: Morning, Willy.

WF: Morning. The Innovation Centres as they're set up are strongly business-led, and I guess we're trying to figure out, in the light of your experience, is the

business leadership best functioning or is it restricted by being tied this closely to a university?

PD: Well, there are many models that could be set up, I suppose, and I don't think the current model is inappropriate, I think what matters is how it operates within that environment. So, and I think there is evidence that the Innovation Centres are beginning to develop, to achieve the sorts of things that we would them to achieve within that, if you like, governance setting and physical association with the university environment. But it's variable, and that variability, I think, depends upon the different sectors that they're serving and the specific location, and maturity since they're all different ages and stages of development.

So I think it's quite hard to answer those questions. But I wouldn't attribute any of issues that I identify with the notion that these should be industry led but have adopted, if you like, convenient approach to their governance and location. You could adopt other approaches and it wouldn't, to me, affect the issues that I identified that need to be resolved or improved upon or represent good practice that should be shared.

DM: Douglas Mundie, member of the Scottish Funding Council's Board, RKEC and Finance Committee. Talk about please the relationship, as you see it, between the IC programme and the research commercialisation offices within university.

PD: I think that's a good question in that I think any new approach needs both to have the opportunity to fulfil its own, if you like, innovative intervention in this landscape. But at the same time would hopefully either, well, potentially make best use of the existing resources that are already there. And it's very clear that, again, that there are very variable levels of effective interaction across the Innovation Centres. So certainly those who have worked well with the innovation services in my university, in Dundee, and others which have very clearly sought at every opportunity to avoid that interaction. Most obvious examples being of seeking information about research staff and their research areas for the purpose of making direct contact with those staff.

And I think that has a number of inefficiencies associated with it, the innovation services, whatever criticisms one might have about their performance, have very deep and detailed knowledge of the research and those taking place in their institutions. It doesn't make any sense to ignore that understanding and the resource of knowledge that exists at a local level within our universities.

Secondly, there are some purely practical problems in that databases are constantly changing. And so the idea that Innovation Centres should have the resource to maintain that dynamic understanding of who is where and what they might contribute is just, I think, a misplaced...maybe confidence perhaps isn't the right word. I think from where I've seen it happen, it arises from a feeling of one wanting to have very direct control, not to work through and intermediate. And I can understand where that idea might arise. More worrying is that in some cases it might result from a perception that working through such intermediates will be ineffective, that that's a system that's failed, the Innovation Centres have somehow been brought in to overcome the failings of a past system.

And my, sort of, final observation in this area is that in my own experience, I had quite a lot of personal experience in my own research career of both working on the side of industry before I came a long time ago in to the sector. But then also working with industry, in my case the pharma industry with other colleagues, and setting up major collaborations that have been, are still running and have been running for the last 18 years, which is more or less unprecedented internationally. Which suggests that we get some things right in those kinds of relationship, particularly that.

And to me the fundamental issue is a mutual understanding of a combination of working practices, business models and what the different parties, in this case let's say universities interacting with business, can bring to the party in a complementary way. And then the second thing is mutual respect for those differences and for the qualities that each bring. And so, if you like, trying to avoid the interaction with the logical resources that exist, to me is not just counterproductive, and if there are problems and there are inefficiencies and inappropriate cultures within the innovation services present within the university sector, they, like the problems with the Innovation Centres, need to be resolved, not avoided. And in my experience they can be resolved in very productive and collaborative ways.

DM: Thank you for that full answer. It's a point you made very clearly through evidence, and this is not just your university, this is something you've perceived across a number of universities? And secondary to that, do we have eight Innovation Centres who are having this problem, or one, or something in the middle? I mean, how big a problem is it?

PD: Well, so I think it's variable. Again, I don't know them all [laughs], and I don't want to...I'd rather not comment on specific ones. I think you'll have plenty of evidence that relates to specific relationships from, probably from university submissions and from elsewhere. I have drawn on what I have got from my own institution and the specific relationships that they have. So the simple answer is it's incredibly variable, there are definitely Innovation Centres who have taken the view that they will work with innovation services in an effective way.

And also the other organisation that I have a part to play in, which is Interface, which is I think critical to this landscape and has, if you like, an overlapping function with some aspects of what the Innovation Centres are required to do. And there are others who are taking a more independent approach. That speaks to another point that I make in my evidence, which is that we undoubtedly need a degree of heterogeneity, I think trying to provide a one size fits all model across all these different sector would potentially be disastrous.

An advantage of allowing a bit of flexibility and heterogeneity is that different models might provide examples of good practice which if these centres operate in themselves as, if you like, open systems. But also at a macro level, taking the whole of the Innovation Centre project, that they're open organisations with respect to understanding how each has developed. Then again that sharing of good practice, eliminating what doesn't work, understanding what might be generic and useful across all the centres, and what needs to be bespoke because it relates to a specific sector based issue. I think there's a lot in this next phase that really needs...that we can use the information coming out of this review in a very developmental way. And certainly I hope that what comes across with my evidence is that we're at a fairly early stage, there's plenty of evidence of success in achieving what might

be regarded as early and appropriate objectives for the Innovation Centres at this stage, variable for different reasons.

But what I hope this review will be able to do is to help us develop in the most positive way from where we are now by getting at that best practice, understanding it, and encouraging all the Innovation Centres to develop in a positive way.

DM: Can I now pick up on Interface, you mentioned, and clearly they fit in to this complex landscape between the universities' front doors and the business community and the Innovation Centres. Can you talk a little bit about how you see interface fitting in, please?

PD: Yes. Well, I should declare an interest. That interest is that I am currently the chair of the advisory board of Interface, so I wouldn't do that if I didn't think Interface was a positive influence in the landscape. And I wouldn't still be doing it if I didn't still hold that view. So the particular role of Interface relates to the interaction between micro and particularly SME businesses and universities. And the reason why it was set up and targeted in that area was because that's a very complex landscape, it's particularly important in proportional terms in the Scottish economic system. And it's very, very hard for universities on their own to identify SMEs that they wish to interact with. And very, very hard for SMEs themselves especially to identify and to have the resources to understand what's going on in universities and who might help them in order to build a more innovative basis for those businesses to thrive.

So that's effectively the role of Interface. And that could be seen as being either in competition with some elements of what the Innovation Centres need to do, or it could again be seen as complementary to that. And just as I talked about in terms of the relationship with innovation services within universities, the Innovation Centres have a mixed approach, different approaches to that issue. Some essentially, I would say, ignoring Interface, although that's starting change, and others embracing Interface and what it can do to help to introduce relevant SMEs in the right sectors, in to the supply chains and the open innovation environment of Innovation Centres.

I suppose I'm still wearing the Interface hat in one sense in making this comment, but I had this belief well before I became associated with it. One of the key values of an open innovation system that is the aspiration of the Innovation Centres will be, and must be, to draw, what you might call, innovation naïve small businesses within the supply chain or the purview intent of the sector that the Innovation Centres cover. They need to be a magnet to draw them in, because within the centre lies a lot of the expertise that those small organisations would need.

So Interface ought to be in the position of being able to broker those relationships more effectively by identifying Innovation Centre activity through their knowledge of SMEs to encourage them to get involved, to find the right contacts, and to have a much more efficient ability to approach their innovation needs.

DM: We've heard previously that Interface regard or can be regarded by the Innovation Centres as competition...

PD: Well, as I said...

DM: That's your view as well?

PD: My view is that some behaviours, if they see it that way, others do not. So it's not a universal feature of Innovation Centres. And, as I say, I've also detected in the last few months, even in those who've been rather precious and less inclined to see Interface as a resource that they can make use of, and some of those I think have been moving in that direction as they're persuaded in that direction. I was at an annual dinner discussion with the chairs of the Innovation Centres a few weeks ago, which I think gave me some encouragement that those attitudes were developing and changing in what I would regard as the right direction.

DM: Thank you.

TB: In the submission from University Scotland you mentioned...

GR: You need to tell us who you are.

TB: Tim Bedford, a member of Scottish Funding Council's RKEC.

PD: Afternoon, Tim.

TB: In your submission from Universities Scotland you do mention, amongst other things, the skills agenda, and there you touch upon really HE related skills, courses, and so on. So I wondered whether you thought the further education sector could be playing a bigger role in the Innovation Centre programme, either from the point of new skills, or as broadly as you'd like to go with that.

PD: Well, I think, so skills is one, and I think the other is that further education colleges also have good links with local businesses. And therefore a part of that whole landscape, whatever we want to call it, they can facilitate interactions. So I think it does potentially go beyond skills. They're certainly I think...they're certainly in a position to ensure that their programmes are able to meet the skills needs of the sectors that the Innovation Centres serve. And again, what it requires is communication, mutual interaction, mutual understanding, and the co-development of programmes of activity within colleges alongside the activities of the Innovation Centres.

So a lot of the problems I think, you know, it takes quite a lot of resource to be able to juggle all the stakeholders and to get maximum benefit from all the stakeholders that are out there. And so the more complex the landscape looks, the more difficult that becomes. So, you know, another point that can be made outside the further education colleges, the other agencies that play in this space, that at the moment Innovation Centres are not yet, I think, fully leveraging. And I attribute that less to do with culture and preciousness, and much more to do with it's pretty hard to manage those relationships in an effective way, particularly when you're trying to get started and do something new and different.

So I think the limitation is more to do with resource than it is to do with either intent or the recognition of the value that those interactions might bring.

TB: Just to follow that on, if you were looking a few years in to the future would you see a greater presence of further education skills in the Innovation Centre agenda?

PD: I think that's inevitable. It's a question of how you get it. So for example, it would be...Innovation Centres, or indeed further education colleges, could themselves set up, for example, conferences and other, form other ways to get stakeholders together. So that rather than everything being handled through bipartite relationships and agreements, and things of that kind, that essential getting to know one another and understanding what the opportunities and possibilities might be and selecting from them. We need, what I would call, catalytic mechanisms alongside the managed relationship issue.

So I think that's one way that FE can be brought in to the equation through conferences it might relate to the skills environment. And that would include high level skills which universities would hopefully be contributing to as well. So rather than doing that separately, FE and Innovation Centres, or even a one to one, one Innovation Centre managing that. And probably another thing that could be brought out of my evidence was is there a need for something that sits on top of the Innovation Centres, that is, sort of, generic in that sense and is brokering these, kind of, more broader issues, rather than reinventing that particular wheel in each of the different Innovation Centres. So that might be one way to approach some of the complexity.

TB: Just to follow on about FE colleges and their potential roles. So a very interesting question was raised by one of the respondents to our questions, who asked whether we should be focusing on those industries who are already doing well in terms of innovation, or those who are underperforming.

[Laughter]

TB: Now, of course, an interesting and difficult question, but I wondered if, reflecting on that, if you think there are ways of using all the different capabilities that we have across the sectors to meet these differentiated needs?

PD: Well, I think the first thing is that I think we have to start from positions of strength, that doesn't mean to say necessarily a position of strength with respect to how well we're innovating. But a position of strength in terms of sectors that are important to the Scottish economy and its future. And we might ask why those sectors are particularly successful, and some of it might be because they're already active in innovation, but it may not be that. So my starting point would be strength in relation to what's important for Scotland and important for the economy.

The next thing I would say is that there isn't any one of those sectors that doesn't need to get better in relation to innovation. And that includes actually universities, and say that not with tongue in cheek, but universities can do their own business better than they do now, I'm quite sure of that. And that's, you know, we are a very good sector from that point of view by international standards, but we could always do things better. And so innovation isn't really...it isn't really about discovering new knowledge, it's about applying knowledge and devising new ways of doing things, better than what we had before and that in the business sense lead to more effective and efficient businesses. So we can all do some of that.

So whatever the state of innovation is within each of the sectors that are important and critical for Scotland, innovation has got to be key to their future. And some of them start from a low base, some of them start from a somewhat higher base, but they can all do a lot better. And I wouldn't then, sort of, discriminate by saying our resources are best put in to these because they're currently low on innovation and need to get going, and these ones are good at innovation and maybe don't need so much help.

The other thing I would say is if the landscape is variable in terms of the quality of innovation, let's say, that currently exists, then again there's a potential good practice issue that might be helpful in those areas that are less innovative. It does depend again on whether one's dealing with sector specific issues or things that can be translated across sectors. I don't know if that helps

[laughs]. It sounded like a debate, rather than a definitive answer to your question.

GR: Well, there are whole industries dedicated to trying to answer that question. You've mentioned a few times the balance between heterogeneity and harmonisation, and I just wonder if we could turn to that. And I'm thinking very much about how this agenda should evolve in the next few years. Now, and there's been, some of the submissions put to us have talked about the benefit of Innovation Centres working together. I just wonder if you could offer some more thoughts about the pros and cons of that, given that at one level these are eight organisations that must surely have a lot to learn from one another, and perhaps would share some of the administrative work. And on the other hand, they are serving a broad range of really quite distinct industry sectors, each with their own culture and practices.

PD: Well, I think you just summed it up.

[Laughter]

PD: And that was my point. How we then, you know, determine, if you like, some kind of optimal balance I think is part of what I hope will come out of a review. So I think, I hope the review will reveal where the different sectors are working differently, I hope we would derive some understanding of whether that's as a result of the particular personalities involved in the Innovation Centre, or something that is particular to the needs of that sector. And we start to tease out some of those issues that can be thought of as being potentially generic and useable for, again, efficiencies across the centres as a whole, and those things that are genuinely specific because they relate to the sector. I said not the particular conditions of the Innovation Centre, but the sector. And I think that won't be easy, but I'd hope that an aim of the review would be to try to tease some of these things out.

I think the Innovation Centres as a whole could benefit from a, kind of, unified identity. So, for example, are they sub-brands of a brand? And is the brand something that needs to have a place in the way we describe the Innovation

Centres? That would be one way to think about it. I don't actually know the answer to that, but it's not very different from, for example, universities being asked to adopt, as much as possible, similar approaches to their, for example, how they handle IP. And the idea that we would have a simple and straightforward collaboration template for working with industry that is common across all universities, as a starting point.

If heterogeneous universities can do that, I might argue that Innovation Centres could at least discuss how they might participate in simplifying the landscape, rather than adding to its complexity.

GR: So given that we're at higher level, we're on a pathway to simplification not complexity...

PD: Exactly.

GR: Is there existing machinery that could serve us the common whole of Innovation Centres?

PD: By machinery, what do you mean?

GR: Well, do we have to create another quango or can we bolt it on to an existing quango?

PD: Yes, good question. I'm not sure I'm aware of a quango that would serve that function, and that of course worries me. I'm more inclined to think that there might be other quangos that should stop [laughs] in order to provide for, you know, the simplification. So I'm more inclined to think that way.

GR: Okay. Well, in that case could you just explain to me, as an outsider to this, why is it that Interface cannot be the hub for Innovation Centres? Because you've got one cross cutting thing, and then you've got eight sector specific

ones that are wanting to talk together. So an external observer might say, well, why isn't it Interface?

PD: Okay. At the moment it isn't Interface because Interface serves a particular purpose within that landscape, a very defined one, that relates to engagement of SMEs particularly, but including microbusinesses, with universities. Innovation centres are more likely to be set up around fairly large-scale businesses. And to me their relationship with SMEs should be that in creating a system of open innovation that's absolutely the environment that should be very attractive for SMEs to engage with. So Interface is not set up to deal with the broader requirements, and particularly to broker relationships between large-scale industry and universities.

And part of the reason for that is you don't need to, you don't need Interface to do that because universities and businesses do it anyway.

GR: Can I just understand, if universities and business do it anyway but Innovation Centres are set up to work in big businesses...

PD: No, no, no. Sorry, carry on.

GR: No, no, no, I've, kind of, run out of questions [laughs].

PD: No, no. So I understand what you're saying. So universities then and businesses, and large businesses, are able to identify... So if a large business that's innovation active and has research and other things going on, is usually capable of knowing which universities are active in their area. So the Innovation Centres have not grown out of some vacuum, they've grown out of stuff that was already happening. And that's quite right and appropriate that they would do. So the point is they can find one another, and Interface is about organisations like SMEs finding the right universities and the right academic staff to work with, to build innovation in their organisations.

And that's a problem because of the complexity of the SME landscape, and each individual component SME has almost no resource to find its academic

partners and other ways of doing it. And often too little inclination, without recognising the value of it. So it's a, sort of, a different question. So the real question is that I think we need to ask now is are the Innovation Centres working in adding value to relationships, some of which, many of which would happen away? They'd just happen, they be more likely to happen in bipartite relationships than they would in multi-component relationships. And they've been quite likely in the past to have been research led, rather than problem and industry led. So there's a subtle difference there.

I think, again, in my own evidence I believe each is an artificial, sort of, positioning, because what we're really seeking is virtuous cycles in the relationship between industry and universities that are working together. Once you start to work together in that kind of active environment, you know, it becomes a perfectly natural thing for academics to, sort of, say, "Oh, so you need the solution this. Well, actually over here we've got a solution." It doesn't happen through the random collisions across the international research landscape, but it can happen very efficiently in an open innovation system where people are talking to one another all the time. And then you'll get both the modification of that research push, and by the simple identification of what that research is needed to support.

And I think the research itself will develop in new ways. Sometimes as well the industry pull part of that identifies completely new problems that academics will be able to solve or resolve with entirely new research. So it's, to me it's just an incredibly rich environment, and the more components you bring together, providing that you can identify the precompetitive space because that's what's critical to create an open environment. If you go in to the competitive space, you know, people, A, won't want to engage, or will not be able to discuss openly what's needed and what can help. So that's another thing not mentioned anywhere, I haven't seen anybody else's submission, for example, that I've seen or in the remit for the Innovation Centres actually identifying that precompetitive space where you can work openly is a prerequisite to making these things work.

GR: And I guess my interpretation of that, because I share that observation, but my interpretation of it is that it is so specific to industry sectors and, indeed, to individual relationships as to where that boundary lies, which would be quite

difficult to regulate. But you'd expect it to be part of an intelligent interaction that's going on in your thriving space.

PD: Yes. And I think I'd agree with you and I would... And if we come back to that question of heterogeneity versus some common framework, I would err towards the need to flexibility. If I was to be pushed on that.

AS: So, Alex Saxon, Research Councils UK and observer on the SFC's RKEC.

PD: Hi, Alex.

AS: A related point but taking it in a slightly different direction, so thinking the financial models for funding the Innovation Centres and thinking about long term sustainability. You mention in your evidence the tensions between the role of public funding and independence of the centres, I wonder if you could just elaborate on that.

PD: Well, there are many tensions in that space, some of which I referred to. And it comes back to a point I made earlier about mutual understanding of business models. I've lost count of the number of times where negotiations around it, some form of collaboration, you know, flounder on that lack of understanding. And it comes from both sides of the relationship. So for example, I mean, I've given you specific examples, you know, projects of 50k are bit on the low side to do anything significant. But let's put that aside, there may be some things, some areas where that's enough. But actually saying you do that at 80% of every [inaudible 00:37:38] research council, so we'll do it at 80% of FEC, it's just plain nonsense. I mean, it's just...you couldn't possibly have thought anything about the business model in a university and come to that conclusion, which is why I use that as an example.

And it's not like that everywhere, but understanding where it is that universities are coming from, universities are don't need to make a profit but, frankly, if they take a loss on everything they do they will go out of business, end of story. And that's the problem in getting that kind of understanding. So I

think the other point then is the sharing of reward, of positive outcomes. Now, so you can either do business on the basis of the full economic costing of that activity, or you can do business on the basis of shared risk and the outcome. But you can't have the best of both worlds and expect that to work. And I think it's pretty simple really, actually, those kinds of things, it's just that we come at it from different perspectives.

I mean, you could only really start the conversation in that way that you think that universities have somehow got sources of money. I don't know where they think they're from, but just willing to, kind of, we're another source of that, you know, for the university and we can't really be that. We're not allowed to be that in terms of the way we're managed and the way we're expected to report to and manage the finances that we receive from government. I don't know if that gets the answer but, I mean, it's one aspect of it.

GR: The rhetoric about Innovation Centres has got a lot about independence, business-led, and there's a certain turn of phrase about boards and chairman, and so on, that gives them that flavour of independence. And yet at the same time, financially they look a bit like a university project.

PD: Yes, they do.

GR: So that doesn't feel like... That might be a good way to set them up, it doesn't feel like the way they might be at full maturity.

PD: Yes.

GR: So what changes? Is it the narrative or is it the business model?

PD: So the way I look at it is that the funding council has decided to invest in Innovation Centres as a way to achieve or to move us on in terms of the extent of innovation within the business communities. I think overall it's a model I

have quite strong support for, if managed in the right way. Now, so that investment implies that it will have a payoff in terms of the funding council intervention, it's not payoff in terms of profit for the funding council clearly, it is about having a catalytic influence on the extent of, let's say, open innovation activity within the Scottish system. Now, that investment can either be made with the expectation that Innovation Centres will each become financially independent of the funding council. It could be made in the anticipation that there will be a very substantial improvement in innovation and, hence, in terms of the profitability and growth of companies, which might be an equally reasonable way to think about it as an investment.

I think there is a potential danger in saying that Innovation Centres must become financially independent of the funding council, or a body of that kind, particularly within a rigid timeframe. And I think we need to examine quite carefully what we want those relationships to be. Because the implication, I think, is that the funding would shift from the funding council towards business itself, that could happen if businesses perceive the, and had genuine evidence, of the business advantage that they had in engaging. There could be other stakeholders that could contribute to that viability as well, and some might think that universities should be one of those stakeholders. My point would be that universities could be stakeholders, provided that they were able to benefit from the investment themselves.

Now, we can...depending on our relationship with the funding council, so for example, we could invest in time and resource in Innovation Centres, and even funding towards, if you like, co-investment in key projects within the knowledge exchange remit that universities have. But that could only be if there was a separate stream that supported knowledge exchange, and encouraged that knowledge exchange to be used as much as possible in relation to other structures like the Innovation Centres. So there are lots of different models that you could use, but I think a model that pretends that this doesn't cost anything, although it doesn't cost universities anything to participate, is just a non-starter and we have to be realistic about it.

GR: Pete, thank you very much. I'd just like to give you a minute in case there was anything that we've not covered, those pressing points that you want to make.

PD: In my answers to question one, we've covered it a bit, but what I like to see, I'd like to see us developing some performance indicators that speak to the efficiency of open innovation systems. So for example, and I'd like some of those to relate to how well engaged Innovation Centres are with the SME communities as part of that sector landscape. And I'd like to see some evidence that, or ways to gather evidence that there is efficient knowledge exchange within an Innovation Centre. So for example, we certainly have relationships, we're not a leader of any of the Innovation Centres in Dundee but we have relationships with some of them, and we have observed situations in which things have been within an Innovation Centre that would almost certainly have happened whether the Innovation Centre existed or not. Now, that's not a criticism because they should be doing things that would have happened anyway, but the key is to understand what value they're adding.

And for me, just to come back to the specific example of our collaboration with multiple pharma companies. Any IP that we generated that was exposed to the company we were working with in open collaboration in that precompetitive space, was massively more likely to be taken up and utilised than if it was just sitting there in our portfolio. So we need to gather the evidence that that kind of thing is happening, because to me that's the key to their success.

GR: Okay. Thank you very much for your time, much appreciated.

PD: It's a pleasure. And thank you for your time in helping us to get to the right solutions and to continually improve this approach.

END OF TRANSCRIPT

File Name *VP SESS 1*

File Details

Audio Length: *00:58:10*

Number of speakers: *11/12*

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].

Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: Good afternoon lady and gentlemen and thank you very much for joining us this afternoon. My name is Graeme Reid and I am chairing this review. This afternoon's conversation will be recorded and we shall publish the recording at the end of the enquiry. I should say on my left are four out of the five members of the Advisory Committee, to my right are observers from Ekos Consultants, Scottish Enterprise, Highlands and Islands and the Scottish Funding Council. Members of the Advisory Committee will introduce themselves when each of them first speaks but I'd be grateful if for the record you could each introduce yourselves, perhaps starting with John.

JR: John Rogers, Director of Research and Enterprise at University of Stirling.

DL: I'm David Littlejohn, I'm currently Executive of Science at the University of Strathclyde.

NJ: Neil Johnson, Deputy Vice Chancellor at University of Glasgow.

JJ: Julian Jones, Deputy Vice Chancellor at Heriot-Watt University.

LR: Liz Rattray, Acting Director of Research and Innovation at the University of Aberdeen.

DR: Dave Robertson, Dean of Special Projects and Science and Engineering at the University of Edinburgh.

GR: Thank you very much, and we'll jump straight in if we may.

AS: Alex Saxon, Research Councils UK and also an observer on the SFC's [inaudible 00:02:04]. So bearing in mind that the Innovation Centres are designed to be industry lead organisations, how do you feel their current governance model is working?

DR: I think the first thing to say is there probably isn't a governance model, there are models, and that may be an issue that we need to look at to perhaps learn the best models, aspects of models and implement those perhaps in the learning that we want to disseminate into hopefully the next wave of funding into Innovation Centres. From my particular perspective, I sit on the board of

IOC and I'm really very impressed by the governance models that have been set up for that particular Innovation Centre, they seem to be very clear and apparent, they're inclusive, they come up with the right outcomes when discussing the opportunities they have before them, so there may be other models, there are other models, but the one I'm associated with I think is a good model and there's lots to offer but I don't think there's one model.

GR: Anybody else on that one?

LR: Yes, I guess from Aberdeen not being the host of any of them, we see vast differences in governance models and I can probably reiterate that IBioIC and SMS are quite transparent. I think we would welcome a greater degree of transparency in governance and decision making and whether that's published or by reports rather than a list of projects because at the moment maybe of us are partners, contributors, one way or the other, and an understanding of how that budget devolution occurs and how decisions are made would be helpful.

AS: Given the diversity, does that actually make it difficult for you to engage with the Innovation Centres?

JJ: I think it doesn't so much make it difficult for universities because, heavens, we engage with enough other different organisations with different governance models. We're set up to do that. It's not so much that it causes a problem for the universities. It does cause problems for parts of industry who are not experienced in this kind of collaboration. It particularly causes trouble if they think they've learned it with one Innovation Centre then have to learn it all over again with another. Probably the most serious probably it could cause is

for Innovation Centres itself because they have each felt an obligation to do a certain amount of inventing of themselves, and I think that's consumed some management.

DR: Yes, I think it is the right question to ask, are the governance models functioning a good question to be asked because ultimately you want that as a back stop but on the other hand you don't get very many people who are interested in doing business with Innovation Centres saying I wish we had a different governance model, it's not at the sharp end, it's something that if it was working perfectly it would be like fish in water, you would swim in that pool, but of course it doesn't work perfectly because what you're taking is two very different kinds of organisation and meshing together, it's an experiment. So we run the experiment, there must be lessons we can draw from that back into the single or multiple governance models but that's not the nub of what would drive the Innovation Centres. I'm sure there are teething problems and there have been, but that's not what drives it forward.

JR: One of the key points for us, agreeing with what David said, is having senior institutional representative on the board is very beneficial for all concerned because it can help smooth through some of the areas that have to be understood by the different constituencies involved so I sent my nomination of the University of the board of Scottish Innovation Centre and I think that's helpful.

NJ: I'm not long enough to see the governance models but the operational models I think because they're so different the academics don't always know from the university side how they're engaging, so the operational model rather than the

governance model because I'm not closely involved with any Innovation Centres.

GR: I mean if I was a business person approaching an Innovation Centre I would find it reassuring to know what I was dealing with and I find that the rhetoric is all about being business led and having boards and there's a lot of corporate language but financially it's a university project and I think that would damage my confidence if I found, and I wouldn't call that clear governance either David.

DL: I think it depends on the leadership in the Innovation Centres. The Innovation Centres that seem to work best are Innovation Centres that have a chair and a CEO that have come from industry, and that's the immediate first point of contact for a company. A company coming in to talk about Innovation Centre and engagement meeting me and one of my academic colleagues, that's not going to have as big an impact as someone that understands the business they come from.

So I think having that type of involvement is really important at the starting point, then thereafter I think it's about very quickly that leadership team getting messages across about what that particular Innovation Centre can offer and I think it must work for some Innovation Centres. I see they have a membership model, they have about 58 companies as members, they must do something right when it comes to that certain engagement so I do think it's possible with having the right combination of leadership approach and clear messaging to have good initial contact with companies when they come to enquire.

JJ: I think at this relatively early stage it's not too difficult to see the relationship between the portfolio of companies engaged with the Innovation Centre and the personal professional network of whoever it is that is leading it. That's bound to happen to begin with and it will evolve over a period of time but it does make it very, I think, ad hominem in the early stages.

JR: And to be clear, my role on the board around the Innovation Centre is that it is to attend to all of the governance and accountability issues that have public funding that flow through the university, so it doesn't in any way compromise the business leadership but it smooths the path through the university system before that is to be exercised.

JJ: I think it's probably fair to say that there has been occasional tension, I really wouldn't want to overstate this, between universities feeling that they have certain obligations because of their relationship with the SFC to act in a particular way in a governance matter, which doesn't immediately align with what the Innovation Centre thinks it wants to achieve. It's not been serious in my experience but it contrasts the relatively detailed documentation relationship between the universities and the funding councils and the relatively light documentation relationship between the Innovation Centre and council.

TB: Just to follow on from your question there, I just wondered if there was a risk appetite between industry boards and the universities that are hosting them and whether that is an issue?

JJ: I suppose it rather depends how you choose to define risk appetite. I think that what no university would be prepared to risk at anything to do with the Innovation Centre is the relationship that it has with the funding council, that it would not want to behave in a way that might leave it open to the accusation that it's in breach of the funding council. I think in terms of risk appetite for will there be good outcomes for this project for lots of money being spent, I don't think there's any problem for risk appetite at the university. I think it probably comes around, how can I put it, a degree of flexibility one might be prepared to use in terms of permission to grant.

LR: Yes, I'll just expand and notwithstanding that there may be a degree of risk aversion on behalf of universities of some aspects where it comes to the whole issue of procurement and joint liability, so university partners and most of them having a joint liability position in respect of the funding of Innovation Centres and that's not always the case of the industry partners so in some of the Innovation Centres where they're associate partners, they're actually not responsible to the funding council for the liability for the funding, so there's a difference, I'm not saying that's the case in all Innovation Centres, just in some. In SMSIC the main partners are joint with the university so there is a difference I guess in that perception of risk across the Innovation Centres.

DR: I think one of the things, just in case, which you might think universities don't know anything about doing all this industry stuff and therefore it would be very difficult to do this and that's not true, I mean sitting in Edinburgh there are two unicorns in this city and they both came out of Edinburgh University so it's not as though we're not doing that kind of thing, we're pretty well involved in that sense.

On the other hand, that doesn't mean we know how to do Innovation Centres because that is a different experiment, it's money coming in embedded in the university and that is slightly different to what we've seen before. What you do expect, and set up to be like this, others may correct me if I'm wrong but you do want to see that creative tension, you do want respect on a board that the industry would be saying, 'push, push, push' our way and you expect that anybody representing the university on that board would be saying that will be the dialogue.

GR: That's a very neat move to the next question.

DM: Douglas Mundie, main board of the funding council and a member of RKEC and finance committee, leading straight on from what you were saying David, what has been your experience of managing competing priorities of universities and business?

DR: I'll pick it up while they're giving it a bit of thought. So some things, at least from a personal perspective, have been easy, some things difficult. Easy things tend to be things that are more to do with match making, just raw activity the sort of stuff you look for at the very beginning of setting these up. Things that are difficult I think are really getting activity to the space, why is that difficult for a university you would ask and I think it's difficult for Innovation Centres because of course the research base is right there, you want the top research groups connected in the industry really cooking on gas to do those things.

You have to identify those, you have to get to the people that are at the top of their game and everybody else probably not even in this country and get their interest. There's a very strong sense of immediacy there so the second problem is really getting these things to run quickly and that's a tough act to

pull off, we're asking Innovation Centres to do all of that and coming into university which is why I think it takes a bit of time to get into the zone.

We've seen that with other things, I mean at Edinburgh the stuff we do with prospect and aspect really took off, 10 years it took to get to that level and we had to educate ourselves to get there so it is a long term thing. Those are the kind of tensions, those are the things that are difficult, latency, alignment, deep engagement takes time. Match making doesn't take time, it's a mechanical thing you can do.

JJ: I think that's a very fundamental place which goes considerably beyond Innovation Centres. I think the UK does better than many countries in terms of having a positive relationship with university based researchers and the sectors of industry of business that have common interest. I was thinking particularly of university researchers, for example they see that interaction not so much from universities but from institutes, it only works where there is some commonality of interest and one way or another in most UK university they have a research mission.

Researchers care primarily about the apprehension of their peer group, they will care about that subjectively, they will care about it objectively because in many respects that what drives the mechanical things like research excellence framework, drives in international university league tables, drive and demand from international students and so on, so inevitably there is going to be a tendency for those individuals who think they are the top researchers to want to do what they think of as research which will score well academically.

That's a generalisation and there are many counter examples, but they're normally counter examples driven when they have a relationship with the opposite number or both sides are sufficiently likely to realise there are complimentary goals. Innovation centres are not yet sufficiently mature that

that has developed as culture of the Innovation Centre, but there are some examples where existing relationships across that interface have continuation to the Innovation Centre and they serve good examples.

I think if one really wants to resolve that question, one cannot leave it to relatively small organisations like Innovation Centres to do it, that needs to be tackled into someone at a higher level and I'm not even clear that the level of the SFC is sufficient to resolve it.

DL: Can I just put in from a slightly different perspective, I don't see it as competition in priorities. Universities within industry driven challenges and opportunities for quite some time, strategic research is very much influenced but that doesn't mean to say that we're overlooking fundamental research because often the applications of industry of tomorrow respond from some of the fundamental investigations that take place just now.

I don't particularly understand or acknowledge that there is necessarily funding with competing power between industry and universities if it is understood what each is bringing to the party and I think if the attitude of appreciation of each side's contributions a lot of innovation and a lot of industry challenges can be tackled more successfully and I think it's part of the Innovation Centre's story about how we optimise that relationship in many of the relationships that we have in Scotland. Some are doing it quite well; some are learning how to do it.

JR: I would take that a little bit further because I again don't see that there are competing priorities but thinking back to the question about risk, I think one of the challenges is that the industry partners in the Innovation Centres are more risk averse than the university partners because their horizons in the questions they are looking at are shorter term or immediate whereas universities can

and will want to take a more longer term, more fundamental, more speculative approach to addressing questions.

And I think that there is a great opportunity for the Innovation Centres to use that academic perspective, put it in front of industry and see if we can raise a longer term view, take a more four-sided approach that would take us into new areas, genuinely innovative areas, in shared enquiry and if there is any competing priority existing at the moment it would disappear in that longer run.

NJ: If you look at the way the university of Glasgow has engaged and the projects we have engaged in, there's one centre that stands out more than others and that's where the academics and industry are working from set up and it's getting that alignment, Julian said that maybe we haven't had enough time for Innovation Centres to embed in and maybe this one is ahead because people were working together in some ways and before the centre was set up, and that's driven the project through so it's alignment that the industry or in some case the public sector want to do the same thing.

GR: Can I just test that a bit? One of the demands, the unfulfilled demands is for skills that are delivered at Further Education level so if a business comes to an innovation level seeking help in development at FE level, are you saying that will be perfectly aligned with the university's mission?

JR: If I can maybe start on that, I think that from my own university that response to skills development is absolutely aligned with our mission and we have a very strong partnership in place where the university of Sterling and College was delivering a series of programmes that were directly responsive to align with industry needs, that are designed in response to direct input from employers. I

would also say that in my view, that's not the primary business or the distinctive contribution of the Innovation Centres, what we must ensure is that the business approach the Innovation Centre with that question is immediately and seamlessly signposted to the right part of the system, if the Innovation Centres try to address other parts of that system then not only would there be wasteful duplication but they will actually be distracted from their core and distinctive value added position.

LR: I'll just expand on that a little bit. I think you're right for the oil and gas sector, [inaudible 00:23:59] and Aberdeen and [inaudible], the local college, have put together this menu from schools right through to PhD level of all the relevant skills matrices for that industry and it's quite a cohesive document and [inaudible 00:24:08] have replicated that for other sectors. So I think where Innovation Centres should be aware of what that landscape is and if need be work with those partners to fill the gaps, for example MSc for oil and gas and it is coming forward from the oil and gas Innovation Centres, certainly not to duplicate but to act as that signpost for partners so they're aware of where the skills development capability already exists.

NJ: To directly answer your question, is our fee linked with the mission and the mission is about education and we are about finding education bridges and absolutely FE we did not deliver FE courses at the university, we have had very successful Master's level courses but we would signpost the sector. The direct answer to your question is, the mission of the University of Glasgow is not [inaudible 00:25:11].

DR: If this was an interview this would be a probing question [laughter] because the bold answer is no, but that's not the right answer because you have to look

at the broader picture in all of this. Anybody that looks at an Innovation Centre that looks and says there's that investment that stands alone is doomed to fail, that's what that was, but it doesn't. Let me take an example, Data Lab is one we're involved in so it's data science, and if you said what do you need to actually ramp up data science which is a big part of computer science and everybody says skills, everybody, the [inaudible 00:26:00] review, all this sort of stuff that's been going through.

We had Eric Schmidt turn up in the UK and tell us we were rubbish. All that sort of thing has been going through, so we know we need to have basic skills schooled up. Innovation centres aren't going to do that, actually universities will help so we have computing schools in the UK, we have networks, six networks for computer science across Scotland, people willingly doing things, all of that helps and Innovation Centres can pitch in and they will never drive and they shouldn't drive, it's not on their path I don't think but it is part of the mix.

So there are other people who interact with Innovation Centres who will help drive up that Further Education agenda all the way down to school and it does mean to connect up ultimately. Personally I would say there is more to be done. It's not Innovation Centres that did that directly, they can help and I went to an event not that long ago, school kids in ramping all that up with other stuff they were doing, it's all good.

JJ: Well yes I agree, I was going to put it perhaps a little more naively. I suppose if you wanted to be prosaic you would say oh well the Innovation Centre is just a portfolio of projects that are assessed as good and satisfying or not, but that would be wrong. Actually a great deal of initiatives such as Innovation Centres is that it creates community, a member of a community, one has access to

schools in the facility. Neil is absolutely right; universities don't do Further Education directly but Further Education is an essential part of an eco-system.

So just like at my place we have agreements with Further Education Colleges which are a practical thing, which give us that broad relationship with Further Education Colleges so we know what goes on, so we can tell our friends in the industry the skills we're looking for here and not there, there and there.

Having therefore some way of ensuring that the Innovation Centres are set up in such a way that those sort of relationships are stimulated and so on is actually rather an important part of their mission and it leads back to what you were saying which is something I would agree with, the biggest short term success that I've been able to spot in Innovation Centres are those based on relationships that already existed.

New relationships will develop as time goes by but there may be actions we can take to foster relationships which are usually based on mutual understanding. Actions at that time are more likely to get the alignment of missions.

GR: Let's move onto the next one.

WF: Okay, I'm William Findlay, I'm from GlobalScot organisation. I'd like to talk a little bit about how the R&D works within the universities. We know the universities have their own R&D programmes and Innovation Centres and businesses have now come up with another set of R&D requirements possibility, I just wondered how well they are aligned with each other and does it lead to conflict within the resources that you have?

JJ: Does a university have a research strategy? Yes of course it does. Does that mean that it has monolithic resources which it can then deploy, you know do I sit in the signal box and pull levers and people do things, no of course it's nothing like that at all. The resources which a university has in order to undertake research are extremely heterogeneous, not many of them just come up with the rations.

Only some of them are institutional resources in the sense they're attached to a level from the signal box. A lot of them have to do what individual researchers what they like to do and it has to be that way, because actually we need to employ creative people. Therefore, any ideas about coherence and direction and mission and research at university is something that evolves over pretty long periods of time and it certainly is a command for control.

What does tend to happen, though, is that able researchers tend to choose institutions whose missions align with their own personal mission, so University like mine or a University like David's we are very much aligned to the idea that they're doing this research because we want to acquire a capability other than merely acquire it for understanding. In order to make that work, you need to be able to build that community, that eco system of the university researchers and their opposite numbers in industry and business, funding agencies, people like me that try and make the whole thing work coherently and that could make the whole thing work quite well.

With the Innovation Centres I guess what we've done is picked out the specific areas of technology and business across Scotland and said we think we're probably going to be quite good at those, we think there's a constant which goes on in the industry sector and what goes on in the university sector, let's see if they resonate with one another and some of that is working quite well, some of it has a bit further to go but it's not something that happens fast and it's not something which any individual can command.

DL: Is there a particular concern?

WF: I can imagine industry comes with a problem they want solved rather than a whiteboard type approach to this and I presume that maybe conflicts a bit with what you're used to doing?

DL: I think it's important to distinguish the role of a university as a host and the role of the academic centres in engaging with the challenges that the sector will bring to that community. I think it's really important that if you have a host you understand you're there, essentially pass that they care, you're not there to own the Innovation Centre, you're not there to direct it sadly.

Certainly there will be certain checks and balances, we mentioned risk earlier in making sure that things are done properly and accountability we have a responsibility to the FOC but there is a fundamental understanding that's required by the institution to become a host and they're there for the community in that pass that they care role.

That doesn't preclude any of its academics getting engaged in the Innovation Centre and indeed probably one of the reasons why it's acting as a host is because it has academic core strength in the area of the Innovation Centre, but thereafter it's about how does it help the Innovation Centre galvanise but the industry and academic resource in the country to start working together in a much more intensified way.

Perhaps sometimes short term issues but perhaps sometimes long term issues in order to change the economic direction in the centre so I think it's important to understand the role of the university is in that twin track, pass that they care and looking to make real differences in the sector working with industry.

DR: I think that's right, a reality for anybody that's a host to these is that you have to have two mind sets, you keep them separate but they interact, and one is that you're an honest hub and you operate for Scotland across the community and beyond and you must keep that in mind, and then your other mind set is that of course you will get projects and so actually because of the way things have landed it's probably quite beneficial that universities are close to the hubs and very keen to get projects in, but that's the separation.

The other thing that links into this though, I was thinking this when you asked the question, why do I not see this as being a huge problem and the reason why I think this would be true for any of the universities, a university has many things on the go and you act a hub for different things, so when you have your hat on as being somebody further in the research stratosphere, keeping that separate from the bit where you're acting as a host for the hub, then you have many things and will interact with many which are not in the country at all.

And so that's your blend as a university, so all the universities are those kinds of hubs and they can be very useful as Innovation Centres actually, you give them opportunities, it doesn't feel like you're having to be very careful about this particular one because that might get interrupted whereas a little bit more confused, how does that fit together for Scotland to push that, how do the Innovation Centres themselves fit in with all of that context, that's where I feel it's a bit more trivial.

DL: What the Innovation Centres have done in terms of programmes, inevitably because of the short space of time they've been created in, is enabled us to accelerate and broaden and deepen existing lines of R&D that were happening, so this is absolutely true of agriculture in the Innovation Centre, the first set of projects had no new partners involved, had no new challenges involved but

were being delivered at greater pace and at greater scale and that's created a platform so that the next set of projects have got a significant number of new players involved and are starting to look at new solutions and the spectrum of work that has been led by the Innovation Centre now is bringing in yet more, and starting to ask new questions so I think there's no conflict.

There's been a number of examples of that acceleration of existing relationships, that's inevitable because of the way in which the programme was developed and you can't start from a blank sheet of paper. What I think will be really interesting in this next phase is for the Innovation Centres to stimulate more of that enquiry from business, thinking in a slightly longer timescale, that starts to ask some new and interesting questions, fundamentally that's what researchers respond to. Where are the questions? What's exciting? What do we want to pursue that we do not know? I don't think any of the R&D programmes that we've seen in the UK or beyond at the moment are really getting us into that exciting territory where new questions are being asked from an economic perspective.

LR: Yes I'd like to reiterate that and I think turning your question the other way is Innovation Centres start informing our future R&D strategies and how our academics can help contribute to the next challenges, and I think it's important to ensure the Innovation Centres do not continue along quite a narrow unit, that they have this enquiry on the horizon scanning the next phase of issues for those industries, I think that's where our academic communities should really be able to help and start to engage in those workshop style sessions I think will be important for the future R&D questions.

WF: You would like to think that in the future some of the university bases maybe respond to ideas coming out of the Innovation Centres.

LR: Absolutely.

DL: That would be my hope.

GR: What if some of those ideas though are not in university space? What if some of those ideas are in Further Education space or industry space?

DL: I think that's great, I think that's exactly what should happen. The next phase we should be seeing a pipeline in much more direct, economic, Innovation Centres should be getting to a point where there is a strategy of how implementation for the good work done so far actually is much more imminent in economic impact, so I think that there is an opportunity for a much more strategic approach to this and I'm quite content that there's a role for all the education providers in school and development and training, what's the point of developing a better economic basis if you've not got the skills and people to fill jobs in those industries? It has to be integrated in that respect and it's perfectly reasonable to expect innovations that have come out of the phase one going to much more manufacturing direct activities so it has to happen.

GR: I think my recollection of the evidence is that most business innovation happens between businesses and customers and suppliers and the role of universities in business innovations is way down the chart, so you would think that industry led Innovation Centres would overturn, move further and further into business to business space, I just wonder how that fits with university thinking?

JJ: I think there are two aspects there. The first is think about where we're sitting. We're sitting in offices of the Scottish Funding Council, a funding council of higher education, Further Education, it doesn't directly explicitly at the top line have an industry business mission. The second thing to say is, and this is not a criticism of all Innovation Centres, and it may be that it isn't even a fair criticism at any initiative is to do with coherence.

This is hardly the only initiative that is intended to get a synergy out of resources in universities and resources in industry business, but there is a long list of them, some of which are Scottish, some of which are UK. The average academic individual researcher I have won't really care, it's just a resource one could attempt to draw on, but we probably should care a bit.

There certainly ought to be some degree of coherence between policy and support of the Innovation Centres, policy which might support the relationship between Further Education and higher education, policy that might support the trade organisation and so on and the way that they connect, it doesn't necessarily have to be that elaborate, it would just be nice to think that somewhere, somebody was beginning to think how these things can be connected together, certainly so we don't end up competing with one another, which wouldn't be too hard to find one or two examples of that.

JR: Thank you. I think the question that you've asked is the most important one but I think it's a question which is not just for this review, I think it's a question fundamentally in the other piece of investigation and enquiry that's going on at the moment, into the role of the different public sector agencies, the funding councils and enterprise agencies and others and I think that the analysis that you based your question on is very much what we all understand to be the situation at the moment, but that situation at the moment, the

models that we have in the Scottish and wider economy at the moment is not delivering the scale of economic gain and economic impact that we require.

One thing I think would be very interesting that I might suggest if you haven't done this that you have a look at, is some of the work that Scottish Enterprise have been doing looking at wider innovation, how we can support the development of more innovation companies and the quality which is actually what we want. If you look at companies which are innovation and successful, the sources of innovation partnership are quite different into the broader model.

And I think it would be useful, you'll see enhanced attention to universities, you'll see enhanced attention to schools which addresses part of the FE question as well and you'll see some characteristics which we should absolutely be forced to go on if we want to go on because I'm not terribly interested in where we sit now in whose offices, I'm interested in where we want to be sitting 10 years hence and I think we need to do things radically differently and that involves all of us.

GR: I think Julian's and your observations are very helpful, I just wonder if I could build on them for a moment. I've got the SFC's description of the Innovation Centres and the text begins, 'the Innovation Centre's programme was established by the Scottish Funding Council in partnership with Scottish Enterprise and Highlands and Islands Enterprise' and I just wondered if you had any observation about the vigour of that partnership between three public bodies?

JJ: I think I might have already implied what I thought about.

GR: Do you want to just be explicit?

JJ: I think we have seen much more of the SFC in this than of its partners, certainly in terms of anything which was operational and I think at times that has posed difficulty because the relationship between the SFC and the universities and colleges is longstanding, it's well understood, it can be quite bureaucratic but often necessarily so, it's nothing to do with the individuals that work for organisations who I think have been imaginative and flexible but there is something about culture of the organisation and its responsibility to government and its responsibility to universities which don't exactly resonate with the mission of the Innovation Centres but which would become more resonate if a relationship with those other bodies that you mentioned was more symmetrical.

WF: Sorry, the other bodies meaning?

JJ: Meaning Scottish Enterprise, Highlands and Islands Enterprise. I think if there was a sense that what one was trying to generate there was a shared culture and a sense that there was a shared responsibility. You were talking earlier about risk appetite, that's another dimension to it. I ought to say, very quickly, that I've not exactly studied this relationship in detail, and the consequence is I may well have misconstrued, I do think that that's an issue worth of political attention.

DR: I agree but to put a positive on it, the thing is everybody has been switched onto it, everybody believes innovation is an idea but so many hares are now running is the truth of it. What I think we lack is something that this will not be

the university's, something that allows us to have this broad vision that helps pull these things together because when you're sitting in a university we know what our strategies are, you can argue how good we are at them.

We do indeed have some view of what that is but it's not quite the same activity and it shouldn't be because universities have their own things to do, so then for Scotland for innovation it's actually quite hard to have a piece at the moment, it's hard to do because there is no mechanism. It's way beyond, they would not provide that and should not provide that but there is something, it does feel like there's an absence somewhere. Sitting here and people are nodding, I know exactly what that is but there's an absence so it would be helpful to have that.

DL: Can I just reflect on potential use of technology because I think that helps with this coherency that's maybe required. It's perfectly reasonable to put universities' and SFC's engagement at the low TRL end, that's where the research takes place, the Innovation Centre I think were supposed to offer a middle ground of TRLs to help with that translation between what goes on in universities, responding to challenges and then making a difference in the way that companies can see future, but we need to think about the top end of the TRL scale where we're actually into manufacturing or selling goods or making money.

At the moment, perhaps we haven't embraced enough of how, for example, the enterprise agencies can support companies when they're trying to make that transition up the TRL scale. So at the moment, the money comes from Innovation Centres is useful for academics, why is there not a parallel programme that helps at the right time, particularly for SMEs so that there's an integrated approach of good ideas developed to help companies then make

use of those as they develop a strategy? That's where I think we need to think about the TRL scale and where agencies come in.

GR: Thank you very much for that. I'm going to move on because I've got to balance interest and speed. Tim.

TB: Moving onto a slightly different subject. We're interested in the degree of Scottishness of the Innovation Centre programme. I guess there's maybe different ways in which you could interpret that, Scottishness, but one is certainly geography, another one might be the extent to which all the partners and the sectors are involved. I'd be interested in your views about that and where there are areas, cold spots, let's say.

JJ: Sometimes when you pick the subject, you pick the geography and the Innovation Centre I know most about is oil and gas, so you know where that will be.

JR: Could I challenge that slightly? Because if what you say is absolutely true, that if that's where we finish with the innovation programme, we have absolutely failed. What we must be about is looking at the existing geography, the existing technology base and thinking where could it be deployed in ways that we haven't yet imagined.

Oil and gas and offshore technology has developed for oil and gas deployed on the other side of the country in deep water agriculture systems, for example, sensor technologies deployed in different agriculture systems, for example, and these are the examples I know best and I've told you already what I think about the geography and opportunity, we must move this whole programme

into space that doesn't currently exist or that we don't currently seek and that I think is just the key, in answering the question.

JJ: This is the grand version of Graeme's chairman problem which is tension between the timescale and needing to cover the ground. If you could take a planning horizon of a decade or two, you're exactly right and I agree with what you say. There's also some correlation between time horizon and the TRLs, generally the longer planning horizon the nearer the beginning of the TRL scheme, so I think there's potential.

DR: It probably varies a lot between, as recently, Data Lab is geographically distributed because we knew it would be and actually having run it for a bit I think that was a good decision. For others that didn't make sense because it needs to have a firm base and then of course you would hope it would expand but you have to start from the base, and I think they have different natures in that respect, the ones that are connected to healthcare there are slightly different dynamics for them I think.

These things will all work through. What would be very helpful would be to have a common view, so you worried less about that and got better at being able to direct the business to where really matters. That's quite difficult to do because we just started and of course everybody's looking at their patch and trying to build it, but the ability to look across would really help.

NJ: I would say we're not being exclusive in engagement across Scotland, Scotland have geographic clusters where you see expertise in certain areas, of course that's going with innovation orders at the moment and should you spread everything thinly or should you cluster around and I haven't got an answer to

that but I think some of the innovations that have been set up show maybe geographic clusters aren't sensible in certain parts.

JJ: Well there's plenty of history in England to show that particularly the smaller industries, geographic clustering can be very effective.

GR: But for example Scotland has got some quite distinct economic development challenges because there are sparsely populated areas, very roughly around the country with some notable exceptions, and there are specific types of businesses, especially digital ones, that can be developed in sparsely populated areas through the [inaudible 00:54:54] business in a way that other industry sectors would find more difficult. I'm just wondering, is that the sort of thing that innovation perhaps... is that the sort of problem that innovation hubs tackle, or are they looking at problems that are generated by indigenous firms? Are you looking at what's not there as well as what's there?

DR: This would be a good one to ask the CEOs of the Innovation Centres themselves.

GR: That's a very fair response.

DR: So I do get the sense that they're thinking about these things. Of course you have to work with what you've got but there's only so much you can do and you start from positions of strength, so the IC directors I've met tend to be pragmatists, and so they all go for where they think they can generate energy early on but I think the will is there to do that. It's because you mentioned the digital stuff, so yes that is important. Will, if you're looking for big research

ideas, do they come from there? No, by definition because the universities are not there, it would be good to get the industry to be receptive and pull out there, yes, that would be a good idea. Are we there yet? No.

JJ: It depends what you think the remit of Innovation Centres is. Irrespective of what's written down, I suspect what's on a lot of people's minds is Innovation Centres are there to take technology and push it along on the technology scale whereas actually if what you care about is let's say a geographic distribution, they have an awful lot more to do with infrastructure development and policy which probably isn't immediately inside Innovation Centres.

DR: Which is another connective.

JJ: Exactly.

GR: Thank you for that answer. I'm going to draw us to a close now but before I do so I just wonder if in a minute or two if there are any really pressing points that you have not had an opportunity to share with us?

JR: Over ten years ago I was trying to help answer these questions in the North West of England. The economy population and scale of which is bigger than the whole of Scotland. I think we've got to be very careful about cementing this endeavour, integration is key and that must mean that we get this right across the whole company.

GR: Okay, I shall take that very good point as a close and if I may I'd just like to thank all of you for the way in which you've helped us with this enquiry because it's a challenge to meet six of you in an hour and get through all this ground and the way that you conducted the meeting helped us enormously, so thank you again.

END OF TRANSCRIPT

TN: Tim Newman, VP for Research at University of Dundee.

PH: Paul Hagan, VP of Research at Robert Gordon University.

DW: Derek Woollins, VP of Research at the University of St Andrews.

KG: Kim Gilchrist, Head of Research and Knowledge Exchange at Queen Margaret University.

GS: Geoff Simm, Vice Principal of Research at Scotland's Royal College and a member of the Scottish Aquaculture Innovation Centre Board.

GR: Thank you, let's make a start.

AS: I'm Alex Saxon from Research Councils UK and I'm also an observer on the SFC [inaudible 00:01:48]. So first question, bearing in mind that the Innovation Centres are designed to be industry-led organisations, how would you observe how the governance models are working at present?

GR: Who would like to start? I gather you don't have a spokesman? Paul, would you like to start?

PH: I can start, I'm trying to avoid hogging the floor as it were, given my background in this space. My perception is that the governance models vary

across each of the Innovation Centres and the success of those models, of the operations is different. I think some of them are still academic driven rather than industry driven and I think that was part of our expectation when we started out. This was about changing the culture of the interaction between the industry and academia.

The original view, I thought was that industry would drive this. I don't think industry were necessarily up to driving it and didn't appreciate that they could, in some Innovation Centres rather than others. In others there were strong academic links that were driving it from a research prospective rather than an industry solution, problem solving innovation perspective.

So I think you would need to interrogate each of the individual Innovation Centres to get a real hand on how well it is working. But also I would speak to the people that they serve, the people from the industry that interacts with them.

GS: Happy to give a view from the Scottish Aquaculture and Innovation Centre which is the only one that I have a detailed knowledge of. And as I mentioned before I am a board member so you may want to take that into account, I might be conflicted in that sense. But it had been underway for a year when I joined it. I've spent 30 years in terrestrial livestock research. Much of it in collaboration with industry. And I was extremely impressed by the strength of industry lead in that one Innovation Centre that I'm familiar with.

They had some very powerful board members representing some of the major aquaculture companies in Scotland. And of course that's a huge industry for Scotland. It's the largest export of food for the UK. In fact now, most of that comes from Scotland. So some very big players in the industry represented on the board, so that they already, by the time I joined, got four very clear priorities for innovation identified.

And they are ruthless in sticking to those even though academics, myself included, sometimes, try to suggest other little things that might be brought in. So I think very strong governance, very strong industry upon that one.

PH: If I could come back briefly, Graeme, the other challenge of course is the interaction between the universities and Innovation Centres and there I think there has been a lot of work in trying to broker a better interaction, but that has been a significant challenge.

GS: Perhaps we could come back to that?

KG: Queen Margaret University isn't involved in any Innovation Centres and the sectors that we work in aren't covered by the Innovation Centre portfolio as it stands at the moment. We have tried to engage but I think there's been a lack of visibility in terms of their achievements and indeed their best practice. Today I find it quite difficult to find out what they achieved, to see kind of consistent outputs impacts or indeed targets across the centre.

GR: So have you invited them to Queen Margaret University for example?

KG: Yes, I mean we have tried and we have, and to be fair the Innovation Centres, it has been an open door where we've tried to approach them but I just feel that our research is very applied and it isn't rooted in to the particular areas that they operate.

SB: I mean our experience are not dissimilar as another small university. We've had mixed engagement with the Innovation Centres, the perception is that some of the Innovation Centres are very good in counselling the entire industry. Others tend to focus on fairly discreet areas within the industrial sector. And our views would be that it varies a lot across the East.

For example, the HEI one does seem to have a very clear strategic vision. Other Innovation Centres don't seem to have the same kind of vision. And I would also question if Innovation Centres are business lead, should they also be playing the role in facilitating discussion about strategic parties for that industry rather than simply responding to business needs?

GR: And in your view are they...?

SB: My perception is that, one of the observations so far, and Innovation Centres are still growing, is that they tend to be responding to immediate needs rather than shaping the long term agenda for the industry. And I would say, for example, Oil and Gas, they could play a far more strategic role in developing long term development priorities to the industry. So I would suggest in going forward, one of their parties should be developing strategic vision for the industrial sector.

KN: Well the Glasgow School of Art is essentially involved in DHI, Digital Health Institute, and we're engaged with Seasick Construction also. We were involved from the off in early critical discussions towards NIC for tourism and for creative industries, and I dare say creative industries may crop up again as something within the sector, as we see it, it seems that there would be a value if creative industries could be catered for through the next phase of Innovation Centres.

With the question in mind which I think is about management and its suitability, I don't have anything specific to put to that other than to observe that some of the feedback I've received in advance of today, points out that the IC principle of entrepreneurial freedom has given rise through variance in terms of management of IC, management approaches across the IC range.

Now to make that point, that's a good thing but potentially a bad thing. And it might be, if I am interpreting my feedback correctly, the next phase all the ICs might pay attention to normalising some of the management arrangements.

GR: When you say normalising do you mean harmonising?

KN: Harmonising would be a better way of expressing that.

GR: And do you have a thought about how that would fit in a family of ICs that serve profoundly different industry sectors? Some observers would suggest that we should not have harmonised approaches where you don't have harmonised industry?

KN: Well I can see the sense in that point. I don't have an answer Graham, but you're correct to describe the tension between the ICs being harmonised by dint of the fact that we're all funded by the SFC, but also they are to serve diversity of industry so that's another way of describing the obvious tension.

GR: If there's nothing else, in that case Douglas?

DM: Douglas Mundie, I'm a board member of the Scottish Funding Council and a member of RKEC and a member of the Finance Committee. What has been your experience of managing the competing priorities between universities and business?

TN: Well I should preface all my remarks by saying I'm a year into my job and my academic career has been one in theoretical physics so I've not had hands on experience with the question you're addressing. But I've had a very interesting year thinking about and attending all sorts of knowledge exchange events and such. So that gives me in a way, a clearer view because I think I can see things from a helicopter view.

Your question addresses what is still an unsolved problem and obviously the Innovation Centres were created as part of the solution to that problem. I think an issue from a university perspective is that many things have been created in order to try and solve this problem and what people often talk about is how cluttered, that's the word that seems to be used, the landscape is. And it's certainly the case that each thing that is created is created for very good reasons and with a lot of careful thought.

Over time I think we do have a very nonlinear landscape and I think there's a famous schematic of this which nobody can take it in one go, it's so complex the way that universities and businesses interact through probably fifty or sixty different agencies. I think from my point of view the absolutely fundamental point is one of mutual gain with different timescales operation.

So industry obviously has to be economically viable with short timescales and they need solutions to problems on short timescales. University research, typically, if it's going to be impactful and transformational will actually operate on quite long timescales, and that's why in the REF, we have a 20-year window

where we capture in fact, some of the very best impact over a 10 to 20-year window.

So I think the issue that we're dealing with is how do you relate what can be the most innovate and impactful work from the universities which may be over longer timescales, to what may be more short term issues in the whole industry? Although bearing in mind we also want transformation of industries, if an industry stands still and just solves short term problems, it's going to be extinguished within a few years. You see that especially with digital instruction now. That's just some rather high level statements but I think they underpin what are a number of continued difficulties in this.

And if I bring my remarks down to the Innovation Centres, the feedback that I've had from senior academics at Dundee, has generally been quite challenging feedback I would say, about Innovation Centres. What comes through very strongly is of course the diversity. They have to be diverse because they're serving diverse industries but at the same time if we're given Higher Education institution, they have to find eight ways of working in the Innovation Centres space, not one way of working and that can create an enormous amount of effort for research officers, for example.

And so I think this harmonisation point may be around other ways that we can streamline some of the modes of working to simply save on what's quite valuable staff time, in over stretched research officers that will become even more over stretched because of the reduction in funding.

DW: I have to say that in terms of Innovation Centres, I feel that St Andrews feels like a bit of a bystander in that they've largely passed us by and we can take a some of the blame for that, but maybe also geography. We're a bit like Dundee I think. Research intensive but we're seeing the difficulties rather than the

opportunities in terms of our relationship with Innovation Centres. In terms of relationship with business, it's variable.

Tim has described some of the problems. I think we find that some companies come along and want to interact with us and want us to work on long term problems. They're not coming to us through the Innovation Centres though. They come from outside Scotland, many of those companies. And we have this other mismatch in terms that we want to be an international university and the Innovation Centres are largely focused on Scottish economic benefit. So we're trying to match a whole load of different aspirations which don't necessarily match in a neat one to one relationship with Innovation Centres. And against increasingly pressured academic staff who have a lot of business to get through in all kinds of ways.

So we shouldn't underestimate the challenges. What I was looking for, I think in Innovation Centres was to reduce the activation barrier, and at this moment I haven't seen that happen, for interaction between academic staff and industry. I'd like that to be a much smoother, easier transition. But at this moment I haven't seen Innovation Centres do that for my staff in St Andrews. I have to say it's a very small group of staff who have been interacting. So I've got to be very careful about making generalisations on that basis.

KG: As I said, Queen Margaret hasn't been involved specifically with any Innovation Centres, but just a general comment around our interaction with industry; I think that the focus on funding in terms of supporting the Innovation infrastructure in Scotland has tipped far too much towards supporting intermediaries, third parties and business development type staff and there needs to be more funding directed at academic capacity building, and I think that is a real challenge for a lot of universities in terms of engaging in business.

GS: Just coming from aquaculture research, I'm looking at this from almost the opposite of the spectrum in theoretical physics but in fact quite a few of the same things apply, I'd written down timescales as well. Different expectations on time horizons are a key feature of it. Industry are generally wanting answers faster and on typical success rates, you know, I think most partners in industry research that I've been involved in have far high expectations of what success rate we expect from research.

But very rewarding and frustrating in equal measures, at other times. And fast moving, but it boils down probably like most types of human endeavour to willingness to learn each other's language and to be able to communicate and identify what the problems are and what might be a researchable solution. I think for the Innovation Centres, specifically again, my sample is very small, it's only one of them but I detect a great deal around the one I know and I think have high hopes of them achieving that good relationship.

It's interesting, when I joined the board, the view of the, I'm the only academic on the board, the view of the industry partners on the board was that the link between academia and industry in aquaculture was dreadful, far worse than in any other sector. We have an independent scientist advisory panel made up of scientists who have a large of research contact with aquaculture. Their view was that it was great and you know, I tend to their view actually, having worked in terrestrial aquaculture for a very long time, I think the interactions there were good. It is just that people always think that they should be better.

I mean if I was reviewing the Innovation Centres today, one of the surprising things I've noticed is the lack of introducing businesses to universities. We have at least on one occasion suggested an Innovation Centre that they bring along business people to understand what work we do better. And it was, well, I'm not going to say.

GR: So just to clarify, you have invited Innovation Centres to Abertay?

SB: Yes, we've invited them, we made a suggestion that they bring business people along to better understand the work we do and I don't think anything ever happened in the end.

GR: Can I just test my understanding of something because there's been a few references to Innovation Centres connecting to university research but if I read the vision, it's about connecting to university infrastructure, human resources and research. The research comes third on the list and I'm just wondering if this is just the sort of thing that happens in a discussion where we latch on to a word or whether or not it is your perception that Innovation Centres are primarily about connecting to the research in your institutions as opposed to other capabilities?

TN: I think it comes down to what, I mean this is a very boring remark and I apologise because we hear it all the time but it comes down to what we mean by innovation actually. I think for many of my colleagues at the University of Dundee, innovation would be thought of in terms of something transformational. It wouldn't be seen in terms of essentially sort of service work or somewhat very incremental steps.

So if you talk about infrastructure, universities have very expensive research infrastructure that is paid for from a plethora of different sources. Nationwide their infrastructure is not long term sustainable as we know, and that's a big issue for the country in terms of its research landscape. I think universities are actually always very generous in providing access to the infrastructure because they know how valuable it is. I don't think Dundee's been overwhelmed with requests for use of the infrastructure.

SB: That would be the salient point I'd make, universities will have a wider range of facilities, having a dialogue with businesses could better understand how that could contribute to their business model. I'll go back to for example, visualisation technology, primarily designed for games industry but with wide application to a variety of businesses including telemedicine, risk management, simulation. One thing I'd hoped the Innovation Centres would have done more of is actually developing discussion with businesses about how universities can better meet their needs.

KN: From my own perspective from GSA, and just to mention we are principally involved in IC only, DHI but unquestionably DHI has allowed us to reach out further than normally for design research expertise to meet new audiences that we otherwise wouldn't have met. In a strange way I would kind of split the difference with Tim to say we are arranged in transactional arrangements with the Innovation Centre in a good way because our research is conclusive to that kind of interaction with business.

So I'm less worried about the possibility that the ICs are indeed functioning as generators of transactional meeting points. I think that's fine. Related to that though, there is a concern, this touches on us being interested in the long term durational act of our research. So on this point I concur. Are the IC metrics appropriate for the HEI's seeing mutual gain in terms of tracking and valuing of long term active research?

So for example, to make that real, if we put in our design research based service into DHI, we're interested in the impact of that on the SME in the Highlands and Islands but are the ICs metrics appropriate for us to be confident of that impact? In other words, if we're immediately assisting that SME to employ more people, if we're not immediately assisting that SME to

make more money, is that a point of tension? In other words, even if transactional, can the IC metrics be extended to think about impact and added value perhaps in a more nuanced direction?

GR: What about non research interactions with industry? Because we keep on looping back into research but there is a sizeable volume of university business interaction that is not about research but might be about continuing professional development or it might be about the use of facilities or it might be about the downloading of well-established expertise rather than extending the frontiers of knowledge? Have you thought that Innovation Centres and universities would be interacting in all of those domains?

SB: Certainly as an organisation, as a university we don't look on to the CPD activity for example, in things like nursing. We've not explored this as an option with Innovation Centres. I suspect it might be the actual mix of Innovation Centres and not ones where we'd necessarily be involved in CPD. If there was a food and drink Innovation Centres, I expect we would be very heavily engaged in CPD.

GS: My experience is in evidence gathering for policy making, particularly around the environmental impact of aquaculture and horizon scanning. I think, just to, I'm not sure if this is echoing your point or building on it but I have very little interaction with Innovation Centres in my day job. It's through my membership of the board that I interact and I think one of the issues that is probably common to all of us is that the coverage is not full.

So obviously with specialist institutions particularly, there can be huge gaps between what we might have to offer and what the Innovation Centres do. So you're probably aware that there are four new UK Innovation Centres set up

recently, and we are involved with three of those. And there's capacity for greater coverage and that might resolve some of those problems. The model I think is a great one conceptually, it obviously works different depending on who is in charge and who the partners are.

GR: Okay, let's move on.

WF: Hi I am Willy Findlay; I am from the GlobalScot Organisation. I'd like to get back to the research side of the question here. All the universities have their own research and development programmes going on and I wondered just how closely you feel these are tied to what the Innovation Centres, which are autonomous, supposed to be business lead, are they tying back to what you're doing or are you off in a different direction?

And I think going back to the point that you were making earlier, is the innovation that is coming out to solve a problem for today or is it truly going to be a game changer for tomorrow? What are your opinions on that?

KN: Well can I say quickly what I said a moment or two ago about our research fitting well with DHI, which answers your question, or parts of it. But also the coverage point about creative industries not quite packing it in the Innovation Centres portfolio means, with reference to the second point of your question, that your research isn't perhaps as plugged in to the IC landscape as it might be. So within, we're the only HI in Scotland to be working with creative industries of course, so within the Scottish innovation scape, there is something missing that would benefit from the added value of that link to HE expertise. Which is both the research expertise and our people and infrastructure expertise.

SB: As a small institution with a fairly narrow range of expertise, we focus on inter-disciplinary research and on using novel techniques in one area of research in another. We would like to share that kind of knowledge with the Innovation Centres. I mean for example the work we done in business management would be useful for some industrial sector stuff who are going through very dramatic transformational change. How we would align that with the priority of the Innovation Centres is not clear. But I would think that part of the next stage of the Innovation Centres would be developing a wider range of interests for the universities and accessing a wider range of disciplinary institutions.

WF: Can I take it from that you feel you don't share at the moment?

SB: No, I think, if I had a concern about the innovations, I mean they are fairly new organisations, I think the next stage would be to move into a wider, better strategic understanding of the industries.

TN: Right, I'll probably be a bit repetitious here, I think everyone has to understand them, it's not often widely appreciated that the cost of research in the UK is not sustainable for all sorts of reasons and so in the short term that means that most universities are having to make really difficult choices about what they actually support. They're driving up the bar in the quality of research because they can't afford to fund salaries of all individuals who wish to pursue research and that's often done on the Ref basis, Ref measures quality essentially so quality is a great driver. And quality can be in terms of academic [inaudible 00:30:02] or in terms of impact which is much more relevant to the discussion today.

But I think everyone needs to appreciate that the thing that measures that is the Ref, and they may have a different understanding of impact than the industrial sector. I think this is a non-trivial distance that we have to maybe come to terms with. So to answer your question, I think there's no lack of interest within universities to engage on all sorts of fronts and certainly at the University of Dundee I would say the bulk of our research is applied, we have all sorts of interactions with the private sector.

Probably our most intensive interactions are with multinational companies through farming because life sciences are one of our biggest research areas. And that tends to be international in scope. I think the thing to get across, I think from Dundee is that we are a university that has to make tough choices and those will often be very harshly economically driven. And so we would like to work with Innovation Centres more but I think maybe there's this question about whether there's a mutual incentive to do so.

PH: A smaller university at Robert Gordon and one that has built its reputation on the basis of employability and close engagement of business and industry and significant contributions from business industry into our courses. They're far from being research intensive but I think in the areas where we have something to offer, and this is a mantra that goes out to the staff all the time, is to look for the opportunities where they can contribute.

So we're a hub for the Data Lab, we have significant projects funded now through OGIC and that's in terms of responding to the calls from OGIC and examining what we have internally and reviewing how we can exploit that and best present it to win the bid from OGIC. Significant input into IBioIC and again it's about looking at what we have and where that can be shaped, and some of it is construction. And I guess I would look at it in the same way that we do with European projects. I know that's a challenge just now.

In terms of constant proposals from Europe, rarely does it fit what you've got and you have to respond to the call in the best way you possibly can. And I think that's the stance that we've taken at RGU. What have we got, how can we respond to this request from the Innovation Centres. And I think we're doing it reasonably effectively.

I'd like to do more of it and I'd like to see it in other areas. We've been engaged with CENSIS and we've had discussion, we haven't yet broken into that area and we recognise as well that there are other institutions across the country that have more relevant and stronger track records in this space than we do. So we recognise that we're not going to have it all. But as I say, we're shaping what we've got to service the Innovation Centres.

GR: Are you saying you've got interactions with three of them?

PH: We have Data Lab, OGIC, IBioIC and construction, so four. And we've had some discussions, DHI came and did an open session for staff and we invited people from Dundee, we invited people from Aberdeen University and Robert Gordon. We had an open session with DHI which allowed people to see where DHI were and what opportunities there might be for research within the various institutions to further engage with DHI and to build a collaboration with the industries involved.

DW: I think I'm going to fit more in line with Tim there from Dundee. So we're research intensive, we think that we do things well enough to provide employability for our students as well so I don't think that's an issue for us. There is this mismatch, we've got interactions in some areas, if I had to define the sort of research going on in St Andrews, it's things like advanced materials, marine biology, bio-molecular sciences, they don't match up terribly well with

Innovation Centres. We want to do much more work in energy and sustainability, key factors from Scottish Economy and there isn't an Innovation Centre in that area.

So colleagues are able to work around, to meet us, as Paul says, the European proposals give you a kind of sense that you've got to be prepared to adjust your direction of travel, for 25% of St Andrews research comes from Europe so we're perfectly capable of adjusting ourselves to calls that don't look directly linked to your work. So at the moment we haven't hit the sweet spot in respect to Innovation Centres. We're still struggling with where that sweet spot is for us.

GR: It's quite a mixed pattern.

KG: We're in a different place to St Andrews obviously, something that I find quite challenging is the assumption from the existing Innovation Centres that innovation is synonymous with technology and technological innovation and it doesn't really adopt a broad and wider understanding of service based in innovation which is obviously important to many of the key sectors in Scotland, food and drinks, creative industries, tourism and indeed the financial services. So I think to be truly transformative, they have to embrace a wider understanding of what innovation actually means.

GR: I don't know if it's fair to ask you this so just tell me if it's not, but I just wondered where you think that focus on technology comes from? Because I don't read it in the documentation that specifies what an Innovation Centre is. So I don't feel that it's come as part of the deal, that it's not part of the written deal. So where has this come from?

KG: I think the historic success in commercialisation from Scottish universities has come from STEM based subjects and those sectors are dominated by large companies. The service based sectors, with the exception of financial services, tend to be dominated more by SMEs and the relationships between universities and SMEs are far from challenging but provide a lot of opportunities as well.

PH: I think it goes back to the point that Tim made, how do you define innovation and I know that this is a subject that Mr Swinney in his Scottish Innovation Forum has been addressing, innovation can cover a broad range, it can be technological and business process, it can be relations and interactions, all of those things are covered. I think the nature of Innovation Centres don't have an agreed focus. It tends to be technological focused rather than beyond that.

GR: It's been put to us more than once that Innovation Centres should not confine themselves to universities and they should look into the Further Education sector to find the skills that businesses demand. And I could sort of expand that further because the evidence that I recall is that most business innovation happens through the interaction between businesses and their customers and suppliers.

So instead of Innovation Centres looking into universities alone, there appears to be a case for Innovation Centres looking into wherever they find the source, the thing that businesses want. From your perspectives as sort of not yet strongly engaged, is the focus on universities just a phase we're going through or is it where Innovation Centres should end up?

PH: it is partly in terms of the funding allocation in that the funding allocation was used to establish Innovation Centres as funding for the Higher Education centre. It wasn't funding to go beyond it. And there is that provision and there has been significant effort, I know, within the funding council over recent years to blend the education side of the equation, the whole spectrum from FE through to HE. We haven't quite gone in that direction with the innovation agenda yet, I would say.

GR: Okay, let's move on to the next one.

TB: Tim Bedford, Scottish Funding Council, RKEC. So a bit about geography or indeed other interpretations of the word Pan Scottish. So part of the original vision of the Innovation Centres programme was that it would be Scottish. I wondered to what extent you thought about the aim that it has achieved so far and the extent to which we're moving to it?

KN: Well a quick answer from GSA is related to a comment I made earlier, and questionably our engagement with DHI has seen our research travel and we have seen the impact manifest itself beyond the urban centre of Glasgow into the Highlands and Islands and the entire, with the creative futures partnership of the Highlands and Islands enterprise plus the DHI revenue stream, to put it bluntly, has allowed us to develop a campus outpost [inaudible 00:40:42]. So we're reaching new audiences for design and research. And all of this is facilitated in a large part by that principle of the Innovation Centres.

GR: Would you mind just saying a little more about what it is that the Innovation Centre did to enable that?

KN: Well the DHI is lead initially through the University of Edinburgh. The work package if you like, which was aligned to GSA within that evolved as providing a certain type of design research which is about innovating business process. So the metric was about the volume of interactions chiefly. So we meet that for DHI, and the lead HEI and we're meeting that through activity in the Highlands and Islands at the [inaudible 00:41:32] outpost. If that helps to answer?

GR: It does, thank you.

SB: We've only engaged with a limited number of Innovation Centres, some of them because of their nature, Oil and Gas tend to be quite geographical. If we were dealing with a different set of Innovation Centres, for example if there's food and drink, I would expect a much wider geographic impact.

GR: I don't require a response from everyone [laughs].

TN: Scotland has a relatively large geographic spread but it's quite a small population. I think it was actually my colleague to the left who gave me the idea of the analogue of Yorkshire in fact, which has a very similar population to Scotland. So when we speak of pan-Scotland, it's not necessarily a very broad spread in a sense and the University of Dundee recently commissioned an economic impact study. Because we often make claims about the impact of our university on the region, and we actually wanted to quantify that.

And so one of the headline figures was that the University of Dundee is responsible for one in eight jobs in Tayside. Now that's only possible because

we're an international university, with a £250 million turnover, you know, and it's... so for research intensives, they absolutely fundamentally have to be international organisations and that's actually part of the fabric of why they exist and the impact they can have actually in Scotland on the economy of Scotland which is part of what we're really talking about here.

So there's a nonlinear relationship between the aims, I think, of the Innovation Centres and making Scotland as a country have a stronger economy. But also what the universities bring to that by the essence of them being international organisations. Bringing that back down to this sort of pan-Scotland question. I think it's important to remember the diversity point that we made at the beginning which I'm sure you've heard many, many times in your interviews, that you don't want to hobble the Innovation Centres to fit certain boundary conditions, it's simply inappropriate.

And so if they can be pan-Scotland that's probably quite good but then there should be a requirement saying that it might not be appropriate to the particular sector.

PH: I think that's the key, I think the key thing is that it should be open for all universities and businesses across Scotland and some assessment of whether they really are open and how open they are and how all that activation energy will be important, and settling from Robert Gordon's perspective, we've had no problems interacting or engaging with them, even though we are up in the North East. It's not a significant issue for us.

DW: We don't drive past many factories in Fife, the industry related Innovation Centres do look a little bit remote. We're amongst the top five employers for the whole of Fife so in terms of industry it is going to naturally be in a different part of Scotland and so there is a bit of distance to travel. And if I was a

company and I've got the choice of interacting five miles down the road with someone in Glasgow or eighty miles across the way in St Andrews, I'd go to Glasgow. Why bother, why put the effort in? Unless I've got some astonishing expertise and generally the expertise people are coming for is not astonishing.

We're not at the level where I think differentiation between individual academics across the sector means people will travel a hundred miles versus five miles. Maybe there will be extremes of that, the engineers will be different to the scientists but at this moment I would say the main core subjects that we've got in St Andrews, there is good activity across Scotland and so we're competing against colleagues in the West, that's fine, we're up to that but geography is not necessarily in our favour.

So I disagree with Paul on that. It's fine if you're an engineer and you do well because you've got local engineering needs. But if you're not an engineer it's a different story.

GR: I can't resist the temptation to open up a bit of noodle between Dundee and St Andrews [laugh].

SB: It's interesting because in another area with all these transfer partnerships we do engage with businesses which are significantly remote from Dundee, I mean two or three hours' travel by coach. And also quite a few of our, thinking of our innovation badges, we are dealing with businesses that are quite geographically remote.

DW: Well I think if someone wants to come and do a morning's worth of infrastructure use, they're going to a low end place rather than a distance place and that's where a lot of these interactions are going to start.

KN: I think that's beginning to point to another angle on the same question, the geography question which is buoyant but needy economic sectors are active and in Scotland. So take creative industries for example, so small to medium size enterprises, enterprises involving one person or three people which keep talent in the Western Isles, say. Creative industries is one example of pan-Scotland acumen.

So approaching the same issue, but from a slightly different direction, what Innovation Centres might be missing to actually serve the actuality of economic activity in Scotland? That's a very transparently rhetorical question because we don't know what the answer is. But creative industries are that.

GS: Yes, sorry, another aquaculture only example but the bulk of the academic interactions have been with Stirling. That's where most of the aquaculture element, academic activities been going on with smaller contributions from several institutions around the table, before they look daggers at me, and a very small one from mine as it happens. But the production is happening right around the North Western fringes of Scotland including in some of the most remote places and I think therein lies part of the challenge, how do you get that interaction going?

UHI actually has quite a nice model for interacting with that dispersed group of users and that is happening increasingly. But I think the challenge for us, and it might apply to some of the others as well is that to get the innovation in we need a much wider spread of academic interactions and sort of mixing it up a bit and getting some new people talking to each other that wouldn't otherwise talk to teach other has been part of our aim. Now we're not there yet but there's also wider partners including big retailers, multi-nationals as well, it's

not just production people. So there is quite a wide network of potential partners.

PH: You will all be aware of Interface, Siobhan Jordan produced a very interesting map of the distribution of Innovation sectors across Scotland. A very simple exercise, map, interactions of productive research innovation and just talking to one another for each of the Innovation Centres across the country and very quickly tells you what the spread was and where there were hot spots or cold spots.

And again, you have to take on board the distribution of the industries to some extent. Well my understanding of OGIC, which I guess you could argue is a North East Scotland industry, there is expertise in staff at Herriot-Watt and I'm sure OGIC has accessed that and in other institutions where it was appropriate for them to do it.

GR: So since you mention it, Paul, and if I was a business person and I was sort of scratching my head about how best to connect up with the university sector, how would you describe the respective roles of Interface and Innovation Centres?

PH: Interface is a very clear remit, and it's about that early and first interaction with an academic research base and about finding the expertise wherever that lies in Scotland. To some extent the Innovation Centres could do the same thing but the difference is, I believe, is that Innovation Centres trying to look at a bigger picture rather than solving a particular problem of a particular business, my understanding is that some of it at least is trying to look at that industry wide perspective, what are the big priorities?

Aquaculture is a very good example for priority topics, sea lives the top one, that's the number one priority to be addressed and it's looking at it with a different lens if you like, if you're explaining it to people.

GR: I mean that sounded convincing to me but is it convincing to the other six of you [laughs]?

GS: Yes, that's where some of the more exciting ideas are coming from, where there is a new focus on a problem from a discipline that wouldn't normally have tried to tackle it. I mean that isn't happening hugely often but when it does, like habitat and sea lives by zapping them with something clever.

PH: Again, we touched on the complex landscape for an innovation space but the one thing that has happened in recent years in an attempt to join things up and the view is Scottish Enterprise High and the Funding Council, Innovation Centres and Interface is that if you come through the door, you're directed to the right place that suits your need.

It doesn't matter whether you go in through one or the other. There has been a significant attempt to try and point people to the most appropriate levels and types of support that will map on to what they require. How effective that is, is a different question. But there certainly has been an attempt to try to secure that.

KG: I think that what you described sends quite a negative message to industries like food and drink where the issues around innovation and research are huge for the economy but they aren't being picked up through Innovation Centres?

PH: I'm going back to my past life here, we did secure bids in food and drink, we were supporting bids at the Funding Council, supporting food and drink through other activities at the time. There wasn't coherent at the time, or that the panel that did the review, that we could support that at the time. It's not to say that, and for the creative industries, for food and drink and other sectors, there isn't a real demand for something to support innovation in the sector. There certainly is, it just wasn't established at the time.

GR: I think we should begin to draw to a close after that very helpful contribution from all of you. But before we do can I just ask if there are any pressing points that you have not revealed so far and that you would like to tell us about before we close?

TN: I just think it's very earnest desire from universities to understand what the metrics are for success for Innovation Centres, transparencies around that, because of course funds are so tight and they're being increasingly tightened in the near future. I think understanding, there's feedback that indicates that there are three or four Innovation Centres that seems to be flying and there may be others that aren't.

And so to understand whether there is scope for opportunities for new Innovation Centres but perhaps there is a sort of zero sum game that actually, you know, it might be argued that it is too early for that but at the same time, we're all on such short timescales these days, there will be some other amazing referendum in the not too distant future. With funding being so uncertain and so tight in the universities, I think all these universities are really struggling at the moment. I just think we really need to understand that every penny is being spent as well as possible.

GS: I'd like to echo the, or interest in the possibility of new Innovation Centres emerging in whatever appropriate form they need to, not necessarily the same as the existing ones. And if that's a zero sum game, that's a prudent point to make. Second point, just to finish, we especially are interested in the ways in which Innovation Centres might use that phrase, cross sell amongst themselves. There is a communion of Innovation Centre leaders which is good but to keep a little bit of pressure on there to make sure that innovation within the Innovation Centres across all Innovation Centres.

SB: Looking at the spread of Innovation Centres at present, you could argue that there are significant areas of the Scottish economy which would benefit from input into innovation, access to universities who are struggling to access universities and centres. The example I would think of would be tourism, creative industries and food and drink.

All of which face very significant innovation hurdles and potentially breakthrough companies that could add a lot to the Scottish economy. They would possibly need a different model to Innovation Centres than the existing Innovation Centres because of predominantly SMEs. But I would have thought that they would dedicate a review if you have eight Innovation Centres, would some of them be different to the industry sectors involved?

GR: Shall we stop there?

KN: I would agree with that comment and I think also for those that are flying or maybe swimming, it is early days for some of them.

GR: I think that points very well made and we do recognise that this is a review that's taking place, as the Innovation Centres are just finding their feet and so the very purpose of the review is to explore whether they are indeed funding our feet, or fins if you prefer. Thank you.

END OF TRANSCRIPT

File Name

SCOT GOV – Roddy Macdonald – 27 July 2016

File Details

Audio Length: 00:33:23

Number of speakers: 5

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].

Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: Good morning and thank you for joining us. My name is Graeme Reid and I am chairing this review. The discussion is being recorded and we plan to publish the recordings of all these discussions along with the results of the review.

So on my right we have observers from Ekos Consultants, the Scottish Government and the Scottish Funding Council and on my left we have members of the Advisory Committee who will introduce themselves for the record when they contribute to the discussion but for the record would you like to introduce yourselves and say any words of introduction?

RM: Sure, yes, I am Roddy Macdonald, I am the Deputy Director for Innovation and Investment in Industry at the Scottish Government which is part of the Economic Development Directorate so I am responsible for policy around for innovation in terms of business and economic development in addition to a range of other things.

GR: Okay, thanks. Roddy, can you summarise for us just what the Scottish Government's ambitions are for the Scottish economy?

RM: Right yes, I guess our overall aim, and has been for the last few years, is to stable economic growth. So quite a balanced approach in terms of economic development, recognising that a wide range of factors are to be included in there in terms of also how it impacts on people in particular. So there are four Is which you may have heard of: Investment, so that is things like... it could be the Queensferry Crossing, it could be investment in skills, it could be Investment in our schools, very wide ranging.

International, obviously brought into more focus in terms of the Brexit decision but that is Scotland's place in the world, exports and so on; Inclusive growth, which again is a particularly, well we like to think is a particularly Scottish approach, notably something the First Minister is very keen to push, so that is the spreading the economic benefits around the economy.

So as well as private business, it can cover social enterprise, alternative business models, but also equally Scotland is a very diverse geographic area so we make sure we have got economic development not just in the major cities like Edinburgh but in the rural areas, out to housing estates, right across the economy. The fourth 'I' is obviously Innovation, where you are talking about in this review.

And these things do kind of all link up together, particularly, as you will know, a lot of companies that work in the innovation space also internationalise and are in the international space as well. So that is, broadly, our approach, stable economic growth, outcome and growth in the economy, productivity and economy are being achieved by these four Is which we think are the key drivers that would improve the Scottish economy.

GR: So taking these in the round, but particularly thinking about innovation, what are the big challenges in making that happen?

RM: I think in terms of... it is kind of local and global factors I guess, in terms of the challenges that we see. So global factors are just how the global economy works, particularly in terms of competition. So the fact that Scotland is not necessarily a low wage economy and so on will be a factor. So, for example, we were working very closely with the steel industry recently and clearly competition from China and so on was a particular factor there.

So the big global factors obviously impinge on Scotland and they can also be linked to the fact that large corporate may own factories within Scotland and that can be... global decision-making can impact on Scotland. And then obviously there are the local factors, that Scotland's business base is made up of a lot of small companies, and that can be a strength. Scotland is a very entrepreneurial place and we like to think of it as an innovative place

But equally small companies can sometimes lack capacity and often when you look at the business innovation statistics they do tend to come from the larger companies who maybe have the capacity, the big R&D departments and so on.

So I guess, and related to that, one of the things we have been keen to push over the last few years is just culture, and I think Scotland is an entrepreneurial place but there is certainly more to do there. And to make sure that anybody

that is running a very small company in an average part of Scotland can think, I can be innovative. And that is obviously one of the things that we are keen for the Innovation Centres to do.

So I guess the challenges I see are big global factors and then just some more specific local factors in Scotland, and obviously there's also a big rural challenge for Scotland as well, just distances and making sure people have access to broadband and Wi-Fi and all those kind of things as well.

GR: So you have kind of looked into the last thing I was going to ask which was, bearing in mind the international, local, rural and other issues, what is the role that you imagine Innovation Centres play in helping to overcome the challenges that you have just so helpfully described?

RM: I think obviously if the Innovation Centres are there, they are kind of a window into some of these opportunities and certainly the ones that I have seen have been very keen to look globally. And I suppose the fact that these are experts in their areas allows them to operate on a global stage and know what the trends are happening locally. But equally I would also want them to be out and about locally, making sure that they just are relevant not to just the big companies but to SMEs.

And particularly, we quite often talk about this, your average company, in an average industrial estate in an average town in Scotland, whatever that might be, what is the impact of all this innovation policy and in this case it was clear the Innovation Centres following that little company. So I think that is a big challenge for the Innovation Centres, to make sure that they are. And I think that is what they are doing, is to make sure they are tapping into all the global trends and opportunities but equally making it relevant for just Scotland's small business base and for small companies.

GR: Okay, thanks.

WF: Good morning. Willy Findlay, I am one of the GlobalScot team. In looking to the future a little bit, how would you like to see the Innovation Centres develop over the next five to ten years? We are wondering would you like to see them, for example, take on some of the functions of the other organisations to help simplify the landscape around innovation?

RM: Sure. I think in terms of that specific point I don't have a strong view. We are certainly interested in simplifying the landscape but we don't necessarily have a blueprint in front of us and I am not sure... I think Innovation Centres, I would like to see them focus on their core business rather than maybe take other things on. If things are particularly relevant and you think, well actually that could be looked at together, well great, let's look at it. And so your review and the wider review that we are doing around enterprise agencies may throw some of that up.

But I kind of think in terms of Innovation Centres over the next five years it is to build on what they have been doing. I think everyone realises that it is quite a big task, it is not something that you can achieve in a couple of years. So I think you need to give the Innovation Centres the room, the space to continue to develop that. But certainly, it is linked to my earlier points, these are the experts, these are gatherings of experts and knowledge in those defined areas and so use them globally and certainly if you can, make use of the GlobalScots and all the other international connections they can but equally bring that back and make it relevant to the companies.

So I guess in terms of going forward I would like to see them make use of all the international contacts and opportunities but to make sure that is all

relevant to the small company on the industrial estate of Kirkcaldy or Falkirk or Irvine, wherever. I think I would see that as the challenge over the next five years. But I think I would certainly recognise it is not something that happens overnight so I think they should be looking at other strategic plans and saying, well how can we achieve that over the next five years?

GR: You have mentioned the current review of the skills and enterprise that is going on, is there in your mind anything specific that the government can do within that, confined to that, to help you get your ambitions for the Innovation Centres achieved?

RM: I think partly the review is looking at, how does it look from the customer journey, what does the customer see from all of this? And I think that all of us that work in the innovation space think, well there are lots and lots of things happening. Lots of great initiatives. But again, what does that feel like from the customer? And that could be this business owner in this industrial estate in Scotland, a small town in Scotland, or equally it could be people working at the universities, academics that we want to engage.

And I guess some of them might say, well it all looks a bit complicated. And so I think in terms of this review and the review we are doing around enterprise agencies will be looking at, how does it feel for the customer? So it is not about us just moving things around for the sake of it but can we make things better for the customer. So certainly that is something that we... in terms of the wider review of the enterprise agencies and the innovation policy, that is something that we will be thinking about and feeding in, how can we make all these initiatives that we run a real [00:10:13] and just look a bit more coherent to the customer. And equally while that is happening, you're obviously thinking well, is there efficiencies or things that you can make better along the way?

GR: Can I just pick up on that because... So imagine I am a middle sized company on an industrial estate in Kirkcaldy, I will just follow your example. Am I expecting an Innovation Centre to come and knock on my door or am I expected to go and find the Innovation Centre? And once we have found one another, what should I expect to happen?

RM: Yes, that is interesting and I guess that the Innovation Centre... and I don't know, we can ask them this afternoon, whether they are actually going out knocking doors. I guess you would like to think there is a bit of both and obviously they are publicising the fact that they are there and getting it out in various ways. So companies will see that and other partners around the innovation ecosystem will see that.

But equally I would like to think that they are being proactive and saying, well actually there is so and so company in Kirkcaldy or Dundee that we could work with and certainly, I mean, I don't know this for sure but the people that I have seen working in Innovation Centres, I am pretty sure that they are out doing that. Just because they are in those sectors, they are experts in those particular sectors and are trying to make the connections across the industry.

So for example, you know the Construction Innovation Centres... construction is a very diverse industry, quite fragmented I guess, so I can't really expect the Construction Innovation Centre to be making some of those connections. So if they know that there is a really interesting company doing something innovative with a particular construction material in Kirkcaldy you would like to think they would start to make some of those connections.

GR: So I am just going to keep following your examples, so I am a construction company in Kirkcaldy. I agree construction is notoriously fragmented and

notoriously bad at sort of connecting one bit up with the other but if I make window frames... in that case I am not really a construction company at all, I am a window company. Are we saying that the Innovation Centre is going to have an expert on window frames?

RM: Well I don't know. I get the impression, talking to the Construction Innovation Centre people, their projects are pretty diverse across the range. So I think one of the things that surprised me was the range of projects they were taking forwards. One of them was in aggregates and at first glance you cannot get anything less innovative than aggregates, a pile of stones used in road construction. But nevertheless, there is an innovation angle into how we deal with aggregates.

And equally... so I think that certainly a Construction Innovation Centre, the range of projects is pretty impressive and goes all the way from aggregates to some of the very high tech stuff around energy efficiency and all this kind of stuff. So they may not have a window expert but I like to think that they would have somebody that could talk the same language that that company can talk.

And also I would like to say that the Innovation Centres are drawing in other advice as well. So the Innovation Centre is talking to this person making the high tech windows in Kirkcaldy and they are making sure that if they need help from Scottish Enterprise or Business Gateway or making those connections into a university department that has an expert in windows, that kind of thing.

So it is all about making the connections and from what I have seen I think the Innovation Centres do seem to be doing that, just because they have some good staff and they have good knowledge of their sectors.

GR: Okay thank you. Douglas.

DM: Good morning. I am Douglas Mundie, I'm a board member of the Funding Council and a member of the Research and Knowledge Exchange Committee. In the First Minister's Taking Scotland Forward speech in the Scottish parliament in late May, she said that innovation is crucial to improving productivity. That is why we are investing 120 million in new Innovation Centres to bring business and academics together to develop new ideas and products in some of the key growth areas of the future. We will continue and expand that approach.

How should we interpret such comments? Should we see these as an endorsement of the Innovation Centres programme or how would we interpret them?

RM: I think our Ministers have been – the First Minister, the Deputy First Minister, the Cabinet Secretaries – have been very, very supportive of innovation generally across the last three or four years and that has been a key part of our strategy. In terms of the comment on Innovation Centres, obviously your review will raise particular issues whether you think positive or negative or things that could be changed. But I think that our general ministers certainly have a positive view of the Innovation Centre programme at the moment.

Clearly if you tell us something different we will obviously take that very seriously and on board. But I think that the First Minister in that particular speech was looking to highlight what we see, some of the good practice around innovation in Scotland. We certainly see the Innovation Centres programme as a bit different and something that is making those connections between universities and business and so I would say it is a positive point. Our ministers are seeing Innovation Centres as a positive part of the landscape.

DM: I suppose I was just contrasting it with the evidence that the Scottish Government put in, where it says that we would suggest that clear exit strategies should be in place for each Innovation Centre. When we are starting to talk about how they're going to be sustainable.

RM: Yes, the sustainable thing is very important, everyone knows that we're going to be in a tighter funding situation going forward, how do we think about the sustainability of the centres over the next few years. So clearly that's going to be a big challenge for the government and the SFC and other agencies and for the centres themselves in terms of how do they get a balance of funding and what's the worst potential for income generation and so on as we move forward.

I think, I'm sure that will be a key part of your recommendations, just in terms of how sustainability is going to be addressed. That goes back to what I said at the start, this is not something you do in a couple of years and say, that's construction innovation sorted, clearly we're in a long term game here with innovation here generally.

GR: When the First Minister said that she would continue and expand the Innovation Centres approach, should we take it that this review is contributing to an expansion agenda that has already been determined or how else would you interpret that word, expand?

RM: It could be interpreted in a range of ways and it's probably best not doing it at this moment. But I think it's kind of, you know, how do we take it forward sustainability, how does this link to the government's general approach in innovation which is very strong and something we want to see continue.

GR: What is it that's being expanded, what is she committed to expanding? Is it the range of, the number of Innovation Centres or the funding for them or the others? There's a statement to the parliament that's going to be expanded, I'm just wondering what the dimensions of expansion are?

RM: I don't want to answer that here and now and give you the wrong answer, so that's probably something we need to give you a more definitive answer on. So maybe that's something we can come back on?

GR: It would be helpful if we're... I'm not wanting to pressure you too hard; I don't want to pressure you to an uncomfortable degree but a sort of courteous level of uncomfortableness [laughter]. So if you felt able to expand upon the meaning of that statement it would be really helpful. If you don't feel able to, in that case we'll understand.

RM: I guess I don't feel able to expand on it completely at this stage. But I think we'll reflect on that and give you a review as to what the First Minister, I am not that keen to put words into the First Minister's mouth.

GR: That is entirely understandable.

RM: A civil service answer really.

AH: Hi Roddy, I am Alex Herbert from the Higher Education Council for England. We've talked a bit about the review bit and the skills agencies and obviously

we're interested in thinking about how we might feed into that. So this review reports to the SSE Board on the 23rd September, does that timing allow for our findings to be absorbed into the review or can you suggest other ways we might be able to feed into that?

RM: Yes, I think the same with the team that is leading the enterprise reviews, this is one of the things that they're very keen that it feeds in and they're kind of watching proceedings on this. So a couple of things. I think it would be good to have some sort of pre-discussion with the enterprise review team rather than leaving it to the 23rd September and saying, you know, here's our report. So I think when you're in a position to have either the interim findings or to just have a general discussion with the review team, I think it would be very helpful. So I think that's probably the main thing at the moment.

The other thing is to consider whether you want to actually submit evidence into the enterprise review, so there's a call for evidence out at the moment which closes mid-August so you may decide that you may want us to put something in. Or if you just want to have a more kind of informal discussion with the enterprise review team, but they would be very open to that. They're very keen that all the discussion and the findings are fed into it so, definitely.

GR: One of the things that has been put to us is that Innovation Centres could add a lot of value in the skills agenda. It's been suggested to us that Innovation Centres, at some future point might work with Further Education as well as Higher Education. Would that all sit in the enterprise bit or... I'm just trying to get a structure of the Scottish governments review so that we're making the most valuable contributions we can?

RM: Yes, that would be a good, if you had a view on that, that would be a good thing because it's an enterprise and skills review so again, I think that would be a very useful thing to feed in. I think we've had some interesting discussions in this very room actually, around how we bring FE more into the innovation agenda. I think that's something we would support.

GR: Well I think, I mean this is not something that the committee has discussed, but I wouldn't be surprised if after today, when we have met the Innovation Centres, we're in a better position to think about how best we can contribute to your review. Can I say that we're very keen to contribute in the most helpful way possible and we recognise that in the real world, these reviews tend not to line up in a nice tidy way so if we have to give you some preliminary thoughts then that would be, I think, a thoroughly helpful thing for us and I hope for you as well?

RM: Absolutely, that would be very helpful.

WF: I'd like to take us back to the small builder in Kirkcaldy. Assuming he does have a problem with his windows, do you draw a line between sheer innovation and support on research and development? I get the feeling that sometimes universities are really focused on innovative, clear blue sky thinking and I wonder if through the Further Education groups, could be the group that we use to maybe help the small company get his R&D done that he can't afford to do himself, does that make any sense to you?

RM: Yes, absolutely and it's kind of one of the things that we're pushing through the wider innovation agenda, that it's innovation, and at the end of the day for

economic growth and jobs is what we're trying to push. But that's obviously recognising that pure research, very academic, absolutely contributes to the economy as well because that's when you're going to get the next thing, the next big thing or the next medical thing that's going to contribute to the economy.

But for that builder in Kirkcaldy who's come up with that interesting new product, I think it's how, it needs to be very much focused on how you can get that to market. And absolutely, universities can help with that in working together. That's why I think the FE College thing is interesting because I think, especially now that the FE sector has such good facilities – you just need to look at Forth Valley College for example, the facilities that the Forth Valley College now has because of major investment in the estate – it is impressive, and you'd like to think you can make those connections. And also, I guess, it's just on the doorstep of these, of the companies in Kirkcaldy. So I think that's a good point, I think there's a lot of potential around FE and innovation.

WF: Maybe some empathy between the two sides.

RM: Absolutely, yes.

GR: I can imagine that there may be some parts of the business community that are more practiced at working with the Further Education sector, perhaps because of their recruitment patterns or perhaps because of personal histories. So diversifying the Innovation Centres in that way might provide pathways to businesses that it would be difficult to reach the universities. And it doesn't for a moment diminish the value of the role of working with universities, it's not about that at all, it's an addition, not a replacement.

RM: I agree with that and I think the kind of pathways for the students that are developing, things like engineering, so companies, the larger companies are not necessarily taking just someone straight out of university with a Master's or whatever, they're looking at modern apprentices and so on. And I guess the system is flexible enough that someone can start as a modern apprentice and build up and at the end of a number of years may end up with a Master's in Engineering, a Chartered Engineer and all of that. But I just think the routes are more flexible now, with the big companies that are registered. And again, Forth Valley College is one of the ones that is kind of engaging in that. So yes, I think that is all positive.

WF: Do you think any of that is happening at the moment? I mean I get the feeling that the university based, very much innovative, but if somebody came along with the problem we've just discussed, would it happen? I guess that's my point, would it just fall by the wayside because it's not something that the university wanted to take on?

RM: I think it is happening and there's lots of good university business collaborations and things that Interface and makes those connections. And a lot of our universities are practically orientated. So I think it is happening but clearly there's a huge potential for more to happen and certainly, the university discussions that we're having tend to be around the bigger part, some of Scotland's biggest companies, Rolls Royce, [inaudible 0:26:35], and these kind of big companies. And certainly that, there's fantastic collaboration happening. But it's getting into the smaller companies.

GR: So you mentioned Interface, could you tell us how you see the role of Interface relative to the role of the Innovation Centres?

RM: It's obviously, I think that everybody needs to work together but Interface is obviously making those connections and I am sure Interface is obviously linked into Innovation Centres and vice versa so those links just need to be kind of seamless. And Interface, you know, where it's pushing a particular thing and again, just use construction as an example, if Interface is pushing for construction links and it knows there's particular expertise in whatever university around construction, you know, obviously it needs to bring in the Innovation Centres as part of that mix. I'm sure Interface will do that.

GR: I'm still the small company in Kirkcaldy and I'm still making windows, and I'm getting a call from Interface and I'm getting a call from the Construction Innovation Centre, and I think, I don't know which one of these calls I am meant to answer?

RM: I guess that's for Interface and the Innovation Centres to kind of work out, how they approach the engagement. And also, invariably, different people are going to call this company, but as long as these people know what the landscape is like. So, I mean another big Interface with these companies is Business Gateway. Business Gateway goes in there to this industrial estate and thinks wow, look at these windows, it's fantastic, what they're doing with these energy efficient windows. You like to think that Business Gateway would then say actually, do you know about the Construction Innovation Centre, I bet they would be really interested.

So I guess there's a kind of, there's obviously a job for everybody in this innovation eco system but the Innovation Centres themselves to makes sure

that things like Business Gateway and Scottish Enterprise are out there with these companies are fully aware of their activities. So that's maybe a question for the Innovation Centres this afternoon, that, you know, there's Business Gateway and Scottish Enterprise and they're out there with the companies.

GR: So hang on, I'm still making windows and I've now got Business Gateway, Scottish Enterprise, Interface, Innovation Centres? I mean the phone is ringing off the hook. This is not sounding like a very easy way for... at the one end you've got we've got the Scottish Government, on the other end we've got the window manufacturer and in between we've got four different pathways and the poor wee window manufacturer is meant to make sense of all of this?

RM: Yes, as I said, one of the things we are looking at is how does this feel like from the customer and that's one of the questions that the enterprise review will hopefully bring out and other work we're doing in innovation, does this just feel like too many people bombarding you and should there be a single portal or a single contact or something like that.

WF: I guess the worse scenario is if he doesn't get any phone call [laughter]. And if he doesn't, and I think that happens, how does he go to them? And I'm not sure he understands how to do that. If there's somebody out there saying, come to me, and that's what I think, what's our route in, any door should be the answer.

RM: So I guess the Innovation Centres, no wrong door kind of thing, is obviously important. But Innovation Centres need to ensure, you know, your average company thinks this is relevant and doesn't think it's a very high level thing

that's not for them. And I guess maybe with construction, maybe it's easier? But I guess some of the other Innovation Centres are very much high tech or a very technical end? I think maybe they've got a harder sell with small companies. I'd like to think that, you know, if this small company is dealing with sensors or whatever he'd like to think, they're well linked in with, you know, that Innovation Centre and so on. And certainly the Industrial Biotech Innovation Centre I know is reaching out to all manner of types of companies, large and small.

GR: Roddy, I hope we've not given you too hard a time but you'll appreciate that this is the only opportunity we have to speak with you so it's important for us to test our thinking and test your thinking as well. Is there any ground that we have not covered that you would like to tell us about?

RM: I think that's probably the main thing. I guess just to put the kind of, a lot of our kind of work around innovation was in the manner of Scotland Can Do, which is a kind of branding for innovation entrepreneurship. So I guess we'd just be wanting, going forward, to make sure the Innovation Centres are fully a part of that and it's just kind of, it shows, it helps with this kind of joining up of all of the things.

So even if we do end up with lots of different people working in innovation, at least if it's kind of under this kind of banner of Scotland Can Do, people can see well actually, they're all part of one thing really. And then just the point about the sustainability going forward, it's key obviously in how this is kind of taken financially forward, it's really important.

And then just the points about let's reach out to the small companies but equally let's use them, so we use our GlobalScots, which we know, I'm sure

there's huge potential to use GlobalScots more and making sure that they're in international space as well.

GR: Thank you very much for coming in to see us, that's been helpful and I hope we will be in touch to discuss how we can contribute to your review on your timetable.

RM: Yes, absolutely, we'll be in touch around that and obviously we'll drop you something around the interpretation of the First Minister's speech.

GR: We'll look forward to that.

RM: Great, thank you.

GR: Thank you very much.

END OF TRANSCRIPT

File Name IC CEO Session 1

File Details

Audio Length: 00:56:53

Number of speakers: 9

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers.

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].

Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: Hello, and thank you very much for joining us. My name's Graeme Reid, and I'm chairing this review. To my right, we have observers from Ekos Consultants, the Scottish Government, and the Scottish Funding Council, and to my left we have members of the Advisory Committee, who will introduce themselves as they join in the discussion. Today's proceedings are being recorded and we plan to publish today's recording, along with the recordings of all the other meetings we've had, at the end of the review. So, would you mind each introducing yourselves for the record? Carol, perhaps we could start with you?

CC: Okay, I'm Carol Clugston, I'm here representing the Stratified Medicine Scotland Innovation Centre. We're currently without a CEO just now, we're in the middle of recruitment. My role is Chief Operating Officer for the College of Medical Veterinary Sciences at the University of Glasgow, and I've been

involved in SMSIC from its conception, and I'm still very actively involved, and I'm a member of the board.

HJ: Good afternoon, everyone. My name is Heather Jones, I'm the Chief Executive of the Scottish Aquaculture Innovation Centre. I was Employee number one in September 2014.

SG: Stephen Good, Chief Exec of Construction Scotland Innovation Centre. Employee number one back in... a little later, October of 2014.

GR: Great. Thank you very much. Tim, do you want to start us?

TB: Thank you. Tim Bedford. I'm a member of the Scottish Funding Council's research and knowledge exchange committee. So I want to ask about the structure of the Innovation Centres. It said that they are autonomous, business-led; would you say how far that ambition has been realised so far?

HJ: Certainly, I think in terms of, within the confines of public accountability, the operation of the Innovation Centres is largely autonomous in that they report to business-led boards. I think we all have a similar experience of finding that industry contribution to the board and the strategy very helpful. So that breadth of vision, and that pool, and that impetus from industry acting quickly and responding to market pressures and market needs is a key feature of the Innovation Centre structure. Having said that, constitutionally we don't have an independent, autonomous legal entity, so we operate under the umbrella of the universities, but broadly I think things have started off quite well.

TB: Are there obstacles to affect progress?

SG: I think with any new initiative there's always obstacles, there's always challenges. I think what we've all experienced, and we have a great network, of course - the Innovation Centres - in terms of sharing our experiences, that

none of them tend to be insurmountable. I think that the key observation, certainly from our perspective in construction, was that the opportunity was presented through a recent centre programme was to place something, which was mis-relayed at the heart of the landscape. And the structure that sits behind that was appropriate at the time, in terms of how we started this off. I think, like all things, it will evolve and it will develop, and I think that's probably right in response to the various different Innovation Centres' experiences.

CC: I think for SMSIC, it's absolutely business-led. The autonomy, I suppose, is a bit more like a partnership, like a community, but absolutely business-led. With regard to the challenges, I think the two challenges that still are facing us: one was around agility, and that does come down a little bit to the structure. How can we with very minimal import as a global market – and that's something that I guess we will explore later – and the other challenge, of course, is the continued funding, and that we recognise that we're still at really quite an early stage in what is going to be a longer-term sustainable organisation.

HJ: I mean, I suppose I would perhaps come at the obstacle question around... I see them as hurdles you can generally jump over one way or another. I think it's fair to say at the outset, there are a set of attitude issues that certainly we've had to face, and perhaps others, around industry's perception and awareness of what HE can do for them and equally, HE's perception of why they would want to put priority into applied research, rather than the purer stuff that research councils fund. And I think that culture change, that conversation about how to get industries from Mars and HEs from Venus, how to get them to work well together is something that... We're all on a journey going along, and I think the Innovation Centres are catalytic in trying to improve that conversation.

I think there's another hurdle, which is less easy to leap, from my perspective, and that is about the speed of responsiveness of HEs as host organisations in allowing the Innovation Centres to do the things their boards want them to do as quickly and efficiently as possible.

GR: Do you want to expand on that? Give us an example, if that would help.

HJ: Yes, okay. Again, I think probably speaking across the Innovation Centres, because we as a group meet quarterly, we have all experienced quite a long lead time getting people employed within the organisations to do a job that needs to be done, so there's a time lag... based around the process, but nevertheless a torturous process in some cases. I think there's also a lead time and a lag time around things like procurement of capital equipment, and for delivering industry-led projects where the actual research is dependent on having infrastructure, and that infrastructure can take a very, very long time to come through, depending on public procurement methods.

Again, everybody understands that there are necessary thresholds, but I mean, I suggest that you'd ask the industry chairman this afternoon, because I think they have quite a clear view on that.

GR: That's very helpful, thank you. Willy?

WF: Hi, I'm Willy Findlay, I'm with the GlobalScot organisation. First of all, when the ICs were launched the perception was they'd be truly panning Scotland: I wonder how far you feel you've progressed in that goal and what your further plans are to increase that approach?

SG: From certainly our own experience, we have team members that are based in the Highlands and Islands region. We have really, I suppose from a construction perspective, read our business plan; it was a slightly more holistic proposition, I suppose, that we felt had to be put forward, because construction is – without being non-fair to the industry that I'm passionate about – is probably not the most forward, running in the direction of innovation with its arms open, shall we say. So, the platform in terms of what we were trying to build is quite broad, clearly with quite a narrow resource, so the pan-Scotland element of that is hugely important.

By placing expertise, in terms of our team, predominantly in and around Inverness, it allows us to access construction a lot of the more innovative companies that we're working with, who historically have been supported by Scottish enterprise from an account management point of view, rather than

HIE, perhaps. What we're able to do is offer some more specific support, I guess, around that, because those are some of the businesses that are arguably more innovative, if you want to grade the construction industry's approach to innovation. Some of those business that are based in those locations are our lying fruit, for want of a better description, so making sure that we've got representation to address their needs and respond quickly has been key for us. And we're working on projects now that stretch from Tyrie, to Dumfries, to Aberdeen and Inverness, and the Northern Islands as well in the not-too-distant future. So, I think in terms of spread of projects, there's an interesting mix there, and I think that the challenge is always one of resource and capacity in terms of how you manage that, but the ambition is certainly there.

The Innovation Centre Programme itself, speaking not for every Innovation Centre, but on behalf of the programme, I think has a huge desire and willingness, where appropriate, and Heather, from an aquaculture perspective, has really got some direct projects which are intrinsically spread, from that point of view, around the edges of Scotland, often. I think there's huge potential to build on that, but the act itself I think would be a decent start, I think would be my assessment on today.

HJ: I wanted to say, because working in all four corners of Scotland, but that's not strictly true, because we don't have anything in Dumfries and Galloway, but we've got major projects in Shetlands, we've got HE and FE activities in Orkney, and Inverness and Aberdeen, we've got some very major industry co-investment in research projects in [inaudible 00:09:49]. So, I would say that we're working extensively through rural and coastal Scotland, and with the Universities outwith the central belt as well as within the central belt.

CC: For SMSIC, we're absolutely, truly pan-Scottish. So the board has got all of the universities that have got medical schools across Scotland, because they are a medically-focused organisation. But one of our key partners and our key delivery people is NHS Scotland, so we're working with the NHS right across the whole of Scotland, and we've got representatives from the four largest health groups on the board. So all the projects that we have done to date, all our big exemplary projects are truly pan-Scottish, because we're involving

patients and samples and data that's right across Scotland and further afield as well, but truly pan-Scottish.

WF: Moving on a little bit, it's been put to the committee that the Innovation Centres should work with further education as well as higher education: any comments on how you see that working?

SG: Yes. From the very inception, I suppose, of the business plan, we were involved in pulling together, back in 2013... construction is one of those industries that cuts across a multitude of different needs, in terms of skills. So from an FE college point of view, apprenticeships, school-leavers as well: it's vital to create that pipeline of talent for the future for our industry. Which again –not being unfair – is not an industry that's often viewed as an industry of choice, sometimes. It can be an industry of last resort, and that, I think, has a huge opportunity for the construction industry through vehicles like the Innovation Centre to engage with colleges, with schools that are able sometimes, around a programme which is supported appropriately, and that's been our challenge.

We've had great engagement with colleges, we've had great engagement with particular initiatives, but it's a stretch because it's not what we're fundamentally there to do at the moment. But we recognise as an Innovation Centre that's trying to bridge some of the gaps that already exist, we can't ignore those opportunities, and I know there have been ongoing discussions with SFC around additional funding and support that might be able to be put in place to address some of that.

But with colleges Scotland, with individual colleges themselves, the potential is massive with them. Because part of the construction offer in the very near future within the next days is going to include a tangible hub centre where innovation activity can take place, that will be a resource that should be open and available to colleges to share, as well as the universities. And that again, knits together, with us playing that kind of role of the glue, I suppose, knits together the opportunities which the industry can then access, in a much broader sense, I perhaps, than the opportunity just now through our research centres.

HJ: So, I think to answer the question, we're always ready to work with FE where there's a demonstrable industry need, and I say that because there was an aquaculture course delivered by an FE institution that was, I guess, pulled by the funders because there wasn't industry uptake of that particular course. But we've got an example of where we've been working with college development network, the Scotland food and drink skills academy, LANTRA and HR professionals in our companies, to do a kind of gap analysis of what's missing, from their point of view. And then we've used that to take that to the market, and go out to colleges; ask them to design a custom solution to that specific need.

So the successful college is actually Fife College, but they're going to deliver the training in situ in coastal Scotland. So that's been a nice example of us being able to work with industry to articulate to the college sector what it is that industry feels they need, and then the college sector being able to come back and say, yes, we can deliver that and here's how we'll do it, and we'll do it in a way that suits the fact that you've got people working on farms, on sites all around the coast.

CC: I think for us, although we wouldn't want to rule it out for the future, I think it's a bit of a stretch for us just now just to see where further education would fit. I think, necessarily, we have had to be very, very focused in what we're doing, just because we're trying to position Scotland in a global marketplace that's moving very, very quickly. So we've had to be very, very focused, so we haven't found, I guess, the place to interact with further education just now, but we certainly wouldn't rule it out for the future.

WF: Saved the best one 'til last. I guess another ambition – I'll call it ambition – for the research centres was to be long-term, they should have the long-term sustainability. Under the current arrangements, do you think that is a realistic goal, and do you think there's anything the Government – we're doing this current review on enterprises and that – is there anything we should be doing to make that more realistic for you?

CC: So if I can start with this one: absolutely there needs to be long-term sustainability. I think with regard to SMSIC, and with some of the history we've gone through in the life sciences area - we've had kind of similar collaborations before - I think we recognise the challenges and the long-term vision that we really need to have, that this is something that's going to take longer than, probably the initial period of funding.

I think to say something of the credit we owe to SMC, is I think what we've put in place for the Innovation Centres has been truly transformational. We have got in our sector examples in the past of the TMRI and TMRC programmes, which didn't have long-term funding and effectively had to become themselves self-sustaining very, very quickly and they faltered in that. I think that the funding that the Funding Council have put in, have given us that space, they have given us the ability to do what is actually required to really think about what we want to do in order to make Scotland, as a whole, a competitor in what is a global market, rather than actually trying to make the innovation itself sustainable.

It's allowed us to have a much bigger vision and to really think strategically about where we're going. So getting that little bit of freedom just now without actually wondering how we're going to keep the lights on has been absolutely, has been tremendous. So I think, we want to be sustainable and we've got a business plan in place to do that, but we suspect it will be within the five to ten-year window, rather than within that first five years.

SG: I would echo Carol's points from the perspective that construction, again, is an industry that's unfortunately going back hundreds of years, because we're not a new initiative from that point of view, as an industry. We have a litter past of initiatives that have failed, and what always interested the industry team that are committed to this Innovation Centre, is that placing of the responsibility on the success of this, within this industry. Ultimately it's their Innovation Centre to do with as they see fit, in some respects. Obviously the appropriate Government's made to drive and demand the expectations that they have. Now that's a challenge sometimes: it means a lot of poking and prodding and stimulation, but the long-term sustainability, again, is articulated in a lot of the documents at the outset of the Innovation Centre Programme.

For us, it identified the need to hold firm, stay on course, from the perspective of commitment, I suppose, and whatever the cocktail of support that looks like, whether it's partly industry, partly public sector, partly university. And you know, there's a multitude of different models that can and should be explored as this evolves, but I would echo Carol's point, that the commitment SFC made to put this in place with a relatively long-term view, with fixed funding in place for the first five years; that is something the industry responded to quite positively to.

From our perspective, this Innovation Centre was borne out of the industrial leadership group demand, which really centres, I suppose, industry at the heart of it, and how industry supports that move forward has got to play a big role in, given the position now that we are doing that difficult balancing task of focusing on what the innovation support needs and what the businesses are engaging with, whilst having an eye on the other things we need to do to look at the sustainability. And we're moving slightly quicker than some others towards that, I suppose, in the context that we've got tangible things that industry's expected, and this is the vehicle that they've asked for it to be delivered through.

So that brings with it an expectation around long-term sustainability that, nobody should be thinking about making the investment that that has made on structure, infrastructure, and to then take that away at any time soon. But equally, industry has to understand that it's got a strong role to play in that way in delivering that sustainability, and we're working hard, I suppose, to build up those contractual relationships.

So I would echo the point that it is a... we're all at a point where the evolution now is with an eye very firmly on, as I say, model, move, change and react to the demands that it now has as it moves to a different place, in terms of expectation and resource needs and capital, from that point of view.

GR: Are you worried that you could, in future, find that the CU management time, are preoccupied with generating income, rather than preoccupied with delivering the original vision?

SG: I'll answer that first. I mean, from our point of view, we've made a very clear division of responsibilities within our team. So our business relationship team and the support networks around that are 100% focused on business development processes with the individual companies. And it is the senior team, myself and two leadership team colleagues, that are focusing on the commercial aspects, I suppose, of the Innovation Centre. And that's to allow clarity and focus to those whose clear remit is development of the innovation support with the universities and the businesses, and allow us to deal with the other things, I suppose. And that comes with its challenges in terms of time management, prioritisation, resourcing, and whatnot, but it's important for us to make sure at the moment that there is a clear expectation on our team internally that they know who's dealing with the various different aspects.

As it evolves, and we have some significantly larger opportunities coming in the next couple of months that we have been able to secure already, and those opportunities to date have generated probably about, not far off, three quarters of a million pounds' worth of income to the Innovation Centre from various different sources. Some industry, some other public sector. What comes in the future dwarves that, and that's where there will be a real challenge in terms of what we prioritise, but remembering that ultimately that is to put in place, to deliver for industry, the recent support of their needs, which is broad.

GR: And, just for clarity, that three quarters of a million pounds: does that go into your bank account, or does it go into the university?

SG: Well, it's the university's bank account, but it's our ring fence cost centre.

GR: You have full autonomy over the use of that?

SG: Yes. It comes in and goes out pretty quick in terms of... [laughter] but for the short period it will be there, yes, it is. And that's where, again, if this is the appropriate point, from our experience, whilst – we touched on at the beginning – there's challenges in all the constructural logistics of how the Innovation Centres are conceived and set up, we have a huge amount of

autonomy within the university, but to deal with our activities as we see fit with our board's discretion, which members of the university sit on. But we are left to get on with what industry expects us to do, and close the financial management extents, which is to be commended.

HJ: So, I guess on sustainability, SAIC started out with a premise that we couldn't reasonably charge people for services of value to them until we'd delivered some, and so our model doesn't envisage a subscription or a charging mechanism at this point. We haven't been in existence for two years yet, but having said that, what we've achieved in the first two years in terms of industry co-investment with a ratio of approximately three pounds to every one of SAIC money, demonstrated very clearly that the industry is technologically and innovation hungry, and sees that SAIC is a vehicle that is allowing it to access expertise that it doesn't have itself through the university base.

So the longer-term sustainability plan, again, our original business plan never envisaged that we'd be fully industry-funded, and our industry, like every other, goes through boom and bust cycles, lean years and fat years. So it's probably too early for us to say what our plan would be for finding other sources of income, although we do plan in our operational year to look into that.

And on the question of would management time be diverted away from delivering the core things that we were set up to do: potentially, yes, it could be. I think that's why the focus, at the early stage of the Innovation Centres, has to be delivering things we said we would do at the outset and judge us on that. And if we do that, give us more money, perhaps at a lower level, to keep doing the same thing better.

But at that point, if we're five years in and industry has started to, in fact, one of the companies has, made a commercial investment decision of £6 million in [inaudible 00:24:45] based on a research pilot that they've done with the University of Stirling's facilities there, they're going to build on the other side of the road and have their own thing, because it's working already in less than two years. That's the kind of thing that I think demonstrates the confidence of the industry to say, yes, you are doing things that are giving us confidence to invest and to create jobs and to grow what we are doing.

The industry of aquaculture is actually very new, it's only been around for 40, 50 years, but there's currently a group that's come – and we don't have an industry leadership group and we don't have a sectorised seam within the enterprise body – but currently there's a group called the 'Aquaculture Vision 2030 Group' that has come together by managing directors of companies right across the supply chain, most of them based in Inverness and the Highlands, who are saying, look, we're really excited to see what SAIC is doing, we're really excited at the prospect of Aquaculture driving Scotland's economic future, we'd like to get a piece of that. Most of them are SMEs so it's very difficult for them to co-invest with us on the scale that the big companies have, so they're very interested in seeing what the future sustainability of SAIC would be to help them in the next five years.

CC: I think if I could just add, for SMSIC, we have definitely over the last couple of years, we have started to evolve, and I guess, really think about what our offering is and what SMSIC is going to do to be sustainable. And we've given a lot of thought to that, and what we're evolving into is the concept of developing SMS into a focal point, into what we see as an ecosystem for precision medicine across Scotland. So that would include not only the partners of SMS, but it would be open to all the different community partners across the whole of Scotland; anybody who's got anything to offer, SMS would effectively pull these together into offerings that we can put out to the rest of the world.

So for example, the types of things that we're doing just now, is that if a large pharmaceutical company from overseas wants to come and do a very, very complex precision medical trial in Scotland worth many, many millions of pounds, that what SMS is able to do is to be able to, to basically sell Scotland, to sell all the capabilities of Scotland, and we have a funding model which would allow all the different industry partners – be it the industry partners, be it the universities, be it the NHS – to be able to share in that. Now through some of this very, very advanced technology, SMS will be able to apply services itself because it's got the ability to do genomics sequencing, data analytics... but it will also be able to develop new diagnostics through some of these things that are being developed, and so therefore it will be able to revenue share in the new technologies, new diagnostics.

So we're developing a funding model which is still evolving, where SMS will be able to become sustainable without it really having to go on market itself, because effectively what we're doing is we're marketing Scotland, and we're marketing all the good limits of Scotland. And we really have got approval support across the whole of Scotland to do that.

GR: Thank you. Alex?

AS: Hi, I'm Alex Saxon, and I'm from Research Councils UK. So you've touched on some of the tensions between HEIs and businesses already, but thinking more broadly, I'll imagine that you'll have encountered other differences between ambitions of universities and businesses along the way, and it would be good if you could describe some of the ways you've resolved those difficulties, and maybe pointing to examples of how universities have changed the way they work as a result of your influence as a business-led Innovation Centre?

SG: You're right. There's differences in terms of ambition. We have set up structures around project approval processes that we utilise, which are very much focused on economic impact, value for money, transformational change, yes, technical innovation. And in those environments, it's obvious where different individuals have different focuses and interests, and specialisms clearly in terms of their expertise. And I suppose in the broader sense, the difficulties, I guess, come from the culture, I suppose. The culture is, I think open to my response, in this respect is a culture change experiment, or research project in itself, and an Innovation Centre of our size and scale, even within a relatively new university like Edinburgh Napier, is working against a construct.

It's been in existence, which has methods and procedures and protocols, and approaches to things that have been blowing over, certainly longer than we've been on the scene, and very much so, we're finding that with different departments, and even different individuals within our host institution, within the other partner universities that we work with, it comes down to how well we build good relationships with the good people who understand what our mission is. And I think it's fair to say that probably not everybody does

understand, or does fully perhaps, buy into the Innovation Centre change agenda mission, from that point of view. So that can create challenges, and that can create, in some respects, really good opportunities to explore how it could be done differently, I suppose. And that's something that we're witnessing within Edinburgh Napier, where there is a huge amount of change within the university going on at a senior level, a support operational level and whatnot, and that's with the ambition of being much more nimble, much more dynamic, much more focused on the needs ultimately – whether it's staff or whether it's teachers, whether it's students or whether it's industry that's being served – it's very much one of those kind of areas.

So yes, there are a lot of opportunities, and yes, challenges, but I think we're overcoming a lot of them. As Heather touched on, they're hurdles that are not unsurmountable in most cases.

CC: If I'd be permitted to wear both hats at the moment, because I also represent a university, and if I'd be allowed to just say an example from that perspective: we became a core partner in SMSIC right from the beginning, and that was because of the academic leadership. A real strategic priority was precision medicine for us, so we were really committed to begin with, and the university has provided all of the back office support, all of that etc., all as in kind support, so there's been no charge at all to the Innovation Centre for any of that. So we've developed a really close, strong partnership as such that we feel we're all part of the same thing.

But the discussion around the culture change, just to give you an example of that: we have over the last three years, we have been working with the core industry partners, particularly the industry partners in SMS, so closely that one of the industry partners has now actually moved to set up location sitting alongside SMSIC within university space that we've got. And three years ago the university entered, and I say this with your MRCUK hat on, we entered the BBSRC's Excellence with Impact competition, and having worked with industry over the last three years, we just this year were awarded the top university in the competition with an overall win, we were top university, and that was because they saw that the culture change over the last three years of the university working with industry was recognised, and that's what we were told that we had got it for. And SMS were a key part of that.

The chair, who is also one of the industry partners as well, has been so supportive. The companies have been incredibly supportive in terms of sponsoring a lot of the work that we've been doing; working with other universities, working within the city. It's become such a real embedded culture change that everybody's now thinking in terms of what the metrics are for industry, what it's like for industry. I think we have got a completely different way of thinking.

I know that we've now got a big emphasis on impact through [REF 00:33:52] and things like that as well, so I know that that is probably a big part of the environment and the changes. But it's no longer, I think, just about us being a university and them being industry, it's about how we can do knowledge exchange, how we can get impact, how we can really make a difference to the economy, and I think it has been truly transformational. And I know that's just one university, but it definitely has.

HJ: And from an aquaculture perspective, I guess my observation to start with is: universities follow the money, but then companies follow the profits. So in terms of that, the culture change and what's different; a number of our company investors are eager to get sign-off from a multinational headquarters for our investment, and they're only prepared to do that where they can see commercial benefits. They're very, very hard-nosed about it, and that's sometimes the reason. In fact, we've even got a project just now where it was conceived as a three-year project, it's now just going to be, with a break point, about the first six months. We're now just going to fund the first six months, because the company's saying, we're not ready to invest for the full thing until we've seen the success. I think that's a sort of example of culture change a little bit, where academics were very excited about this big three-year project, but are now realising that they need to go at the pace that, they need to demonstrate the value of what they're doing in the first phase, and the money will follow from the companies thereafter.

I guess another kind of culture change thing that we're seeing happen, and it's very early days, but we've only been going a short time, we've actually only got one project that's done a full year of review. But the process of negotiating between companies and universities is around, what's the IP? What's the collaboration agreement going to say? How long is it going to run? What are the no-go break points? It's quite an interesting one, and I think you'll learn

about company people this afternoon about how that differs in terms of the level of legality that small companies could certainly put in to negotiating all of that.

So I think that kind of culture of trying to meet your customer's need, if your customer's your company as your contracting partner, maybe a little bit unfamiliar or uncomfortable for some academics or for some institutions, and I'm not trying to say that to be controversial, it's just kind of feedback that we've had through our experience. But I think the more we do it, certainly as we've seen, there's some very good examples on the selfish side, where initially there were some young academics who really wanted to do stuff that got publications and not the kind of things that were applied... they were encouraged to talk to our industry who was wanting to invest.

And it was a strategic investment that the Scottish government wanted to see happen, so it would have been inconceivable not to have the best researchers in Scotland being involved in it. Once that conversation happened more frequently and more regularly, the understanding that the academic, or the business wanted out of the project, and the business of what academics could do to help, really started to shift to the extent that we now have a [putative 00:37:16] MSc student, a chap that was an intern at SAIC last summer through the SDS Scot grad scheme. We reemployed him this summer to work in the company to do an applied research project that was on the roster for our MSc scholars but wasn't taking off, and the company was saying, actually we so want to keep working on applied research, can you get us a young person to come and do a four-month applied project for us?

GR: I'm watching this clock move round, and at an alarming speed. Partly because this is so interesting, but Alex, if it's all right with you I'm going to move on, unless there's anything really pressing.

AS: No, no.

GR: We're just going to have to accelerate a little bit; you just need to be a bit less interesting.

[Laughter]

GR: Douglas.

DM: I'm Douglas Mundie, I'm a member of the Scottish Funding Council, and a member of the Research and Knowledge Exchange Committee. I'm going to start by asking what the relationship is between the Innovation Centre's programme and the research and commercialisation offices and universities?

HJ: I would say we have relationships with the research and knowledge exchange departments as the way in to finding who the best academics are within their institutions, and typically what we've done is we've offered to hold either drop-in clinics or presentations and workshops with such a selection of academics as we identify as being of interest to us. And that has then led to translation directly into projects that came about, particularly with academics that previously had no knowledge, awareness or connection with Aquaculture. We've had to fund one with the University of West of Scotland, so that kind of route in has worked really well for us.

CC: So for SMSIC, we deal largely with four universities, but we've also got partners on the health board as well, and what we've done is we've set up a working group for members of the research and commercialisation offices, and sometimes the legal people within the universities, and within the health board. And that working group meets virtually, but it also meets physically from time to time as well. So that's allowed us to develop relationships amongst all these people.

One of the reasons that's been important is this whole agility issue that we've got, is that because we're set up now as a collaboration, what that effectively is doing is putting unlimited liability on all of the partners just now, so any contracts that we're signing, anything we're trying to do, we basically put it round the working group and we get the working group basically to do sign-off, and we try and get them to do that very quickly for the institutions. So developing these relationships so these people feel very, very engaged and fully understand what the Innovation Centre is doing has been very important.

It's been challenging, but it's working, I guess as well as it could under the constraints of the organisational structure that we have.

SG: My response, I think – I'll keep it really brief – we've got 13 university partners who we have some great relationships with. Some of the academic teams that we have work very specifically on projects, and we have other great relationships with some of the commercialisation teams in the universities because we have less knowledge, perhaps, of where the expertise might lie. In those instances, the conversations often start with the commercialisation research teams in terms of how we access different parts, and interface can be part of that conversation as well, because we're starting to evolve now more into projects where even industry, perhaps, didn't realise it was an innovation area it needed support around.

So our model typically can look at products and processes and that's where I think we've got a really good map to understanding the university landscape with all the partners. But as we move into broader innovation culture and business innovation and all these different areas and start to bring in business schools, all these different teams within parts of the universities; that's an area where commercialisation teams are a good route.

We have some examples with universities where, and I would think that this is something mirrored across the lot, is that there still is some tension sometimes within the academic teams within the universities and the commercialisation teams in the universities, and when we remand in the middle of that, yes, it can be interesting. But that's something again in the spirit of jumping over hurdles; we just approach on an, either as need be, as Carol's touched on, sometimes strategically across the university and pull all the different bits together, and other times it's about going to where the expertise we know is, and finding out how best to get knowledge.

DM: So let me pick up on interface, you touched on interface there in your answer. How does interface fit in? Within the teams?

SG: I think again, we all have different experiences, I suppose because of our different industries, and our expertise with interface sits within it as well. We

have a good operational relationship with the team's interface, in terms of buyer referrals, interface settling our project advisory group, and having oversight over the projects that are coming through, and some that perhaps don't immediately meet our needs can be diverted in other areas.

I guess that the opportunity for me, in terms of interface, is that role within the Innovation Centres, is looking at how and appreciating that interface has experience, and a sense within food and drink, but the Innovation Centres are narrow and deep. There's a huge advantage in having something that's broader and perhaps not necessarily tasked as we are with outputs, but more around the engagement side of things, and I think there could be some real potential there in terms of how that could evolve and develop in the future. But yes, we have a model which doesn't fund the things that interface funds, and vice versa, so the buyer referral process could always be better. It could always be more regular in terms of engagement, but I think it's a decent starting point and I think we have found a way to not duplicate projects.

HJ: We've got an MOU, as most of the ICs do, about Interface, about operating protocols. The SAIC model is to fund up a small number of high value, high impact projects, which generally we're looking at anything above 50K, up to 4 million. So we've agreed that anything under 50k we refer to interface, and that seems to work well.

CC: And it's very limited for us. We've got very limited interactions.

DM: Okay. How does Innovate UK fit in?

CC: If I take that one first: we've got a good relationship with Innovate UK. They have put some funding into some of our projects, but I guess more importantly, they're funding a new catapult in precision medicine, and we've been working with that catapult now for probably a couple of years. And they're setting up a Scottish Centre of Excellence with the precision medicine catapult in Glasgow, adjacent to SMSIC, because they want to work with SMSIC. And just recently, because we have got this gap with the CEO role just now, we've actually suggested that they put some funding into the CEO role

and we badge it together as a Centre of Excellence lead for the catapult across the UK. So the board is considering that, but it shows how close the relationship is.

HJ: Some of our projects are a kind of follow on from the initial work that Interface UK did. We've modelled quite a lot of our business processes on, sorry Innovate UK.

I think the scope for more collaboration with Innovate UK on the Aquaculture front; Aquaculture is salmon's number one food export for Britain, not just for Scotland, and there are many opportunities on the kind of agri-IP front, on life sciences for innovations that go beyond pure fish biology. There's also a lot of scope for innovation around technology and engineering, so I think there's lots of opportunity for better integration between what's happening as a new emerging sector in Scotland, with the UK.

SG: From our point of view, we have a great working relationship, at a strategic level and operationally around the built environment team, who've got particularly... we've hosted, jointly hosted, small hackathons that have been very quick, nimble things to set up and deliver through to projects we're working on just now that are seven, eight million pound projects with a lot of house builder organisations, and that is an interesting dynamic for us, insomuch that the construction industry in Scotland indigenously isn't blessed with a lot of huge construction organisations that are headquartered here. But in some sectors across the UK there's organisations that want to do stuff that has a huge impact on Scotland, so if we can lever joint support across us and interface, and other Scottish enterprise as a whole, that allows us to scale our involvement of things dramatically.

DM: So, finally from me: how do Scottish Enterprise and Highlands and Islands Enterprise fit in with you, work with you, and if you have involvement with them, can I add Scottish International into that as well?

HJ: So, SAIC has very, very close links with HIE. We have a HIE second team based in our organisation who's working on authorised objectives and our objectives,

and HIE have co-funded some major infrastructure investment projects that have enabled research to happen on the shellfish factory. So I'd say those relationships are really, really strong.

The relationship with SE is emerging, and I think reflects the lack of a sector strategy in Aquaculture which falls between the cracks a little bit, of life sciences and food and drink, and I know that SE have been looking at that.

And on the links with SDI: we've had some limited... well we've got good relationships with people, they haven't co-funded anything yet, but there are lots of international export opportunities where we could probably do more with them.

CC: For SMS, limited interaction with that, I think, is just the nature of what we're doing. With Scottish Enterprise, a very positive relationship in that they said on their board, as an observer, they're very supportive in terms of that we have visits from companies, potential inward investment, they'll come along and support that. In terms of us actually getting any money from them and them supporting us financially, that is very limited. So it's slightly frustrating in that they have not necessarily found a vehicle to be able to support SMS, and again, that's probably in the nature of the types of projects that we've been doing. They've never quite worked out how they would be able to financially support us, but they're supportive by actually just coming along. But it's maybe slightly frustrating that they've not been able to just support us financially.

SDI is probably quite similar; they've come along to a lot of events, they've shown a lot of support when we've had international companies come to visit, they've been there visibly. But again, I wouldn't say they've actually delivered anything.

SG: Our experience has been really positive with both, Scottish Enterprise are the principal funder at three quarters of a million pounds, probably about six hundred thousand pounds of that funding is to help us deliver a variety of different... whether it's programmes specifically to industry, stuff through the Industry Leadership Group, or stuff to do with our new centre, so that relationship at a strategic level, at a funding level, and at an operational level, given that in some respects they view us as part of an extension to the sector

team in terms of expertise, creates opportunities with the account managers and innovation managers.

SDI have been intrinsic in supporting two initiatives: we did with industry last year, one to North America around with [Saltire 00:50:10] Foundation in Boston, and another thing we did, we took about 30 companies which ultimately has led to that project I referenced earlier, the 7 million pounds with the house builders, that took me to Japan, which SDI organised and coordinated. Everything to do with that. HIE, one of our team is based in HIE's office based in the University of West of Scotland's campus.

GR: Thank you. Alex?

AH: Hi there, I'm Alex Herbert from the Education Funding Council in England. Some very simple questions to finish off: with the benefit of hindsight, how would you have improved the way the Innovation Centres were set up if you were doing it all over again?

SG: It's interesting, when I saw the question, I thought about answering with the benefit of hindsight, given that we had suggested it as part of it. But at the beginning, pooling together and centralising some of the backup services, I guess, would have been an advantage that may have simplified some things then.

I think a lot of us have moved in directions now, were we to bring that back, it would be quite a challenge now, perhaps. But the autonomy, I suppose, it wouldn't be surprising for us industry people to feel that greater autonomy, greater independence, greater ability to go and do the things that, you know, industry or the things we want to do would not be amiss.

I think SFC have supported that very well, and I think with the benefit of hindsight, I think it's about looking at the structure now, the backhouse services, how they're best supported and how that evolves moving forward, which will lead, inevitably, to the question around the legal structures and the entities that the Innovation Centres either collectively or perhaps independently come to.

I think we've all got a multitude of different thoughts and suggestions, ideas. I think there's a piece to be done perhaps, in exploring all of that collectively. But yes, I think with the benefit of hindsight there are certainly things that any new initiative would have benefitted from by doing things slightly differently, but I think we're at a point now where the forward trajectory is the focus, not looking backwards, and building on experiences.

We have a great example, I suppose, with the Innovation Centres when we do meet, that we try always to identify, across all the things we're doing, even where areas of best practice are, and I think what could be useful, is an additional thing that allows us then to take those best practice things where experience matters.

HJ: I think I would like to commend SFC for having the vision in the first place, and anything that's happened since then, they were doing it for the first time as we were. Certainly the second tranche of the five Innovation Centres that started in 2014 had the benefit of learning, collective learning, the first three Innovation Centres, the first three universities, and the SFC's experience itself. I suppose it might have been helpful to have had a sort of stronger direction to the university hosts about getting things, having a fast start-up, that was just such a frustration for industry that thing's took so long.

But we're up and running now. I think it's been very, very good that there's been a recognition by the funding council not to impose standard, templates, or standard solutions to achieve outcomes for different industry sectors, and so that freedom has allowed each Innovation Centre to evolve as it's needed to in response to commercial pressures.

CC: I think, for us, it's a challenge, because you could say with hindsight, well we should have done this, or we should have been given more guidance in this... but then we could end up feeling well, we were constrained and might have done it differently.

I think we've had the freedom, we've done something very different, I think we have evolved, and I think even within the individual Innovation Centres, certainly SMS has evolved over the last few years. So I'm not entirely sure we

would have done anything different with hindsight, I think we've valued having that space, and we've valued having that flexibility.

I think going forward, we do need to explore what the organisations' structure are, we do need to explore what things are going to look like when we move forward, and I think having SFC involved in these conversations, and sharing across the different Innovation Centres, what these different models might be. I think that we definitely need to do. But I don't think I would have done anything differently.

It's been an incredibly valuable learning experience, and I think we've achieved a huge amount, actually with a little bit of money. Maybe that's the one thing in hindsight; I think we could have had some more money.

[Laughter]

GR: Right, before we close, is there anything that we have not raised this morning, this afternoon, that you would like to draw to our attention in the 90 seconds you have got left?

CC: Can I just say, I think it's really important that the panel recognises the differences between the Innovation Centres. I think they are all different, I think they're going to have different models, different ways of moving forward, and I think they've probably all at slightly different stages, but I think that also recognising that they still all are at a very early stage and definitely don't give up on them too early. Because I think it's so, so valuable.

HJ: Just finally, there have been many, as Stephen said, many attempts at doing this kind of thing before, but not all of them have had the time to improve themselves. I think what's distinct about the Scottish Innovation Centre model, is that industry leadership on the boards, and if there were to be changes that diluted the industry influence over our direction of travel, you would lose your industry board members, and if you lose your industry board members, you've lost what you've created. So that's my final thought.

SG: Yes, I don't have anything to add to that. I think that sums it up really.

GR: Good. Well, may I thank the three of you for giving us such a rich and enjoyable hour. I'm sure I can speak for everyone when I say how much we've appreciated your time. So thank you very much indeed.

END OF TRANSCRIPT

File Name

IC CEO Session 2 – 27 July 2016

File Details

Audio Length: 00:55:27

Number of speakers: 13

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers.

Notes:

*Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].
Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.*

START OF TRANSCRIPT

GR: I'm Graeme Reid and I'm chairing this review. To my right we have observers from Ekos Consultants and the Scottish Funding Council, and to my left are members of the Advisory Committee who will introduce themselves as they contribute to the discussion.

This afternoon's proceedings are all being recorded and we plan to publish the recording, along with recordings of all the other discussions, at the end of the review. So just be aware of that as you make your contributions. Now, we're going to stick to time quite precisely, so there's a lot to get through and I wouldn't want each of you to feel obliged to contribute to every question.

I'll let you use your own judgement on that. But don't feel that everybody has to comment every time. With that said, I'm going to hand over to Tim. Oh sorry, would each of you like to introduce yourselves please for the record?

- JE: I'm Justene Ewing, I'm Chief Executive of the Digital Health and Care Institute.
- RK: I'm Roger Kilburn, I'm the Chief Executive of the Industrial Biotechnology Innovation Centre.
- GD: I'm Gillian Docherty, I'm the Chief Executive of the Data Lab.
- IR: I'm Ian Reid and I lead CENSIS.
- TB: Good afternoon. I'm Tim Bedford, I'm here as a member of the Scottish Funding Council's Research and Knowledge Exchange Committee. I wanted to ask your feelings around the Innovation Centres. The rhetoric has always been that they're autonomous and business-led. How far towards that ambition have you progressed to so far? And maybe you could also comment if there are any major obstacles to progress.
- IR: I think we're in a happy position that it's the rhetoric and not the reality. In that to varying degrees all the Innovation Centres are strongly industry led, whether it's in terms of board representation or whether it's to do with the fact that they're focused on technology pull and all the projects are led by industry and industry challenges, industry commands.
- The autonomy question is a little bit more blurred but I think to varying degrees all our hub universities give us the flexibility we need to behave largely in an autonomous way, however there are clearly limits to that, given the nature of the Innovation Centres, vis-à-vis, being legal entities, for example.
- GD: I think probably the other thing to add from a personal perspective is that we benefit greatly from being a second IC for a host university and indeed sometime after the original IC which was DHI, and I think we benefited from probably some of the, shall we say, the work-throughs and the potential challenges with autonomy that had already taken place. So I think that

certainly for our case made it easier because the university had a greater understanding of the programme and the challenges involved.

WF: Good afternoon, I'm Willy Findlay, I'm representing the GlobalScot Community. The ICs were launched as a pan-Scotland asset and we'd like to know about your quest to meet this objective and have you any plans to further the progress?

RK: The two main groups that we interact with are the university, the HEIs and the industrial companies. I think you'll find that all of the Innovation Centres think they've done a good job of being inclusive. They've all got statistics around how many interested companies they've got. Industrial Biotechnology runs a membership scheme, a paid-for membership scheme.

We have 62 companies that pay to be a member of the Innovation Centre, quite a number of which are outside of Scotland. So we're trying to embrace a much broader community than just Scottish companies, but obviously they need to be able to articulate economic benefits in Scotland in order to get any funding from us. And with regards to HEIs, we've all engaged with the HEIs that are relevant to our Innovation Centres.

JE: I think I would just add to that, just to give you a bit of an example from a DHI perspective, we're engaged with 15 universities and 12 out of the 14 health boards, nearly all of the special health boards, more than 20 charities, 13 local authorities, more than 260 SMEs. So the reach really is quite broad. And I think a DHI is just an example of the way that all of the Innovation Centres are working in that space.

And just building on Roger's point, I'd also be keen to note that even though we are looking at pan-Scotland, there is a great degree of interest in what we're doing here in Scotland. And I think we've all had individual approaches from other places in the world, investigating how we've done so much with so little.

And I think when people get a really good sense of that understanding, they're quite in awe of what we've managed to achieve with a relatively small amount. I think that's what contributes to international attractiveness. And that really

starts to build on the outside for what we can offer from a Scotland perspective and build quite a degree of benefit for the companies that are involved.

WF: So have you gone as far as you're going to go?

JE: Absolutely not.

WF: So what's the next bit then?

JE: Well I think generally the Innovation Centres are constantly developing. And I think what we need to consider is that some of those that are industry specific. There are two that cross-cut. And the ones that are industry specific will have aims to either improve the economy or in a DHI's case, it's about establishing a new one.

So from a DHI perspective, there's a great opportunity for Scotland to be the European gateway for the US, Asia and the Emirates actually, putting Brexit to the side maybe for a second. So I think developing that internationally ambitious community in Scotland is going to be really key, so the international collaboration opportunities are coming thick and fast. So we really do need to capitalise on those.

TB: Perhaps I can just add that some of the assets that the Innovation Centres have built are commonly regarded as national assets in the UK context and we'd like to establish them as becoming European assets.

WF: We think the Innovation Centres should work more with Further Education, as well as with Higher Education. Do you have any thoughts on that?

RK: We've developed an HMD in Industrial Biotechnology that's been approved by the SQA. We just missed out being able to run it last year. There was a slight

delay in getting the approval through, we thought we'd get it through in May but it actually came through in July and that was too late for an August start. So it's been delayed a year, we've got it starting next year at two Further Education colleges, which is Forth Valley and [inaudible 00:08:04] College.

We have a further three that are interested in enrolling in probably the year after, and we'll continue contact with that. That course articulates to year three of a number university degree courses in three universities, Scottish universities. So I think we are... I mean, Further Education, there's not a lot of research capacity within Further Education but there's a lot of teaching capacity within Further Education and I think this is just the start of the relationship with Further Education.

GD: I'd like to add to that. We are currently now exploring both with SDS and several Further Education establishments, shall we say, the industry demand for data skills, that it's actually a pyramid. The actual need is more broad than Higher Education and postgraduates can deliver, and therefore there is a real need to look at the entire pyramid of skills required by industry.

And we think, although not part of our original remit, being industry led and being able to be agile and change in terms of that demand, that's why we've engaged to explore that route. There is now a data analysis apprenticeship and with a levy coming in that may offer other opportunities to explore that further and support industry in terms of how they, shall we say, leverage the levy, albeit in Scotland it's yet to be determined how that will be distributed.

I think it's absolutely something we're interested in and I think it's based on industry lead, again coming back to the principle that we're industry led.

JE: I would just add to that, that I think from a health and social care perspective that there's a big emphasis on high-value skills and acquired specifically in relation to technology and data. And actually if we're really going to be able to capitalise on that emerging market that is digital health in Scotland, we're also going to need to be able to sell that, if you like, into the services we already have here in Scotland and that means putting in a whole host of new frontline skills. So carers at home, people who are providing support in GP surgeries, etc.

So, like the others, we've already engaged with the rest of Scotland in colleges in partnership with Forth Valley to develop a skills agenda event at the end of the year which is being industry led, to feed in to the conversation with colleges and we're also working with National Education Scotland to influence the workforce plan, that will come about because of digital health and the transformational change that we should probably see will tend to be in acute care.

WF: Moving on to the last one, which is the bigger one I guess. During the creation of the Innovation Centres, it was an ambition that there should be long-term sustainability, which would be part of their goal. Under the current arrangements, do you believe that is a realistic goal? And is there anything that the Scottish Government, we know that they're doing a current review of the [inaudible 00:11:17] is there anything they could be doing to help achieve that in the future?

GD: I think it probably is a big question, as you've said. I think, to start with, each Innovation Centre will likely develop in different ways. And I think there's going to be a relative understanding of both sustainability from financial independence, from public funding.

And likewise, each Innovation Centre under focus will likely have different levels of capability to be either financially independent from public funding or some form of hybrid [inaudible 00:11:57] for a catapult-type model where there's a combination of public and commercial funding.

So we definitely think as a collective that sustainability in some shape in each of our ICs is absolutely possible, but we are more than likely to have slightly different models to do that. I think all of the ICs are, and some more than others, are further advanced in terms of their sustainability planning than others.

Clearly the political situation will have an impact, because I think in many of the business plans there was a need for European funding and other funding sources to continue that model, that is currently uncertain how that will progress. I think there is one area actually that we will all, I think, benefit from, is some analysis of the options available to us in terms of public interest

companies or community interest or not for profit, actually which research and common research would benefit us all.

We may all go down slightly different paths and that will depend on the industries that we support, but that common activity would be beneficial rather than all of us going off independently and engaging in that kind of analysis.

JE: I would just add two key points. I think that sustainability can mean different things depending on who you are. It's really important to be clear about what we mean by sustainability, so using, again, my own health centre as an example, in the health-related Innovation Centre, Stratified Medicine will be the same. We are, apart from being very focused on economic impact, there's a significant impact on society and patients basically in Scotland.

And also, a significant contribution planned for in the NHS in itself, so that there should be some consideration given to the value that that creates. And we do know, and we are in conversation with NHS Scotland now, because both of the health Innovation Centres haven't actually had a mandate from the Scottish Government health and social care, in terms of the work that we're doing.

They've bought in and they're supportive of it, but not having a mandate means that they don't have to provide the money and the contribution in cash. But I think that there is a recognition that we've driven some good value, so there's a piece about that... Your second point which I feel quite strongly about is, Mariana Mazzucato, I'm sure some of you might be familiar with *The Entrepreneurial State*, a book that she's written, and I think that what we have in Scotland is something that's quite unique.

And I've had to speak back internationally around the economic strategy, the Innovation Centre programme, research and knowledge exchange capabilities, the fact that Scotland can do all those phenomenal initiatives... What we could really benefit from is a Scottish Government steer on, are we actually an entrepreneurial state and being less averse to some of the risk that comes with that?

And that includes being more open to SMEs, providing more funding to SMEs to get involved in the innovation agenda, because SMEs don't tend to have a

huge amount of capacity but they do have to keep the lights on. So how do we make sure that we really enable that to happen?

IR: So if I could just add very briefly on a more prosaic level, we're quite advanced in putting together our future planning. And I'd just like to highlight the quality of the discussions we're having with both SFC and SE are really quite welcomed. And I think the fact that we are exploring some quite radical ideas with them without people's jaws dropping is really healthy.

WF: Can I just ask something? Because I absolutely take the point that these are all quite diverse organisations and the fact that you've all got a single label doesn't change that. You've all been asked to be sustainable and I'm picking up that there isn't a huge amount of clarity around what being sustainable means. So would it be helpful for the Scottish Government to expand on what the term sustainability, because I don't take it to mean an end to public funding.

RK: I think that when the Innovation Centres were first started off, there was talk about a limited period of funding. And in the same sentence, a move to sustainability. So I think we have assumed, perhaps wrongly, that sustainability means financial independence. And I think most of the Innovation Centres don't feel like that's the way forward for them in the longer term.

But moving to more of a public/private type arrangement where it might be 50/50 it might be 30/30/30, it might be whatever model, is something we could quite easily move towards. I'm imagining a number of the Innovation Centres are almost there.

WF: Given the diversity of centres, would you see scope for different interpretations of public/private partnerships in different Innovation Centres?

RK: Almost, yes.

JE: I would just like to add to that. Being one of the first Innovation Centres and also being involved in the bid at the time, three and a half years ago, an interpretation of sustainability at the time was that there would be a limited period of funding up to ten years or so. And that, because the conversation around industry contribution to innovation generally speaking and their investment in that was something that this program was also aimed to try and improve and increase. So I think there was an element around that. I think what's happened over the last three and a half years is that, and if I'm very honest and I think I am one of the only ones that can say this, I think we've really learned from this...

What we thought we were going to be doing and what we're actually doing are quite different. And I think there's been an awful lot of learning, there's an awful lot of nuance between the sectors because that's just the way it is. And if we're industry led we have to adapt to that. I think sustainability would benefit from clarification but I don't think it would work if it would be a blanket interpretation of that. I think it would have to be specific to each of the sectors, if you want to call it that.

GR: I think that moves us quite neatly to Alex.

AS: I'm Alex Saxon from Research Councils UK. So, you've mentioned some of the tensions already between universities and business relationships. But more broadly, have you encountered differences between the ambitions of universities and businesses and how have you tried to resolve those differences? And maybe, as you're talking through, some examples would be helpful of where universities maybe changed the way they work as a result of working with you as business-led Innovation Centres?

IR: I think the straight answer is, yes, we've encountered these differences. I think I'd preface this answer by saying that there are a spectrum of behaviours and a spectrum of interests across universities and indeed within any given institution.

I think what all the Innovation Centres have done to varying degrees, to go back to an earlier question, it's been [hard over 00:20:23] on industry led and

trying to articulate industry challenges, get the university researchers interested and build projects that, it's that regular, small, cumulative effect of doing projects and getting successful results that I think is building understanding and trust on both sides of this academic-industry interface.

I think that we are – and I'm echoing a point you just made in response to the last question – I think we are all surprised in the Innovation Centres at just how much our work has had to go into, particularly when an industry is SME dominated, is bringing industry along to experiment, try things new, take a risk, invest time and effort... but generally speaking we've made a lot of progress on that front.

We don't have the incentives, the stick or carrot, for forcing cultural change, but that regular interaction is generating changes and we have examples – and I'm sure you guys do as well – of when we started out going to a university, having a dialogue and saying, here's a problem, the industrial partner thinks it's going to take three months to solve when in fact it has to be solved in three months, and the university's response being fairly typically, the answers a three-year PHD or a one-year RA, now what's the question?

Now the dialogue has moved on. We're seeing a high-degree of flexibility and we've got a couple of examples where universities have got to a stage in a project and said, actually, there's more we could get out of this, and have basically funded further work on that project themselves. So I think there are a lot of good examples around the country.

JE: I'm going to give you two specific examples. So, I think in my experience, SMEs have, on occasion, been badly served by universities that require [shared foreground IP 00:22:37], and IP generally has been a challenge for us with new project work. And largely, the reason that that's a challenge is because investors are scared away by SMEs that don't own their own IP and what we're trying to do here is get SMEs into a place where they're aiming at investors, they're spreading out...

In the beginning of DHI we did have a problem with DHI not being able to control their IP and I think we really did start to begin to be bound by that norm. We had a couple of situations, one actually that even resulted in a... and I'm looking at Keith, because it did result in an escalation from a specific university to SFC around new IP policy, which was basically, if you're not going

to commercialise it, and you're not going to generate new jobs with it, you can't have it.

So you have to give it to someone who is going to work with it. And that's not exactly what it says, but that's the basis of it. So, the one particular example we have – there's an organisation called Snap40, a really dynamic organisation, who were developing a project with the University of the West Scotland. We intervened and had a bit of a roundtable discussion with them and the University of the West Scotland have actually changed their entire approach to this.

So it wasn't as easy as sitting down and having one conversation with them and that was it, all done and dusted, it was a protracted process, but I think the University of the West Scotland really understood the benefit of doing this and also the opportunity to work with multiple SMEs and also start to demonstrate their own contribution to the economy as a part of that.

And the final point, which is one that Ian touched on, is that universities generally like long research projects because it makes staffing easier. And we shouldn't forget about the challenge that universities have in terms of keeping staff and paying for them. But generally, what we've seen is in the very beginning we were having SMEs coming in, asking for three to six month sprints, as we'd call them, and the university reviewing that and we have so many examples... I could spend all day on it... saying, oh well, that's going to be nine months or eighteen months or two years.

But now what we've actually done, we've created a sector template for the types of activities and actually all fifteen of the nineteen universities that we work with have adopted that as a standard practice with us now, because we've had to work quite hard at explaining that anything longer than that isn't going to be able to meet the agenda. But it's not a particularly easy process.

RK: I would add to that, just an observation of what we've experienced, and that is that the less research-intensive universities tend to be a lot more flexible than the research-intensive. So if we want to do a shorter project, it's better to do it with one of the less research-intensive universities.

JE: I would agree with that. I think universities like West Scotland, Glasgow [inaudible 00:26:00] people like that, organisations like that, we have seen significant change in the university then [inaudible 00:26:06] two projects, one [smart course]. But we also had University of the West of Scotland on that project so that maybe helped us influence that at the time.

Also we've got a specific mental health one with Edinburgh University that said it couldn't be done in less than twenty-two months and we're now doing that in nine. There is a willingness if you've got the right argument, but it's not a piece that you can just walk into each time and say, can you just do this as a three-month piece of work, because the staff aren't generally there to do it.

RK: It takes three months to get the staff.

AS: So we're thinking about that impact question, what balance do you strike when you generate income into your Innovation Centre and then deliver impact on the economy? We're very aware that you probably try to do both, but we do know that that's not always possible, so how do you strike that balance?

GD: I think collectively our focus has been on impact that is part of our KPIs. That has been all of the ICs, I think, on the whole, their primary objective. And not innovating income. I think in terms of creating impact it's about solving industry challenges and problems, it's again back to that industry led. But if we can articulate that in terms of a clear economic benefit, we tend not to get involved.

There's definitely some ICs further down the road than others in terms of innovating income but that has also got to be very balanced with any displacement. So certainly there's been, throughout in our case, examples where companies are maybe a little wary of engaging, and essentially thinking, actually, you're going to perform data consultancy and therefore actually displace us.

So we have to be very, very careful about the support we give organisations to ensure that we are not seen to be disrupting industry by being obsessive about creating our own income. So I think actually, collectively it has been absolutely

about impact and economic benefit. Where we can, and where it makes sense to make some income, that has been found to be certainly significantly, shall we say, behind the economic impact, in terms of priorities.

RK: I would just reiterate that. If it can't be articulated into clear economic benefit, then we don't do it. It's actually not difficult. Most of the Innovation Centres as regards income anyway are probably behind on their spends as it is, so generating income isn't a huge priority for the Innovation Centres. It is about creating economic impact and I think we all work very hard to do that.

From my own Innovation Centre's experience, unless there's an industrial problem to be fixed that's sponsored by a company and they're prepared to put something into the solution, some money into it or some contribution to finding the solution to that then we won't do it.

JE: I'll just add to that, which is to completely contrast to the others. In the health Innovation Centres, we have to be very careful that industries aren't paying to have access to health and care professionals to solve a problem they've got. So there's a fine line between addressing civic challenges with industry partners rather than industry paying or getting free access and creating an unfair advantage or an unfair competitive advantage, so we have to...

To address that, we now use two commercial and developmental procurements. Everything that we call comes through Public Contract Scotland, so everything is open and transparent. So if there is a challenge being put out there by Dr so and so, then every industry partner, if they're watching PC lists, has an opportunity to respond to that challenge.

So there's a trickiness when you're dealing with public sector, that you just have to be a little bit careful when generating [inaudible 00:30:33].

WF: I was just wondering if the transition to sustainability is going to disturb this fine balance.

JE: I think it depends on what you're doing and how you're doing it. We might come to that in one of the next questions. Again, in echoing Gillian's point

from before, every Innovation Centre will just be really unique. Gillian's working very much with local authorities, so there'll be a challenge there.

We just have to be very mindful of the fact that we're driving civic benefit as well as economic benefit and the thing that's actually unique and a lot of the European and international organisations know of, is the fact that this is true collaboration between public sector, academic and industry. So how you manage that to get best advantage for our agenda, I think will have to be very well considered in each of our areas to protect the interests of the public sector.

RK: One of the key measures we use is the average we get from the public funding. So we take the core funding and we say, how are we leveraging that funding? Naturally the first year is an awful lot of public funding and not a lot of private funding, but each year that ratio has gotten better and better and we're just about finished our financial year and I think we're just about leveraging about £2 for every £1 of core funding that we've got.

And the target we've got is three to four. So by the time we get to the funding period, I would be expecting to be £3 or £4 for every £1 of core funding. And I think that will happen naturally via the way, in its natural development.

AS: So I guess, following on from that, are there any constraints put on you in this balance by other universities, Scottish Funding Council, the enterprise agencies or the government when you're trying to strike balances, is probably the question that we were leading on to.

JE: I think we all wanted to jointly recognise that and I think we're all in entire agreement that what SFC have done here is actually fantastic and we can say that because we're Innovation Centre chief execs. But, you know, we all see, individually, the substantial impact that we have the potential to make.

And we're quite proud to be a part of it. I think we all want to be on record as saying that because it's a very ambitious programme, but it is equally a very challenging one. All the Innovation Centres work very closely with very large, long-established and a lot of times very bureaucratic organisations with a remit to challenge them to do things differently.

I often use the term 'constructively disruptive', I don't know how many people would agree it's constructive, but I try and keep it constructive. But inevitably it does lead to some frustration from an Innovation Centre's point of view because it means we are sometimes constrained and we do have to compromise quite a lot, especially when we see that there are bigger opportunities but we're not in a position to be able to take things forward. Some examples of that can be that we can't fund industry participation, state aid is something that sits there that we have to be very cognisant of and others.

We do recognise these challenges; we've known what we've all signed up to do here. Innovation can be quite a lonely and isolating place to be where you're in the middle of it but I think we're all quite comfortable with being uncomfortable. But we do need to recognise, I think all of those agencies need to recognise the challenges that the Innovation Centres have and support us to address them.

And I think the other thing that I would say is that some of the Innovation Centres are quite long-established marketplaces and large corporate funded, but actually some of them don't... So thinking about how those agencies can be more supportive and interactive with us in addressing that with us would be useful.

And I think the final thing, it's just an example, again from my own centre, we have a lot of stakeholders and a lot of those stakeholders wear numerous hats, sometimes in the Scottish Government, sometimes a clinician, sometimes as an academic, sometimes they're even industry members and they do all of those four things...

So when you've got so many people with so many competing priorities, it would be really helpful if – this is from a DHI perspective, I can only speak for myself here – it would be really helpful if the Scottish Government could put a stake in the ground and say, this is an ambition for digital health, this is how the skills and knowledge exchange research agenda falls into that, the economy, etc. and just pull it together, because then everybody's pulling in the same direction, and we've got a clear road to where we're going. And I think we would all benefit from that, at the Innovation Centres.

GR: Can I just ask, do you feel that you have someone's ear in the Scottish Government, if you want to make that point directly, or if you wanted to inform their view on what the priorities are?

JE: So I'm in a very fortunate position that [Graham Dickson 00:36:18] offered to mentor me two years ago. I'm sure he might have regretted it soon after. We did have a meeting in this room on the 9th February with a number of Director Generals and the Scottish Funding Council etc. present and we're starting to take that forward, that exact action that you're talking about.

So I think we do. I think if any one of us decided to pick up the phone, I think we'd all know now - we didn't have that at the start, a lot of the time we've had to work on that on our own, it's not been something that's been helped with - but by and large we've all got groups of people.

IR: I think being somewhat further down the food chain in terms of enabling technology, it's maybe that link to government, having somebody's ear isn't as natural as it comes to some of the other Innovation Centres, but I think when push has come to shove, an email has gone around, we've picked up the phone, somebody's gotten back to us.

I think there's a lot of interest and a lot of enthusiasm to see the Innovation Centre's been successful and I think we get that dialogue when we need it. When I'm having a bad day, yeah I think I'm being constrained by some of the other actors you mentioned here but generally speaking, when I'm having a good day I don't think of it as being constrained by the other actors, what I think constrains us is the nature of our funding source and the models that we have.

Basically, and I'll paraphrase brutally here, we can fund activity in Scottish universities, well there's a whole wide world out there and whereas we want hot pursuit to go beyond Hadrian's Wall on some of these projects and where I think a really telling thing is that, although all the innovation actors have a place in the innovation system and they've all got one over-arching govern economic benefit, but each of them has a subtly different mission and subtly different KPIs and that can often lead to making it really difficult to align on specific projects.

And I know some of the other Innovation Centres do as well. We share our pipelines with Scottish Enterprise and they share their companies of interest with us, but often there are no clear examples where they could say, oh, we can help accelerate that, or we could equally could say, we can help you with that. Because the construct of the projects is subtly different because of our funding models.

GR: I'm going to move us on, partly here because you've provided such a good introduction to what's coming next.

DM: Good afternoon, I'm Douglas Mundie, I'm a board member of the Scottish Funding Council and I'm a member of the Research and Knowledge Exchange Committee. Can you tell us a bit about what the relationship is between the IC programme and the Research Commercialisation offices in universities please?

GD: Sure, I'll start. Essentially it varies by institution. And depending on the institution, even the remits in research commercialisation offices are subtly different. So we probably, over the period, have grown and built the relationships that have probably made that relationship much better than it was in the original start of the IC programmes.

I think initially, certainly some research commercialisation offices saw us as competition and we've had to work through that perception and challenge that. And I think on the whole the relationships have improved significantly over time and the trust has improved. And I think, again, it's the balance between being industry led or technology push.

We've got this great idea from an academic team, go and sell it, versus this industry actually has got that problem, but there's no easy money there. And I think over time that has improved because of the understanding, I think, more broadly in those offices about our remits, about what we can and should be doing.

But also, what I think has greatly benefited those relationships is that we've all got strong, very, very strong industry contacts, we are all from industry ourselves, we've got a breadth and depth of industry contacts that actually

those offices now see us as a great advantage. And if they learn to use us properly and we work together, that benefits everyone.

JE: There is a slight challenge and I think we were speaking about this earlier actually as a team, in terms of technology readiness and how you take a concept as a challenge and turn it into a product and a service and then take it into market... If you think about measures that we have as an Innovation Centres in terms of generating revenue, creating jobs, a lot of Innovation Centres themselves are not actually quick to do that part of it.

So there's a heavy reliance on engagement with commercialisation departments in universities but also with the enterprise agencies and entrepreneurial Scotland and all the difference actors that are in that space as well. And I think, as we move forward into the next stages of funding, I think we will have chances to have a really strong look at how we ensure that we actually get that traction that benefit.

And I can give you one example, a really phenomenal project that we have which is with Dundee University actually. What they're doing is really good, but they're actually being quite slow. So the market opportunity for this particular product is right now and it has global appeal and the potential to be a significant offering for not a huge amount of cost, so quite a big profit potential and good [inaudible 00:42:53] levels on it.

But they're constrained by the processes and their evaluation that happens there, so there's a piece around how you enable that to be as agile and as dynamic as you've said these Innovation Centres ought to be. We do have a very heavy reliance on, well DHI have a very heavy reliance on others for that commercialisation process. So that's tricky.

GD: What about your relationships with your non-hub universities?

JE: So, actually we all have very, very good relationships with non-hub universities and we all have very good volumes of work that was brought to you by almost all universities. I think some of the contracting teams have had it a bit harder in terms of flexing to address the business needs for with any of those

universities, as I was mentioning earlier. The relationships, by and large, are excellent.

IR: Just from a CENSIS perspective, because obviously that's the one I've got the figures for, we have multiple projects with several different universities but we touch five of the research pools in that, and we have projects that range from a month to the longest being 39 months. Somehow, universities have managed to accommodate our range of activity, so we're very pleased with the way that's going.

JE: Just to give you some quick stats on that, [an I-Bio IC 00:44:32], I think it's... what's happened...

RK: We started... when we initially expressed interest we started with seven, we had thirteen that signed a collaboration agreement, we've now got seventeen that have signed a collaboration agreement, and we work with about two thirds of them actively at the moment on various projects and activities.

WF: Can I just ask, maybe I should know this, when you sign a collaboration agreement, do you sign it with the university?

JE: So in our case, it would be the host institution signs on our behalf because we're not a legal entity, so we can't sign as an Innovation Centre. And then we always have an industry partner and an academic and a civic, whether that's health or social care, so we get the partners involved when we sign it, it's always the host institutions.

WF: What I'm getting at is whether or not there is wide awareness in non-hub universities of their relationships with the Innovation Centres. Because what we saw in non-hub universities, they didn't claim a relationship [inaudible 00:45:32].

RK: I think it'd be good to talk to the principals of the non-hubs, you'll probably get not a lot, because we tend to work much more with research teams so I would say it... and it doesn't necessarily filter upwards, of all the activity that's going on. So I would be confident that the Innovation Centres are working with all the Scottish universities across the board, as a collective, as a totality. But I would also say that a lot of the principals are not that aware of the total activity that's going on. Not surprisingly. That's not a criticism. These are busy people; why would they know every project that's going on in a university?

DM: There was a comment earlier about perceived competition with university research commercialisation offices, how does Interface fit in?

RK: The relationship with Interface has been quite varied between the different Innovation Centres. I think some of the Innovation Centres have struggled to see where they fit and where Interface fits and see an overlap. When we discuss this within ourselves, we actually have – the four of us – actually have very little interaction with Interface, is that fair?

JE: We actually have quite significant interaction with Interface...

RK: Okay, well we don't. We just swap leads with them. I have a very good relationship with Siobhan and we talk on a regular basis but it's really just lead swapping that we do.

JE: From a DHI perspective, Interface have been involved with us right from the start. They helped us to navigate the academic network because I'm not an academic and I haven't come from that background, so I needed a bit of help and Interface helped to do that, so we snatched their hand off for it. They also sit on our project improvement panel and DHI try to identify things that we won't take forward, so they might pick them up and do them.

Or we work together to signpost. We've also supported project partners together and leveraging Innovate UK funds and I think our relationship with Interface is quite tight.

IR: Similar to Roger, we formalised an agreement swapping leads, that works fine. I think what would be quite interesting is Interface have now developed a sector offering and I think there is a prospect that that might overlap with the Innovation Centres. But I think that depends on which way you look at it. If you look at it as an opportunity to work closer together on stuff, I think that could be very powerful.

RK: One of the things we describe is the interaction... I mean, having sort of had this issue for a while, we say Interface is broad in its coverage but quite limited in its expertise. The Innovation Centres are quite narrow in their coverage but very deep in their expertise. And that seems to work for most of us.

DM: So how does Innovate UK and the catapults fit in?

RK: My Chair is on the board of Innovate UK, or it was until very recently on the board, so I haven't been able to ignore Innovate UK [laughs]. We work quite closely with some of the high-value manufacturing, Catapult particularly, CPI – Centre for Process Innovation, we've just taken on a... in fact in October we'll be launching in a conference an alliance which we're calling Biopilots UK, which is about creating... which is where all the open access pilots and pilot facilities are clubbing together to create a more UK wide approach to what we're doing, with the ultimate aim to finding what's missing and presenting a united front going forward.

We work with CPI on that and a number of other centres within universities. The IB Catalyst was a big programme that was run by Innovate UK that our members certainly took considerable advantage of. We work quite closely with [KTNs 00:49:57].

IR: Just to add to that, we've an Innovate UK board member, we run a number of joint events with KTNS, for example, up here, we have a number of projects where we have brokered relationships that have gone on to be funded by Innovate UK and we have two examples of projects where we are actually, as

an Innovation Centre, are part of the delivery of growth to an Innovate UK project. So generally speaking it works very well.

GR: You're being too interesting. I'm going to have to move us on. I really am going to stick to the clock. Douglas, I hope you don't mind if we move along to Alex.

AH: Hi there, I'm Alex Herbert from the Higher Education Funding Council for England. I'm going to compress these two questions into one, for speed's sake. With the benefit of hindsight, what would you change about the way the centres were set up if you were doing it again? And what changes might you recommend for the future?

GR: Can we do this in like one minute each?

JE: Well, we've spoken about this before already today. I'll do this quickly. Just not in the point that we're celebrating SFC's initiative here, I think that we all agree that the universities are a challenging place to be, but also recognising that universities' core business isn't dynamic and transformational, changing innovation in the way that we do it.

We bring risk, agility and dynamism and challenge, not just in relation to how much to pay people but how we actually want to conduct a business and the kind of culture that we need to drive in the Innovation Centre. Is there a consideration that perhaps a special purpose vehicle, that would allow the Innovation Centres to stay together?

But it's really important, putting the sustainability point to the side for a second, it's really important that the uniqueness of that neutrality that the Innovation Centres have is protected somehow. So perhaps that's in the form of a special purpose vehicle that allows that to happen. The second thing is that we have to consider the whole innovation life cycle.

As I mentioned before, the commercialisation aspect of it, and if you think about it in terms of TRLs, we don't... we're not that good at covering the whole case and it's not that we're not good at it, it's just that it's not what we're funded to do.

The final piece is really about whole system funding. I think Gillian said it, we can fund Scottish academics, but we don't have the ability to draw inward investment, we have a huge reliance on SDI for that. Scottish Enterprise and Highlands and Islands Enterprise have been reluctant at times to get involved and put money on the table when we've needed it. I think we could really think about all of that and I'm going to say it again, Mariana Mazzucato's Entrepreneurial State is a phenomenal theory and if we want to really capitalise on that then let's be ambitious and really get on and do it.

RK: My view would be picking up on the coverage of the TRLs. We're meant to be covering TRLs four to seven. With the sweet spot of the university systems it's really one to three. And with four and five being impossible. If I map out all of the projects that we've done, they're all TRL three, four and five.

And I've just presented this to Scottish Enterprise this morning, to Linda [Hannah 00:53:43], we had a meeting with Scottish Enterprise this morning with my Chair, and one of the things that we said was that if we're going to help the companies through that are on these TRL journeys, we need something beyond the TRL five to be able to support them.

So I think from the outset we should have had the enterprise agencies more intimately involved. I know they've been observing but I think they should have been more financially involved, in the setting up... So going forward, that's something...

IR: Just very quickly, the universities, we know they are a key part of the jigsaw puzzle for innovation, but they are necessary but not sufficient addition. There's so much else that needs to work properly and I think being joined up is absolutely key. The only other thing that I would echo that was mentioned earlier on – the universities, what they're good at, they're great at.

Particularly the ones in Scotland. But one thing they're not good at is running organisations that are there for the benefit of economic development. It's not the right place to be.

GR: There you go. Before we finish, is there anything that we have not covered that you have a pressing need to tell us about? I think we're about done, actually. In

which case, can I thank all of you very much indeed for giving us such an interesting session, it's been really good to meet you.

ALL: Thanks for the opportunity, thanks.

END OF TRANSCRIPT

File Name *IC CHAIRS – 27 July 2016*

File Details

Audio Length: *01:25:49*

Number of speakers: *11*

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers.

Notes:

*Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03].
Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.*

START OF TRANSCRIPT

GR: Good afternoon gentlemen, and thank you very much for joining us here today. My name is Graeme Reid and I am chairing this review. To my right we have observers from Ekos Consulting and the Scottish Funding Council. To my left we have members of the Advisory Committee who will introduce themselves as they contribute to the discussion. This afternoon's proceedings will be recorded and it's our plan to publish that recording, along with recordings of all the other meetings, at the end of the review. So I wonder if we could start by each of you introducing yourself briefly for the record, and if I start with you, sir.

BM: Of course, yes, yes. Good afternoon, my name is Bill McBride, I'm here today in the capacity of chair of the Construction Scotland Innovation Centre. I also chair a couple of other boards but this one is particularly close to my heart. I've been involved in it since inception for the last 17 months and moving along quite quickly.

PdL: I'm Paul de Leeuw, I chair the Oil and Gas Innovation Centre, and I come from the oil and gas industry itself for many years.

NL: Neil Logan, I am chair of the Data Lab, digital technology guiding trade. I've been involved with the Data Lab since the tender stage really, since we were getting involved in the original proposal.

IS: I'm Ian Shott, I chair the Industrial Biotechnology Innovation Centre. I have a long career in the life science industry at both multinational and SME level, and I've just come off the Innovate UK governing board.

BD: I'm Bob Downes, chair of CENSIS.

DS: Good afternoon. I'm David Sibbald and I'm chair of Stratified Medicine Scotland. I'm a computer scientist by background.

SC: Good afternoon. I'm Stephen Cameron, I'm standing in for Jack Perry today, I'm representing the Scottish Aquaculture Innovation Centre. I sit on the board of the SIC and I've 20-odd years' aquaculture experience.

GR: Thanks very much. It would be good to run through a few questions, and I'd just say please don't all feel obliged to respond to every question. I'll leave it for you to exercise your own judgement, but we don't need seven versions every time, there'll be other times when we really do need seven versions. Willy.

WF: Okay. Hi, I'm Willy Findlay and I'm with the GlobalScot organisation, good to see you're all here. According to the rhetoric innovations centres are business-led, we'd like to know if you feel that that's how it's happening. And also, is the chain of accountability for finance and performance that's applied to the Innovation Centres helping you to lead that business-led mantra?

BM: Okay, let me kick off, if I may. Business-led, yes, speaking in terms of the Construction Innovation Centre, absolutely. I wouldn't have been involved in it if it had not been business-led. Why is that important? Because the reality is that the key for the construction side of things is actually in the execution. You can have all the strategy you want but unless you actually have proper execution to take it through it simply becomes highfalutin strategy.

Can I prove it's business-led? Yes, the majority of our board are business people, we make sure that businesses themselves have, what we call, skin in the game, so we're currently running at a 1 to 3.5, for every £1.00 that we're putting in to projects industry itself is putting £3.50, £2.00 in cash, £1.50 in kind. That gets skin in the game.

In terms of the financial side of things, executive team which we delegate an enormous amount of power to, the chief executive, then ratified validated by the board itself, which we have a few financial people on that board and also we have SFC Scottish Enterprise as observers on the board also. So yes, I think very much business-led, in my perspective for construction only it would not

work otherwise. Perhaps sometimes we're a little bit too tight in terms of how we handle the money, but we're quite precious about it, we need to get the best bang for buck. We only have something like £7.5 million over the five years for an £8.6 billion business, so it's not an enormous amount of money, we need to leverage that much money as much as we possibly can.

IS: I'd add to that, we're a membership organisation as well so businesses, and 60 of them have paid to join. We've set up a separate audit committee and we pay for a professional accountant to work three days a week. So we've got governance, security, we have a hub university, Strathclyde, that has a strong business focus and we've put the mechanisms in to get the necessary autonomy and agility to drive the business.

BD: To avoid repetition I would only say very similar to what William said, slightly different leverages, but in terms of structure and governance very similar.

NL: I think they're all much the same.

BD: Yes, I think it is worth adding, I mean, the commitment and the enthusiasm of the people that are on the CENSIS board is recognising it's their job. They've been given public money to do a job so they accept the responsibility. So the board selection was crucial to have people who were expert in sensors and imaging systems, they use their networks on behalf of it, and they are involved in particularly creating platform technologies in the area we're responsible for. And crucially, it's represented by building credibility over the years by the companies that we do projects with. And we count our success, how many projects would not otherwise happen that are business-led and do they add to

the economic additional value in Scotland? And that's where the network grows around the Innovation Centre, all business-led.

PdL: [Inaudible 00:06:23] yes is the answer to your first question, and I think it's absolutely critical, certainly for the oil and gas industry, it has to be demand led. The only people who know where the demand is, is the industry, therefore those at board representation and in the organisation, very strong industry focused, and I think that's what's making the difference at the moment.

GR: I think you probably are going to get an answer from all.

[Cross talk / Laughter]

DS: Because we're all so keen for the first question, it'll probably tail off. Maybe just to complete that, yes, I think from a precision medicine, stratified medicine perspective very similar. I mean, it's a new, a relatively, kind of, new industry from a life science and healthcare perspective so the market business is defining need, products, services that ultimately come out of that.

But there's also a strong need for academic science excellence that plays in to a definition of those programmes and solutions, which I think, certainly from our perspective, creates that, kind of, nice hybrid model where there's a very strong market and business mind, very strong business participation and business funding. But also it's this way of getting much closer and tighter collaboration between the, sort of, academic community and the business community which we know is one of the key goals in terms of the Innovation Centres.

NL: Yes, there's not much to add. Yes, it's definitely industry led. In terms of the second part of your question in terms of accountabilities and stuff on the financial side, yes, I'm comfortable with that, I think we do it well. And in terms of the industry and the demand I think is I look at the projects, which ultimately is what this is about, you know, delivering many different projects. And I think that's testament to how much demand there is. Data science is an interesting thing, it's probably the hotter thing in the technology world right now with data science. So frankly, the demand is so great it would be tough for us to work any other way.

WF: The second thing I would be interested in is, does being part of a university cause any constraints for how you work with business? Is it hard to convince them that you are business-led? We've had examples from other people, but maybe when you want to do a joint venture with a company or somebody wants to tie in, the contractual issues can be difficult, is that...?

NL: Well, I mean, I think from my perspective the reality of the Innovation Centres was it recognised up front that was a challenge. And the purpose of the Innovation Centres was to try and move that, to try and grease the wheels of that. So is it a challenge? Yes. Is it getting better? Yes, I think it is. We've still got a long way to go, [a few years 00:09:14]. So yes, I think it's getting better. Universities are trying, could they try harder? Probably, but they're moving in the right direction, I think that's good.

IS: CENSIS and IBioIC reside in Inovo building, so it's not a university building, it's a Scottish Enterprise building and we don't suffer any stigma or problem.

SC: A similar point, we're hosted by Stirling but we're not part, we are independent so we're keen to promote that independence.

GR: So what's your legal status then?

SC: The legal status...?

GR: If the Innovation Centre?

NL: I think we're all the same, I think we all flow through the academic institution first, I don't think any of us are standalone organisations.

BM: No, we're not legal entities.

GR: Is that a problem if you want to do a joint venture with a business?

BD: It has not proved to be a problem. And Ian and I were at the early meeting [inaudible 00:10:11]. The problems of IP go much further and wider than an Innovation Centre. If I look at the things we have to do that involve contracts involving universities, IP issues, the fact that CENSIS has been there has made that easier. But the big problem is about the ownership management of IP and contract law associated. We make it easier than it would otherwise be. And I don't expect we're going to solve the problem.

PdL: I think it also depends where you are in the cycle. I mean, certainly for most of the people around the table here we're two, three years in. So we've gone through the second phase, we're in a, kind of, operational like space. I think when these things start to grow you need more material elements, I think you might need to look at structure to go with it. So I think phase one hasn't been inhibiting progress, but I think when you move further ahead and more strategically, I think you need to think about what's the right structure for the next phase for Innovation Centres.

IS: And we're definitely committed to a trajectory that will take us towards a company limited by guarantee.

BM: I think [inaudible 00:11:14] each Innovation Centre is on a slightly different space in the innovation marketplace. From my own point of view, it's actually benefited me despite the fact there's been a little bit of pain involved in it, to actually have the set up that we do have where we have the ENU as our administrative hub [inaudible 00:11:33]. Because in terms of construction, one of the benefits for innovation within construction is it allows us to actually change the nature of construction from not within, but actually using external expertise in universities.

So there is a degree of pain as the two cultures come together, but frankly you get pain in businesses, well, I have it every day in terms of R&D and technical [inaudible 00:11:56], etc. So it's a matter of, from my perspective, managing that process. The bigger picture for me is in essence is coming out of the question you said, where the true value is going to be in 10, 20 years' time, it's actually having to go through this little bit of disruption phase and actually coming out at the end with things being much, much stronger. That view is certainly my perspective.

GR: I'm picking up, as I expected, quite a bit of diversity, which is we want with Ian being able to state with confidence of being in a trajectory towards the CLG. But it feels as if it's something for the future, it's not a criticism of the past.

IS: Correct. In my case it's correct.

NL: Yes, I think that's true. We were talking before we came in here and I think that each of the Innovation Centres are slightly different and regardless of, you know, where we all started is slightly different, where we're heading will be slightly different, and the mechanisms that we use to get there will be slightly different depending where we're at. I think that's a strength.

You know, Data Lab is different than Industrial Biotech, it's a different thing and we're going in slightly different ways. So I don't think any of us would necessarily look at the past and say that this was absolutely the wrong thing to do. But as we move forward we'll all have different views, slightly different views of what the best place for our particular Innovation Centre is in the future.

GR: I get, from the chief executives and external commentators and even from this brief discussion, I get quite a strong sense of community. That community is partly born of having a common status. Is that a problem if...? I mean, if we [inaudible 00:13:47] further on and this common status evolves into seven different models, does that threaten the community or do you hang on to the community as you go in your different ways?

DS: I mean, I don't think it does. I mean, I think as Amelia said, the reality is you've got very diverse industry sectors here who are working in different cycles and have different demands. And it's, you know, frankly I'd be concerned if there was, sort of, a homogenous approach to what we're doing, whether it's in structure or governance or business model. And I think then you've got some trouble on your hands, frankly.

So I think all the Innovation Centres are different, and they have to, you know, they have to align to the realities of their individual markets, they have to align to the capabilities that exist within the universities centres who they work with and the companies that they work with. And there's a consequence things are then going to be very different. I do think, I think there is strength in that diversity, and the reality is there is a community and that community exists. And people are supportive of, you know, everybody's supportive of everybody else, and people want to share and exchange models and ideas you don't have to take those models that are not appropriate to what you do, but at least you've got an understanding for what is going on.

So from a Stratified Medicine Scotland perspective, I mean, we are in the throes of transitioning from a, sort of, ten party collaboration in to a company limited by guarantee, where the members move in, the collaborators, if you like, move in to become members of that company. The company limited guarantee has a commercial subsidiary associated with it that creates a vehicle that allows us to do what inevitably will be a series of spin-outs and joint ventures over a period of time. Should we have set that up on day one? Probably not, but just where we're at in the cycle now that's sort of thing for us becomes just very appropriate.

PdL: And I'm making comments on this one, Graeme, because I think there are elements where difference is a strength or elements where difference is a

weakness. And I do think what we asked our COs to do, and hopefully they made it very clear, is that element of good practice where you want to make sure you share that. But elements around interactions at universities you want to share, you don't want to all have a new [inaudible 00:16:18] agreement every day. So there's elements where we're saying it's building your difference because it reflects our nature of our industries, and other bits where we're saying it's to make sure we have as much efficiency built in in the underlying processes. I think what makes us actually a stronger organisation together is what we do with innovation [inaudible 00:16:33].

BD: And I think it's important that I ask the question, certainly in our case, and we're working about half way through our model for sustainability beyond the period that CENSIS is funded. And ask the question that would your legal status change make any difference to the things you're trying to do? And if I take out where the major problem which is where's the community in innovation in Scotland? The big project that we did, the semi-conductor one, Mirage, involving a number of SMEs, University of Glasgow, and other partners.

It was when, if you look back over why that took two and a half years to do, it was about the processes not hanging together to deliver what everybody in the community, which was not just CENSIS and the companies, it was SE, it was Innovate UK, do those work as well...? Because everybody wanted the project to happen, but it was like I would agree something with you, and then this party over here would disagree, and we're in the middle.

Now, the learning from Mirage is something that needs to have more attention than what you worry about on legal status. Because the legal status we had wouldn't have made any difference, unless we had hundreds of millions of pounds to play about with, which we're not going to get.

IS: Just to add a couple of points, we did talk to each other, we're clear that the cookie cutter model doesn't work, and we are trying to collaborate. So IBIoIC is trying to collaborate with CENSIS, we're jointly funding a PhD student with the Data Lab, we're exploring projects in OGIC, and we will definitely want to work with Precision Medicine. So the community will have other drivers.

GR: Okay, thank you. Willy, we'll move on, if that's okay?

WF: Yes, that's fine.

TB: Tim Bedford, a member of the Scottish Funding Council's Research and Knowledge Exchange. So I wonder, are the current government's arrangements suitable for the longer term future? You've touched on that already. How do you think we should evolve the [inaudible 00:18:39] out of the start-up phase when you become mature organisations, and how far are you free to make these changes on your own? And then to follow it up, in light of experience, would you have chosen different governance arrangements for Innovation Centres if you were setting up over again?

GR: There's a really key question there is, you know, are you free to make these... can you self-determine or do you have to come to somebody for approval if you want to go in your different ways?

BM: From my own perspective, I have to say that I've always felt that we have had the freedom as long as what we want to do has a rationale. I wouldn't say we simply do what we want to do. But the truth of the matter is there's a board and we've said we will talk through what is the best way to achieve the best

execution of the plan. And to that extent we have moved away from certain parts of the business plan because when we got to the marketplace we found that market was telling us different things. So we moved. We would have a board meeting, we have our observers at the board meeting, we'd be going through the rationale for changing. We've moved, reallocated resources to different parts.

So my own perspective, I feel total flexibility to do it. And the end of the day, the view has been very much you guys are running this, as long as you're going to achieve what you tell us you're going to achieve, the means in which you do that we're relying on you. We'll keep an eye on it to make sure that you don't go too off target, but no, I can say I've never, never felt constrained and the board have never felt constraining.

IS: I'm going to give a slightly complicated answer [laughs]. So we have no constraints as we are. We've started from zero with the Scottish Funding money and with the universities as our platform. We now want to be much more ambitious, we've got 60 companies who've signed up and paid to be members, we're talking another 180. Of the projects we've done they're largely in the lower technology readiness levels, consistent with a community that's grounded in universities.

The majority of the companies who've not yet signed up have project ideas that are at the higher level, and we don't have the right infrastructure to risk mitigate that. And what we've started, today in fact, is a discussion where we will be looking to see if we can change the model a bit in the sense of a progressive development, not because it was bad. And look at wider funding network with the enterprise organisations, possibly Innovate UK, business as well.

So with that in mind we are looking at a different structure. But we think the ground rules of governance that are in place now are mature enough and proper enough to be continued with our newer ideas.

PdL: If I may, from an oil and gas perspective, I mean, the oil and gas industry is going through a really tough time at the moment. So innovation in technology is absolutely key and [inaudible 00:21:56] has been a fantastic starting point. We have engaged with all the industry leadership teams and actually we have now evolved them all quite a lot, and actually that's giving us flexibility that we have, absolutely yes, [inaudible 00:22:09]. We have now actually built in skill which is probably about 10, 20 times bigger than what the Innovation Centre plan originally started. We have far more of the industry behind us, we've got a huge amount of funding now from both UK and Scottish governments to support that, and we see it as the building block for what OGIC has been doing. That's currently being set up.

So flexibility of having a business-led model, business people involved, a clear demand from the industry, and actually having direct commitment from industry [inaudible 00:22:37] we pay our 50% share of this, has actually made all the difference. Would we have got that if it was down to the OGIC model? I don't think so. I think that how and what we put in place all those years ago with the Scottish Funding Council thinking has been hugely fundamental in actually making that happen. So I think, yes, the governing arrangements actually have been appropriate, as I said, they need to evolve when you go to the next phase of development. And that's exactly what we're doing.

DS: I mean, I think I can just echo those comments from a stratified medicine perspective. What's in place originally, it's fine, I don't think anybody feels constrained, there's a well-functioning, sensible board that if we wanted or

things need to change should change. You know, there's a discussion around that, nobody feels constrained or inhibited by that. I think part of the evolution, so from our perspective part of the evolution in to that, sort of, company structure that I talked about really is about an alignment to what is coming back to us from a market perspective.

It's very difficult for, you know, for a large external, kind of, global pharma group who wants to engage on a long term precision medicine programme to engage contractually from an intellectual property perspective with a collaboration of multiple different parties, all of whom are trying to indemnify each other against what's going to happen over the next five years or so.

So from our perspective, because we're now at that stage where we are having those conversations with very, very large, kind of, global multinational pharma organisations, what we have to do is we have to adapt and we have to change to meet them at their door. So how do we make that contracting and that intellectual property conversation something that takes a reasonable amount of time, as opposed to an unreasonable amount of time? Because from their perspective they have choice globally as to where they want to go to, to sort of, engage in their programme.

So I think that's just, kind of, an evidence base that says, you know, it's back to the business-led piece, you know, when you get signals consistently fed in from the market you, sort of, pay attention and you change things. You change your structure, your process to make sure that you're aligned, otherwise you're going to have a tough time staying in business.

BD:

I think that from a CENSIS point of view we are actually a second version of the sensors and imaging systems, because S4C was around before I came along. So it has already evolved. We've still tried some things which didn't work, being able to change is therefore a test of your flexibility, and we have been able to

change. The research landscape database that we've put together which was really turning the way academics would describe something like graphene into that something that means applications to business. So having that engineering team, which was one of the things that really excited me about CENSIS that there was funding to put an engineering team together, and we can talk with business and link those two things.

So going forward I wouldn't want to shut any options down, the flexibility to do the two areas that we're likely to look for some kind of legal entity or subsets of sensor. The connected devices development centre, which is a platform test experimentation area, a physical area with physical kit in it for companies, is one version of it. That might be something that we want to set up as a separate legal entity.

And the other one is the low powered wireless network which we announced two weeks ago, at the same time as South Korea announced theirs. It may be as that evolves both in Glasgow as test bed and the Highlands and Islands for remote work, that might be created as a separate entity. But it will be because it helps to consolidate establishing development on to the next stage.

NL: And I think that there's not much to add from a Data Labs perspective. I mean, not been constrained yet, but we'll see how far we push it. I think so far we work, you know, I've had institutions like the University of Edinburgh, it's been a great institution, very supportive, it's allowed us to try some things. But, you know, as we transition and evolve we'll see how that goes. But it's certainly not constraining our thinking about what the future is for the Data Lab, that's for sure.

SC: And again, governance, very strong early governance is appropriate, that's very conscious of the public pounds. I think in terms of restrictions or constraints,

similar, not really experienced too many. Probably some frustrations over the speed that some of our partners operate at when we're having industry led projects. But hopefully than can improve. Perhaps in time some more direct control over that would be useful to the basic element of the projects.

GR: Sorry, direct control over what?

SC: Well, just the processes that... I can give you a bit of a quick example, in procurement through UHI in one of our projects where, in terms of comparison to industry speed of procurement, it's terribly slow and protracted and, being honest, pretty inefficient. So it hasn't stopped anything, but it's slowed it down. Therefore, the pace of delivery of the project has, you know, we're now to some degree playing catch up on that project, and we'll probably get there. But that has certainly... that could improve it, you know, could improve that with more control of the [inaudible 00:28:42] and more control overall.

TB: Could I just answer a quick one? You raised the issue about a limited liability of all the different partners, and that's not something I've heard from any of the other Innovation Centres.

DS: It's the way our... it's to some extent it's the way our original collaboration agreement, so with ten parties in our original agreement between academia, industry and the NHS. And that was one of the clauses that was in that collaboration agreement. So again, with hindsight, if we were to redo that again, would that be in it? It wouldn't, because of its presence, which I think

originally was there as a, kind of, very, very conservative defensive position to make sure we weren't running off and doing things that were too out there.

I think in reality what that's done over the last couple of years has to been to put undue conservatism in to some of the, sort of, decision... you know, to the review processes. So that's just something that we did to start off, you know, to start off with. I think one of the benefits from our perspective in terms of moving in to that new structure is that the partners or the original collaborators no longer have that because liability ends up sitting with that gets, that is created.

TB: Okay. Can I just check whether there are other...?

BD: Sorry, one thing about that I should have said on governance, not just with us but SF. If I was doing it again I would ask for ten years not five, with an ability to shut it down after four if it's not performing. Because it caused us real problems going in to the last two years, because you're effectively at an end and all your contracts and how people have seen you at the end of three years. And they say, this is a three-year project, are you going to be around?

TB: So were there other organisations that also have this liability issue?

BD: No.

TB: Okay, so that was just a special case.

GR: Right, thank you. Alex.

AS: I think you've touched on the managing...

GR: Could you introduce yourself?

AS: Oh sorry, yes, Alex Saxon, Research Councils UK. I think you've touched on managing different priorities between the universities and business, so I won't go down that rabbit hole again. But thinking about the tensions between managing impact and income, generating income, how do you balance that tension in your particular Innovation Centre? And when you are balancing it would it be helpful to have a framework from the Scottish government or from the funding council? Or would you prefer to be free to determine your own balance between impact and income generation?

DS: So I think from, certainly an SMS perspective, I mean, I think the balance between those two things, and they do need to be balanced, I think the balance comes through the business model that gets put in place by the individual Innovation Centre. And the business model is going to be different, as we talk about, from different ICs. From an SMS perspective, the balance that we've chosen on that is a recognition that we have to have a strategy and we have to have a path toward self-sustainability over the longer term. And for that to happen we need to have a business model that allows that to be achieved. But the same time that business model has got to provide opportunity for other partners, both academic partners and industry partners, to benefit from the collaboration.

So without going in to the detail of what that business model actually looks like, I mean, the answer to your question in terms of that balance, is the

balance is achieved through the business model that gets put in place that basically allows you to achieve both of those things. Because both are necessary, it's not a zero sum game that we go one way or the other. And I think in terms of the... back to the second point of your question on that, sort of, wider structure thing, I think it would be a mistake to have a centralised business model that you've got to adopt because I think that is a square peg in a round hole.

NL: I think that, certainly from my perspective at the Data Lab, I think... I don't recognise this concept of balance between the two, I think one follows the other. So the Data Lab, certainly in this phase of its delivery, I'm being slightly flippant and overly simplistic when I say this, but it's all about getting projects out. And the revenue stuff comes from that. And frankly, if the revenue stuff doesn't come from that then that tells me something about the long term viability of the Data Lab. And, you know, one of the things I've said consistently about the Data Lab is, you know, if industry is picking up the cudgels and making steps and showing that the Data Lab's no longer required, then in some ways then so be it. I don't look at that as a failure of the Data Lab if other things are, you know, industry going at certain ways.

For us though, you know, there's huge potential impact for us, the projects that we're delivering are impactful, and certainly when I look at the KPIs that's certainly the case. We're just speaking to the businesses we're working with, you can really feel it is tangible, and everything cuts from that, you know, if there's impact and the businesses see that, then revenue follows. So I think right now we're in that leading with impact and pull revenue through. So to me it's not really a balance.

PdL: I like the question, and maybe I'm, to give you an example, stress testing. So the oil and gas industry as an industry we have made no money since 2014, so no money '14 to '15 and we're going to make no money in '16. And the question then is why would you do innovation and why would you spend money? So a test of economic impact otherwise you won't do it. So I think it is very, it's a credit to the Innovation Centres that we're working with, with colleagues in the room here, centres in the OGIC [inaudible 00:35:00] as well, is actually projects do happen.

That means because people see it has economic impact, impact for their business, it has impact for the industry, and I think for me that's the ultimate stress test is all the things we want to do, if people don't want to do it, emails won't flow, phone won't ring. And that to me is the ultimate test yet [inaudible 00:35:18].

BM: I think it's a very good question as well. I think it ties back to the first point about business-led. There's not a week goes by in my business where I don't have to find the correct thing between how much we spend on R&D and how much we actually spend on generating income short term to pay the bills, to pay for the R&D. So construction is a good example of why the Innovation Centres are all slightly different, within the construction money we do have to have a balance. We do have to because we have to show industry that we are being successful because we're in construction. And success, sort of, breeds success, so the way that we can basically distil the innovation message down through a very fragmented industry is by actually showing successes and proving successes. Because that's what will get more people involved in it.

So we certainly do have the balance, if I had a lot more money at my disposal, yes, I would probably move a bit more of the balance towards the longer term things that might not produce something for 10 or 15 years. But at the end of

the day, I'm also long enough in the tooth to know that we do have political masters and, you know, what are we getting for our money? So there has to be, from my perspective, the degree of this is a success we're achieving, and in the background you need some longer term things.

And in construction you would have something like the off-site hubs, which is major, major project which most countries have been unable to basically just crack the problem entirely where we can do most of the construction instead of in a muddy field, do it in a factory. Everyone's spoken about it for years and years, nobody's actually really got the solution. So we have that running in the background with a number of major businesses, with 8 of the 13 universities that we're involved with to try to do that.

So trying to find a balance between the two things, from my perspective, is actually quite important. And it wouldn't happen if it wasn't...

SC: Could I try and answer the question with two hats on from a moment, one being deputy chair and one being in industry? In our sector I would say that we are hungry, in the agricultural sector, for the engagement and that's probably proven through the profile of the people that are in an around and associated with [inaudible 00:37:38] boards. You know, we are looking for a solution to unblock the talent in academia and universities who seem to outnumber the people in industry by something like five to one. But anyway, that gives us plenty to go at.

And again, this balance element here, it's very much about demonstrable value for industry. If the IC can deliver on the PIAs that we've recognised are transformational for industry, it will naturally just flow that that will be the go-to body. And hopefully others consolidate in it and just, you know, this community [inaudible 00:38:26] earlier, it just builds and, you know, that value

for industry, success gives confidence, that confidence builds further success, and it will all flow through and hopefully live on for Scotland.

BD: And just one other aspect of this, we can be more sophisticated instead of going a third, a third, a third. The public sector is an opportunity to create innovation demand. In my own case as chair of the Environment Agency, it's encouraging some of the people there who are looking for efficiency and effectiveness on monitoring systems for water quality to talk to Scottish Water, to talk to the Data Lab, to talk to [inaudible 00:39:06], they're going to fund stuff anyway. But applying that in a different way drives innovation through, and yes, it's public money but it's producing a return and creating opportunities for small companies to pitch for that business when that technology's developed. So we should be taking a more sophisticated view of what public money means in these things.

GR: You mean we, the Innovation Centres, or we, a bigger...?

BD: No, I mean we, the innovation framework in Scotland, which is your enterprise agencies, and certainly the National Health Service are really doing it in Scotland. All I'm saying is that is part of the public sector investment, and it needs to work as a network, not just I'm sitting here or David's sitting there as chair of particular part of the thing. We need to talk to each other.

GR: Do you have channels for expressing those views? Now, when I'm saying you, I think I mean all of you, do you have ways of making those views known in to that wider policy making circle?

DS: Well, we do, we do. I mean, so there are a number of formal and informal channels that are available around... how do you, you know, optimal return [inaudible 00:40:20], so the secondary use of public funding in various areas. And, you know, my own area within SMS we have the NHS as a major partner, and actually they're a major, kind of, value added component in to Stratified Medicine Scotland. Because Scotland, somewhat uniquely, within the Western world has a single provider, single payer, single commissioner of all health services in a way that is genuinely integrated when, say, compared with south of the border. And from the ability to then take that and understand what that means in terms of large scale longitudinal cohorts of patients which particular disease profiles, and the ability to stratify those disease profiles and align them with the science and biology that goes on within academia and within industry is a tremendous opportunity.

So I think there is, to Bob's point, we're looking at this through the lens of our own ICs and our objectives and our funding, etc., etc. But there always was this opportunity to say what does that mean in the broader context of the health of Scotland. So I think we do, we do it with formal and informal channels to influence that, and I think it's incumbent on all of us within the room to continue to pursue and make that as effective as possible.

PdL: Can I add to that? I mean, for me there's almost two levels here, there's an operational signposting, so let people know what is out there already currently available. It might be [inaudible 00:42:08] right interface, all the other bodies already do lots of good stuff, and that's a signposting thing. I think certainly a role we have placed here to saying that, okay, given our current infrastructure, if you had to design it what it would look like and how would you do it? And no doubt as part of [inaudible 00:42:24] what goes in this forum.

But as elements, as industry evolves, Scottish Funding Council evolves, and the government evolve, you need to think about how are you going to do innovation in the most effective way. And I do think there's a conversation around this, if I look where you can go for innovation from operational signposting, is there a smarter way of putting them together in some shape or form? And I think that might need a bit of further thinking of how you do that.

And also how do you leverage materiality [inaudible 00:42:51]. You know, not everything should be done in an equal way, that might be saying that you want to focus in particular parts of these industries or these initiatives. It might private sector, it might other areas, how do we drive that and be able [inaudible 00:43:00].

And I think there are some great learnings from the UK, across the UK and from other countries have done it very successfully. And I think an opportunity will present itself to advance in Scotland as well. And something we do as chairs, and saying at the end of the day, for example, with Ian very soon, around biotech, how can we leverage biotech in the oil and gas industry, and how can do it in a big way we haven't done it before? So I think there's an opportunity to share that [inaudible 00:43:23].

IS: So I'm definitely not keen on general guidance at a low level, I want to build on the bigger level. And I think where we've got some momentum, all of us, and I've lived in Switzerland, I've invested in Singapore, and Scotland as a small country, with some of the advantages David has expressed, has a real opportunity here to create a stand-out position of attractiveness in some of these technologies on a global basis. And I think we need to think about how to join up some of this a bit better. So the doors are not closed, I spent two hours in Glasgow this morning with representatives of Scottish Enterprise in an

open doorway talking about our ambitions. But we could get a lot smarter, and the Scottish government as well and the innovation.

GR: Let's keep it moving. Douglas.

DM: Good afternoon, I'm Douglas Mundie, I'm a board member of the Scottish Funding Council, I'm a member the Research and Knowledge Exchange Committee. Building on what you've just been saying, Ian, how far have your organisations reached in to the respective business sectors in building these strategies and objectives? And particularly in developing business relationships outside of Scotland, and with potential investors and customers? And should you have ambitions to reach further?

IS: Well, I'll take the segue [laughs]. So we've collaborated deeply across America, we've been to a lot of events, we've made a lot of connections. In Norway we've had exchanges with companies such as Borregaard, who are 70 years ahead of us on bio-refineries, for example. We've reached in to the Netherlands and across Europe, so that's been key. I mean, synthetic biology is moving at a vast pace at the moment and it's got an international landscape. And in some areas we're playing catch up here. So it's absolutely crucial to reach far and wide.

NL: Yes, I think for the Data Lab, I think there's a fine balance to strike in this piece between positioning for large multinational corporations and making sure that small Scottish SMEs, the large corporations of tomorrow, are getting equal footing. And it's something in my own professional life, I worked for a long time in a Scottish SME business that was then acquired by a global

multinational. So I understand the challenges first hand in sitting both side of that fence.

But from the Data Lab's perspective, I go back to, in a lot of ways Data Lab's in a very fortunate position that the data science and analytics is so high on people's agendas. In terms of international connections that's been massive for us. But it's about trying to... we've always got one eye on the local. It would be quite easy for us, I think, to be swept away in the international and travelling to Singapore, and go to Seattle and have those sorts of conversations.

It's about trying to make sure it is impactful here, and not just impactful here for the universities, but impacting here for local industry. So it's about you don't want to seem parochial, I don't think Data Lab is, but we need to balance the two. We need to balance the international with the local, and I think we're doing an okay job at that but we'll need to keep a close eye on it as we [inaudible 00:47:03].

PdL: Just from an oil and gas perspective, I mean, it's a very international business, it's all over the world so you'd expect it to be international. But our main task is to make the Innovation Centre a success here, and just [inaudible 00:47:15] operation, so I can see that their focus is to make things work here. What we have done, as I do travel [inaudible 00:47:21] I do travel to some other places, we actually have quite a lot of interest from other countries around what we're doing here in terms of our model.

Because our model is actually quite unique, so anywhere as far away as from, I was in Australia a little while ago, or in Mexico where I'm next week, there's quite an interest around how do we do it. Because the linkage between connecting industry demands to actually delivering activities to universities or

contract R&D is something quite unique, and most countries don't have it and are certainly not set up to do so.

So I do think there's a lot of leverage around what we do here, and I think certainly from where we sit is our main task is to deliver a successful outcome in the Innovation Centre.

NL: Just to support that, we've had interest as well as we've gone internationally and people in other countries saying, could we licence this model? Is this a model that we can look at, and then how can we apply it to ours? So there's definitely interest [inaudible 00:48:11] we've seen that as well.

BM: From my perspective, Hong Kong, Japan, Canada in particular. And just as Paul said, a great interest put up from Canada in terms of how you've actually got this thing looking because this sounds like a great model. Our problem with it to a large degree is actually endorsing it, we've turned down, I think there are about three return visits that they've asked [inaudible 00:48:36] that we've turned down because we just don't have the resource to actually go out and do it.

We are happy construction looking out Western Scotland and the UK though, from the point of view of when they're looking at innovation in construction there's a wealth of knowledge, particularly in the Scandinavian countries and Canada, with timber, etc. And what we want to do is not to reinvent the wheel, not do things are already getting done in our countries, we're basically trying to take that knowledge. And sometimes [inaudible 00:49:04] with part of execution and then it, sort of, breaks down.

So we're trying to take those things and find the keys through the universities and the research people in universities to unlock some of those problems, even other countries. Because they haven't had the model whereby when the

industry hits a problem, say in off-site construction, they have tried to solve those problems within the paradigm of the [inaudible 00:49:31]. Whereas in reality if you take, as we have done, if you take that problem and you go to a university and say, here is a problem, are there ways to actually overcome?

Now, don't get me wrong, you get a lot of things coming at you that you're going, right, that's never going to work in a million years. But you only need one or two things, to actually be a bit of different thinking, to be thinking outside that paradigm, and that's where enormous leverage is of the actual expertise in university.

The benefit is that the universities are different from industry. The benefit is that the culture is different in universities than it is in industry. And the relationship between the universities and the industry, making that relationship better and more cohesive is actually, sort of, an ongoing project in itself. And the longer we do that the better that relationship becomes. And that will feed through to all the things that you're talking about, internationalisation, and using university expertise in other countries which we're doing as well [inaudible 00:50:30].

SC: So very similar and very high level penetration certainly in both... and I think a very important point you made that, you know, we've got to think about the Scottish angle in this very much. A lot of the aquaculture businesses sited in Scotland, there'll be a lot of investment, a lot of resource in Scotland, are multinational business, there are SMEs and smaller Scottish businesses also operating in that area. But we've reached out to Norway, Canada and places, probably some [inaudible 00:51:04] that are a bit ahead of us in terms of technology.

But that technology then needs tweaked and adapted and modified to operate in our geography and our work conditions and our seed styles and temperatures, salinities, and all sorts of different things.

And on [inaudible 00:51:27] as far away as New Zealand, and we've actually been to Tasmania. So at this stage it's a terrific [inaudible 00:51:36] engagement, and the model that you bring it back to is different. And I think that's where the excitement is for industry.

BM: I think so. I think, I would say that in my travels on this the bit that has struck me most from the people that I've met in other countries is they're remarkably impressed at the ambition of the Innovation Centres programme. They see it as being ambitious, far reaching, quite risky, but they think it's quite a good thing that that risk has been taken, that innovation has been taken at the start to try to achieve a much better picture than anything that's gone before it has tried to achieve. And I think they've all been very, very... what to say, remarkably surprised at the level of ambition coming out of a country like Scotland. Which I think is something I'm particularly proud of, the fact that we can do that.

BD: And just at the other end of the telescope, I chair a company that's in satellite data analytics business for timber and aquaculture. And I can say that we've had considerable help in a very constructive way. We don't do any business in the UK at all, it's all international. And Neil's business has been really helpful in [inaudible 00:52:51] and also linking us in to the informatics and parallel processing facilities in Edinburgh University. So that's tangible demonstration for me at the other end of the telescope that it's been helpful.

DM: So then let's look a few years in to the future and how the relationship that you have with your businesses might evolve. Do you see them becoming equity investors within the business? Do you see them developing in to being membership fees of a club? Or is it going to be very much the same sort of relationship as you have now, but more businesses and perhaps...?

BM: Let's me jump on that one because mine is probably the most straightforward. I don't see, certainly in the short term, but I would say probably the next ten years, I don't see [inaudible 00:53:38] becoming equity partners. I think the Innovation Centre for Construction has to have its own independence because we'll dealing with a lot of IP, and the nature of that industry is a very fragmented industry, it has to be seen as an independent organisation. What we are doing, what we've started doing just now is we're in the process of putting together an advanced construction centre based just outside Glasgow. Which we've 40,000 square feet which basically will be full of bespoke equipment which doesn't exist anywhere else in the UK. We will initially offer that to industry, we won't be heavy handed about charges, etc., but eventually the aim would be that if businesses wish to come in and use the facilities we'll have a, sort of, membership fee.

But I'm particularly keen not to get in to that too early, I don't want to stifle the innovation by being too commercial at the start, I would rather get them to go in to use it. So we've got 40,000 square feet, we're budgeting on something like a couple of million pounds of revenue will come in over a period of time, which isn't enormous in an £8.6 billion industry in Scotland. But it's softly, softly with it basically to get the innovation culture down from the top five or six companies in to the, something like, 30,000-odd construction companies just in Scotland. That's part of our challenge, frankly. So certainly not equity partners from my point of view, not in the short term. JVs, there will be JVs,

but probably a membership model which will basically feed revenue in to the Innovation Centre over the [inaudible 00:55:08].

DS: I think from an SMS perspective, and of course we've talked about some of this, you know, [inaudible 00:55:16]. And I think some of this, again, goes back to the notion of having enough flexibility to accommodate and tweak and change as you see fit. But from an SMS perspective I think when you look at the... if you look today, you know, the average time to take something from clinical research in to clinical practice is about 17 years, it's a long time.

And it's a complicated, highly regulated industry. If you look at some of the promise on precision medicine it is now making that very, very much shorter because you're dealing with a much smaller cohort of patients that you ultimately have to do trials on, because you've done the stratification and identification of them much earlier in the cycle. And that's really the transition that that whole industry, the life science, healthcare is going through right now.

So we're looking at our collaborations that we're involved with, we look at them, the ones we're talking about right now versus the ones that we've done over the last couple of years. The conversations that we're having right now are significantly longer term than the initial let's see if it works projects we did a couple of years ago. And the impact that that's going to have from a global health perspective are potentially enormous, but still very significant risks associated with it.

I think, from my point of view, the ability to keep everybody at the table, which is industry through a pre-competitive consortia model through to, sort of, individual industry engagements, the relevant academics, and importantly from a Scottish perspective, the NHS, because the NHS is a huge value proposition [inaudible 00:57:10]. The ability to do that, I'd be very surprised

personally if we don't have to adopt a series of, kind of, equity joint venture related structures that spin out around those major programmes.

So I think that's an inevitability to some extent of just where that, where the market in precision medicine is and a, sort of, sensible look at where it's going over the next ten years. So from an SMS perspective, from an innovation perspective, really what do we need to do? We need to make sure that we are talking about that and that we're understanding that, and that we've got an approach to those engagements, you know, this will lead us to structure, it will lead us to governance that allows us to play in that game, as opposed to not playing that game. Because those trials and those developments around initially, sort of, precision oncology are happening right now, and will happen... well, they will happen.

You know, the solution for those challenges will be found, part of our job is to make sure that they're found in Scotland. And part of our responsibility from an SMS perspective is to make sure that we've got the appropriate relationships, structure and governance in place and balance on, sort of, freedom to operate to allow us to put in place those equity or joint venture related structures if they are appropriate. So I think it's pretty important, and I'd see it from an SMS perspective turning out that way over... certainly over the next ten years.

PdL: Can I build on my colleague's comments? Maybe slightly again from the oil and gas industry's perspective, there's somewhere in the North Sea, between 10 and 20 billion barrel [inaudible 00:59:03] that's to recover. That's \$50, that's somewhere between half a trillion and a trillion dollars' worth of revenue to go after, in my world that's a big prize to go. The vast majority will need some technology and innovation. So my answer is maybe slightly flippant [inaudible

00:59:18], I couldn't care what model this is as long as we get as much value out of the North Sea as possible.

So if it's an equity model, go for an equity model, if it's solution based model I'd go for that, whatever needs to be done to that prize for Scotland, for UK PLC, is what we go after. And that's exactly why we're actually already working, not in a few years' time, the evolutionary model of what we need to do now. We are actually already working that concept through and saying what does it need to take?

Our biggest challenge has actually been around, we need to have longevity of Innovation Centres for a lot of the reasons my colleagues have already outlined, there's no point doing projects if you can't do them. And the other thing is, despite all the challenges in our industry in at the moment we're still going to spend around £18 billion this year of [inaudible 01:00:00] expenditure to put \$3 million or \$4 million in of power storing innovation is really helpful but the scale needs to be far bigger. And that's what need to drive.

So back to your question, I'm very easy going about it the model as long it lifts the prize, [inaudible 01:00:16] materiality that is relevant for it.

NL: I think that the view from the Data Lab is exactly the same, I mean, that the model we end up with, so long as we're still focused on achieving our core mission, that it's getting [inaudible 01:00:28] on data longevity and greater capability to go after it. As long as it isn't hazardous [inaudible 01:00:33]. We are looking at a variety of different models just now.

BD: And I can say it's worth saying I'm unashamedly for public sector investment to give you a leading edge in your region or your country. And we've had too much dogma around in the past, I'm not talking about grant junkies, I'm talking about investment that takes place, [inaudible 01:00:56] Houston, Harper doing

it in the United States, there's others, and that's about the most market led economy in the world. If you think over in Texas you intervene sensibly where you have to, but things have to stand on their own feet, but they're getting core funding to give them an edge to build these platforms and technologies within them. China's doing it now, that Aura thing is a big South Korean investment that's substantial government funding. So let's not kid ourselves about being purist about this.

GR: Good, okay, thanks. Alex.

AH: Hi. I'm Alex Herbert from the Higher Education Funding Council for England. You've all touched on your ambitions for your Innovation Centres, how can the Scottish government help you to reach those ambitions, for example through its current review of the skills and enterprise agencies?

BM: If you like, I'll kick off, Alex. I think the level of investment shown in Innovation Centres coming down from the government has been great. I think, from my own perspective, and not wishing to be in any way controversial, but I think that what becomes really important in this is where the ambition is so high. And bearing in mind where we are in the cycle in terms of achieving that ambition, what I think we need from the Scottish government is a resolute view that it's on the right path and then they continue to back that.

Because in my experience what's happened in the past is a strategy comes up, an innovation, or it can be anything, innovation or something else, and you go through a honeymoon period that then gets to the period of disruption. You get to the point where execution, and someone then reverses back and says, let's go back and look at the first stages, and you end up going round in circles. Now, you may comment and say, I've been doing this for 30-odd years. I think

that's really required here, and I think the foundations have been set in this programme, is have strategy to have innovation as one of the core drivers of the Scottish economy. I really, truly believe that's the case. Get the right people at chair level, at CEO level in Innovation Centres, and then drive through and not take anything as an excuse for it not actually working.

So when we've had periods of disruption and periods of difficulty, the reality is we drive through them, we don't go back and start changing the rules of the game. We basically stick by our guns that innovation is one of the biggest things that can change the nature of this country for the next 20, 50, 100 years. The reason other countries haven't been as successful as I think they could be, they've been a lot more successful than us, when they've hit the disruption parts they have gone back and they've diluted their ambitions.

So it may be a very simplistic answer is having that resolute view that innovation is at the core of this, and nothing but nothing is going to stop the Scottish government driving that agenda through.

NL: I mean, to build on that from my perspective I think that's about being systematic about it. You know, and to be honest, what you see here is a snapshot in time of what innovation looked like. So if I was, kind of, being critical I would say, you know, yes, it was a programme, the Innovation Centres is a programme that is highly ambitious and lots of people should have interest in it from around the world. But this is what innovation looked like in all our industries two years ago, maybe three years ago, I would argue. Now, in some industries that's not a long time ago, in my industry, in the tech industry, that's a lifetime ago. So my question would be, and it's really picking up on this thing about saying innovation is [inaudible 01:04:40] economy tending to drive that. So what's next? Where are the other Innovation Centres coming from? I mean, technology is moving all time, particularly digital technology, so yes, science

great. I'm looking behind me and I don't see very much coming up, and that's a worry for me. So if I was pushing the government to do more I'd say, yes, okay, you've made a good start, but don't pat yourself too hard on the back, let's keep at it. You know, let's keep the bit between our teeth and keep driving forward.

PdL: If I can have a wish list of a number of things, you asked the question of the things the government can do, for me I would like to see a strategic investment in innovation and technology. And as I said, the Innovation Centres is long way towards that. I would make the investment long term, I think five years is great, but actually five years doesn't work. I heard a cycle already that you're working on in the stratified medicine which is well over ten years, my business is well over ten years, so those things [inaudible 01:05:35].

My third thing would be around materiality, I would say if you do it do it in the material skill of the industry you operate in, some might be bigger, some might be small. My fourth point would be probably around cross-sector, you know, I am generally interested around, I work in an industry which is hugely capital intensive, but what we don't do, we're not very good at creating new ideas. What we can we do with robotics, what we can do with digital technology, what Neil's doing is absolutely incredible, and we need to apply that.

And my last one, and the thing that we do extraordinarily well in Scotland because we're relatively small is leverage capabilities. I mean, all the things across sectors, we do really good things around that. So that would be my five-point wish list, and that's something that we haven't got.

IS: To be quick, I support all of those points.

[Laughter]

BD: There is one other aspect to this, I think we've had a bit of a history in Scotland of looking to the government to do things in the private sector. I think it's for the government, the commitment, the flexibility that you've heard about, but also expect more from business in the way it organises itself in Scotland to do things together. I think we have a responsibility, give us the space, give us the prime pump funding, and then expect us to deliver. And I think that's what you're getting from the commitment and the people who are involved in Innovation Centres so far. So I wouldn't have such a high priority for that question, it's an important one to ask, but it's about commitment and flexibility. After that we have to respond.

SC: I mean, [inaudible 01:07:03] primary role really is to share the risk of, share and encourage the risk of investment in research certainly in our sector. But I think we've also got to be big enough along the way that if we can't get, you know, demonstrable value back for industry and therefore back in the Scottish economy, then we've got to say it's not working and find something else that does work. And I think as long as we have industry driving that and the right levels of engagement, that will be self-fulfilling and industry will make that decision.

BM: I have to maybe add one thing [inaudible 01:04:47] I should have mentioned beforehand, is my wish list from the government, I've, sort of, banged on at this with the various things I'm involved in, is to encourage joined up thinking between the various initiatives. So, you know, we have Scotland Can Do, we have Innovation Scotland Forum, which I'm involved in both, we have

Interface, which is a different area from this, but you have Developing Young Workforce.

So I was banging on the other day to someone else about getting innovation in to the Developing Young Workforce programme. Where we're actually taking innovation back to the final years at school in order that when people leave school innovation is already something in their mind, and that carries on forward in to university. So I think there's an enormous opportunity because innovation is such a catch-all, there's enormous opportunity to basically join up all the lines, join the dots, such that the sum becomes more than actually the parts.

AH: Yes. I mean, taking that point that leads directly on to the next question. I mean, we recognise that the landscape is very busy for innovation in Scotland, would it help if that was simplified? And in simplifying that would you see an opportunity to expand the role of the Innovation Centres in that landscape?

BM: Well, I think, I mean, I'll go first, I think... I don't think it's necessarily a bad thing, [inaudible 01:09:07] said there the innovation landscape is quite busy. I think there's a lot of people who give their time free because they believe it's the right thing to do, be it in Interface or be it in this thing here. I think what's the key to thing is having this strategic umbrella over you to make sure that all the different parts of it are complementary and don't actually push against each other.

As long as you've got relevant things fitting together to service industry, that sometimes what can happen is it can become, not because of any reason that it ever wanted to be that way, but they can have reasons for their own existence, as opposed to not looking in to industry and saying, is this actually what industry wants?

So some of the innovation things which the government has put a lot of money in to, it should go to industry, and I'm sure for most people around the table they will say, what is that? I don't know what that is. So having this innovation umbrella and then pulling things under that umbrella, such that you get complementarity, is that the word, and you get basically things fit together well. To me that's the government leveraging its investment to make sure it's getting the best return.

SC: You may say it's a busy scenery and, you know, I've been site of which in comparisons to some of these other sectors it's pretty small, pretty contained, pretty incestuous actually. But I've been around the sector for all of my career, more or less, and the [inaudible 01:10:40] model is only one that's really interested me, my organisation, the people that we represent as an SME.

And I would venture it's the only one that's actually got the rest of the industry and the key players in that industry motivated, putting their time in to try and make this work. So for all it may be busy, we need to back the right horses in this and that, again, that needs to be about deliverables, or the people that are putting their time and energy in will just go and do something else.

So that, certainly for our sector, you know, to take Bob's point that continued core funding to share that initial risk and incentivise the steps in to research and the engagement [inaudible 01:11:32] absolutely as we can do.

PdL: My observation, again from my sector, I think it's a cluttered landscape and I think there's nothing wrong with that because I think it has organically grown over time with people that really [inaudible 01:11:46] have put in to place. But I think as circumstances change sometimes you need every time refresh and say it's a cluttered landscape [inaudible 01:11:52]. And I do think it is

important that we maybe just have that thought very carefully around how we should structure the blank sheet of paper.

It cannot all be demand led, because demand led is very much in an industry focus, and industry focus on the businesses that are here now there needs to be a balance between demand led and some radical blue sky thinking as well. So I think we need to be very careful as you take things away want to put in place which is equally powerful or more powerful or more efficient. So I do think there's an opportunity to maybe just check around a bit and see if it works [inaudible 01:12:22].

DS: I think my comment on that would be I think less about what's, kind of, going on with industry on a wider innovation landscape. I think the thing that's particularly attractive on IC model is, [inaudible 01:12:39] Paul's point, is this balance between the absolute pragmatism of industry, academics and the public sector, so the collaboration in the very practical sense around particular problems or solutions that are near term.

But also the ability to participate and engage in things that are in the longer term. But doing that in a model that actually is a real model, actually people are actually writing code, building things, testing things, you know, trying to get things to work and understanding wider applicability of that. So we should, as distinct from let's have a conversation about innovation and what that means and their points and... do you know what I mean?

So I think that's really important and, you know, I think if put my SME hat on, as somebody who's, with most SMEs, with big ambition and small budget, you know, we've put a substantial amount of funding in kind in to SMS. And the reason we did that is because we believed that it was the right model, and perhaps a new model to actually engage at the start and see something all the way through to the end. So that for the industry that we're working in here it's

very much a team sport, you know, so you take, I have the system, you take academic science and you take life science industry, none of those groupings by themselves could solve those problems. We need to do it together, and that's what's so attractive.

But I think quite highly differentiated, maybe even unique about the IC models that we've, kind of, got in place here, we're saying it's active, you know, Bill's point about innovation is a bumpy road, it's not guaranteed [inaudible 01:44:44] otherwise we would have been doing it all the time. It is a bumpy road and you have to be able to power your way through some of those bumps and, sort of, hang in there for the long term.

BD: And I quite like the SE because it means there are different people who can do different things, and I don't mean in a manipulative sense. For me it's more about the example I gave earlier of the compound semi-conductor project, we haven't done, including us, I'm not pointing the finger at anybody, the people that were involved in that, the organisations, we should step back and have a look and ask ourselves what could we have done differently, since we all wanted it to happen.

So that's about flexibility of process, pace of process, and responsibility. And that's as much about culture, reorganising all the bits that are in the structures isn't necessarily going to make any difference to do that. The last refuge when you can't think of anything useful to do is reorganise.

IS: Yes. So you had a second part of the question which was about do Innovation Centres want to take on more, we certainly don't. I think the [inaudible 01:15:57] of the cluttered landscape needs to be done you, and on the basis of what's working and what isn't. And we need to maintain our focus and our,

kind of, independence, actually independent approach that what works for our industry to operate effectively.

NL: I'm going to give a slightly different view. So the reason I got involved with the Innovation Centre programme at all, and this was a difficult sell in the company I was at at the time to say, "Look, I'm going to disappear a few days a week to try and make this work." It was because we had grown exceptionally frustrated with this cluttered innovation landscape, it was so painful we switched off from it. And I think some businesses find themselves in that place, and we were a Scottish SME, just too painful to get involved. We'd rather go and make money than deal with it. And that sounds flippant, but if I put it another way, the stats don't lie about R&D in this country, the businesses are successful, but they're successful to a certain scale.

I think a simplification of the landscape would be useful. But as I've, kind of got in to it, it's not so much a strimming down and an amalgamation of things, it's actually to help the organisation understand what's there and trying to translate that. And there is some overlap, so [inaudible 01:17:21] simplified made better. But I suppose I can echo a wee bit of what Bob's saying, this is not bad really, as long as I can understand what's there. When I first came to this, and so did I think a lot of businesses are, certainly SMEs in Scotland are, it's not so much that it's messy it's that it's impenetrable, I don't understand what's there. And so help with that is useful.

To that extent Data Lab [inaudible 01:17:47] plays a part, so it does play a, kind of, conduit role there trying to make sure that, you know, the Interface man comes in here, or maybe a smart man from Scottish Enterprise there to augment the funding. So we, sort of, do play a bit of that role, and I suppose part of that comes from the fact that when we were thinking about what Data Lab was everybody who was involved in the initial bid was just massively

frustrated with that innovation landscape. So we came to solve a little bit of that. But I certainly don't want to be involved in a review of all of that and make decisions about government, please no, because I'm still waiting on money [laughs].

GR: Gentlemen, thank you very much for your time. I'd like to bring us to a close, before I do that I just want to check whether there's anything that we have not covered that you would like to bring to our attention. And you do not all need to answer. We'll go to...

BD: Yes, one thing we haven't touched on, and I don't know if it's peculiar to us but it's been a real battle in this digital engineering space that we're doing, I mean, is diversity. I'm not saying I want mandatory targets delivered, I would like some more help with it because I've got real troubles sourcing people for board, and staff for that matter as well. And I think it's a real challenge about more women, more ethnic diversity. I don't know if it reflects what's in Scotland, and you could of course throw it back to me and say, why don't you do something about it? Well, we're trying, but I think it needs, in science and engineering, more attention than it's getting.

GR: I mean, that is a very wide concern in science and engineering at lots of different levels. I'm certainly aware of many initiatives going on, and so there should be. Are you saying, maybe this is unfair, are you saying that the problem is distinct to your sector, are you saying that you're, kind of, speaking for a wider community when you make that point?

BD: I think, but the others can speak in their own, in this particular area of optoelectronics, design engineering associated with that work, it appears to be a real challenge in Scotland, yes. And I'm doing this on, you can say it's a wide problem, but if we can cut in to bits of the problem in Scotland by laying some kind of responsibility with support, that can't be a bad thing.

IS: In IBioIC we have a problem at the board level which goes back to history. But coming through the courses and in to the young companies there's quite a good diversity.

NL: Yes, we'd be in that [inaudible 01:20:47]. I mean, again, but data science, computer science is not a million miles away, and I think that's always been a problem. To answer your question though about the things that perhaps we haven't been asked, going back to a point I made earlier on. It's about my real worry, I suppose, about the Innovation Centre programme is about this systematic element to it. It feels like we've done it once, and I don't see much more happening.

And I think that, kind of, concerns me that the Innovation Centre programme was viewed as something that was important, and to some degree the government relied upon the goodwill of a lot of people to make that a reality. Something feels a bit... I'll use the word I want to use here, it feels a bit amateur, it feels a bit lucky, and I don't like that, I don't like trusting to work in these things.

The whole innovation piece for me feels too important, picking up on what Bill was saying earlier on, if we're not doing these things as a country then I fear for our long term competitiveness. I don't see enough systematic rigour, not just in monitoring this programme, but more generally. What else are we trying? What else are we doing? It feels very... it doesn't feel systematic.

GR: Yes, I'm no spokesman for the Scottish government, but in May in the First Minister told the Scottish Parliament, "We will continue and expand that approach," by which she meant the Innovation Centres. So, you know, you're only two months since the First Minister's last praise for the system. I guess the thing that I'm picking up all the way through this, I'm picking up, sort of, tension between stability and dynamism and... So I think everywhere you go there's tension.

And one of the tensions, I guess, is between making space for new Innovation Centres and giving the existing ones a long enough run before you start to contemplate exits or closures. So that, I'm afraid that just joins the long catalogue of tensions that we will chew our way through if we can get your valuable contributions into our report.

BM: My final observation, sir, would be that in terms of the breadth of the skills in the Innovation Centres, I don't think we're actually even out of kindergarten yet.

GR: I think that's right.

DS: You know, I think the truth of the matter is we have a long way to go to basically fulfil the promises. And if it was anything other than that just now, if someone was telling me something other than that I would be extremely suspect about it. It's like investing in the stock market, you pick a robust investment, you put your weight behind it, and through good times and bad you stick with it. And as long as your investment is robust enough and the

vehicle is robust enough, you will eventually get a return, but you have to stick with. If you sell your shares when the market was down, you're in trouble.

GR: And I don't think anybody's been telling us different, the challenge is knowing when it is we should review the portfolio.

PdL: Can I make one more point, sorry, which I think is for me it's quite important this one? So I've been in my industry a long time, [inaudible 01:24:22] innovation space, in this Innovation Centre work has probably been exemplary in what we've done. But what also what is equally powerful is actually what I learn from my colleagues here, I actually know nothing about the wise things they do and describe. But actually by sitting and talking to them, or my CEO speaking to their counterparts, there are things I learn and we can apply almost straight away.

And we have very much taken a completely different approach, which is very much in our history which we have taken on, is around this what can we adopt, what can we adapt, what we'll need to develop. And there's a lot of elements we can adapt straight away from stratified medicine or from other areas in our industry. This would not have happened unless we had these Innovation Centres talking to each other and doing things.

So I think actually something I want to make sure is in the forefront of what I'm thinking, it's just not about is the Innovation Centre programme working, but have we created something cross-industry leverage that didn't exist before? Now, I certainly think it's been hugely powerful, and with contacts and friends I've made here, this is the board members, but something that would have otherwise not happened in my world.

GR: I think that's a good point on which to end.

IS: I'm going to support that, but let's not create a structure to make that happen.
Let's stimulate and incentivise.

GR: Thanks, all. Thank you all very much.

END OF TRANSCRIPT

File Name SCOT GOV RW – 11 August 2016

File Details

Audio Length: 00:22:44

Number of speakers: 7

Speakers are identified by initials; where an identity is unclear, M1, M2, F1, etc. are used for unknown male/female speakers.

Notes:

Where there is an unclear word or phrase a timestamp is included e.g.: [Inaudible 01:02:03]. Ellipses (...) are used where a speaker's sentence trails off, where they are interrupted, or to indicate a change in direction in the conversation.

START OF TRANSCRIPT

GR: Good morning, Rebekah, and thank you very much for coming to see us. My name is Graeme Reid and I am chairing this review. On my right we have observers from Ekos Consultants, Scottish Enterprise and the Scottish Funding Council. Highlands and Islands Enterprise also observe most of the times. And on my left are members of the Advisory Committee that are working with me on the review. This morning's discussion is going to be recorded and we will publish the recording along with those of other sessions, at the time that we publish the report. So, Rebekah, would you mind introducing yourself for the record?

RW: Sure. So I'm Rebekah Widdowfield and I'm Head of Higher Education and Science within the Scottish Government so, in effect, I cover all things university. So, I'm by no means an expert on innovation, I'll make that very clear from the start, but obviously, I have interest in it particularly with respect to university business collaborations and engagement.

GR: Thank you. So, we're going to start with some questions from members of the Advisory Committee and then we'll just take it from there. So, Tim, would you like to start by introducing yourself?

TB: I'm Tim Bedford. I'm a member of the Scottish Funding Council Research and Knowledge Exchange Committee. So, welcome. I wonder if you could start off by summarising the Scottish Government's ambitions for the Scottish economy and the main challenges that you see to meeting those ambitions?

RW: I mean, probably the simplest is about inclusive economic growth. And I think that's actually been a consistent ambition of this government since it came into power in 2007. Sometimes the wording has changed over time from sustainable economic growth but it has been a consistent ambition around sustainable and inclusive economic growth. And I think that's probably articulated most clearly in Scotland's economic strategy and the 4 Is which no doubt most people that you've spoken to have told you about; innovation, investment, internationalisation, inclusive growth.

So, I think, since 2007, there's been a very clear statement of the government's ambitions for the economy. In terms of the challenges, again, I'm probably not best placed to go into detail, but I think some of them are structural. So, the Scottish economy is very heavily SME-based. So, that's a challenge in terms of, particularly, the capacity of small companies to innovate

and grow and this was certainly something that came up in the Growing Values Scotland task force that I was engaged with. There are, potentially, constitutional challenges in terms of limits to some of the powers that the Scottish parliament has currently. Although, obviously, some of those are being extended. So things like, for example, powers to be able to offer RND credits, tax credits and things like that.

Obviously, we work in a global context and globalisation... the competition globally will always be a challenge for any economy but I think particularly for a small economy. And I think Scotland probably has some particular challenges around the geography as well. So I can go out of Dundee and be fewer than ten miles from Dundee and not be able to get signal on my mobile phone. So we've still got some, sort of, fairly... what might now seem basic technological challenges in areas of the country which are not even that remote, as well. It's not just my provider, by the way [laughs]. It's different phones.

But there is a challenge of geography, you know, you only need to go to one of the islands and find that there's still dial-up and things like that in places as well. So, I think there are some structural challenges there.

TB: Okay, thank you. And, following on, if we consider the Innovation Centres and interface as well, how would you see those fitting into the Scottish Government's economic strategy?

RW: Well, I think it ties into a lot of the 4 Is, actually. And into universities as a whole, it's not just the innovation angle to it. But I think there's been, again, a fairly long-standing recognition of the importance of university and business engagement in terms of actually enhancing productivity and economic growth. So, enabling the harnessing and the maximising of the capacity that exists within universities, whether that's their research capacities and knowledge, or

whether it's a skills base, I think is absolutely critical to achieving those ambitions.

So, the Innovation Centres and Interface fit very much in terms of maximising university-business collaboration to harness, actually, the potential of the universities to drive innovation and business growth.

TB: Okay, thank you.

WF: Good morning. Willy Findlay here of the GlobalScot Organisation. Rebekah, ideally, how would you like to see the Innovation Centres develop over the next five to ten years? And would you like to see them absorb some of the functions of the other organisations to simplify some of the landscape around innovation?

RW: I know this is probably just as much a personal view as a government view, but I would like to see them become a focus for activity. Now, whether that necessarily means absorption, I'm not entirely clear. It might do on some levels but not in other places. But I guess what I would like them to see, and I think they've been doing this to some extent anyway, is become a hub for university/business collaboration so that actually there aren't lots of smaller scale initiatives. And to become a hub for those sorts of initiatives and supporting initiatives as well. So, I think that's very important.

What we don't want to have, and obviously the current review of skills and enterprise and things like the Downing Review south of the border, is lots of smaller scale initiatives that it's very difficult for people to see how they join up and certainly very difficult for businesses and companies to navigate their way through the system. So, actually having Innovation Centres as a hub or as

a focus for other initiatives that either exist already or that might be being developed in the future, I think is really important.

I would like to see Innovation Centres having a much clearer link to the skills agenda. I think, understandably, in the initial phases, they've tended to focus more on the research side of things. And I know there's been a question about where FE might sit within the Innovation Centres. For me, I think it's less about whether it's FE, it's more about the skills. So, for example, in some of the Innovation Centres, the work that was done to link a small number of funded post-graduate places within the Innovation Centres.

I think the more we can do things like that... so, again, looking towards some developments that are happening in the future, the development of degree-level apprenticeships... how can we make sure that they are clearly linked in with the Innovation Centres and with the key sectors of economy so that we're joining up and maximising the potential of these things together, rather than as separate initiatives.

There is a question for me and it's a question I'd rather have an answer to... is about the intersection between the Innovation Centres which are very sectorally based and geography and the place-based agenda. So, obviously, we've got the science and innovation audits which is a UK government initiative which we've been participating in. We've got a regional approach to many things including the college sector. So I think there's at least a question for me about how do we marry up the sectoral and the geographic in terms of focus.

And then there is a question about, in terms of future evolution, what is the right funding model? And I know there's always a bit of a tension or a potential tension between raising income and become self-sustaining and actually building from impact. And they're not necessarily in tension but they can be in tension. But I think, again, there is at least a question about what might the

right model be. Or models. Because the Innovation Centres are different. They have been set up differently. So there isn't necessarily a one size fits all.

But nor do I think we can assume that the state will continue to fund forever and at the same level. And actually it makes it quite risky if actually the main funder is and remains the Scottish Government. There is something about diversifying sources of income.

And if Innovation Centres are seen as something of value and of value to the business community, I would hope that, over time, we would see sources of funding coming from elsewhere. And also the capacity maybe of the Innovation Centres to leverage money from elsewhere would be quite important as well. So, again, and I'm not giving an answer in terms of how they should evolve in terms of funding models but I think there is something about... that they should do that. Even if the exact model isn't clear at this moment in time.

And then, the final thing, and this was... I'm sure you've heard this from other people, but I was struck by it when I was appearing in a presentation, some time ago now, for the construction Innovation Centre... is going beyond product innovation. To be thinking about service innovation and business process innovation. Again, I'm sure that's something that other people will have brought up. So I think there's quite a lot of potential for the Innovation Centres to build on what's already there and reach out and broaden out in different ways but to do so in a way that is coherent, in terms of joining up with other initiatives that are already happening.

WF: Okay. Having said that, you've kind of touched on the reviews that are going on at the moment. Is there something within the government's approach that could change or help make some of these ambitions realised?

RW: Well, I think that the review is instrumental to that. The review is very much about how do we make sure we've got a coherent system and how do we make sure that for the customer, in sort of broad terms, whether that be a student or be a company or a business. Actually how can they... how is it easy to navigate through this system without thinking, oh gosh... do I go there or do I go there and what does that give better than what this gives me. So the simplification of the landscape and the coherency of the landscape through that review, I think, can be important.

I mean, there's a question for me about how does the work that the Scottish Enterprise does fit with the Innovation Centres. How closely is that linked currently and how might it be linked in the future. And I hope that the review could look at those sorts of questions. But, in a way, this is a very well-timed review and the Innovation Centres... it wasn't planned. But I think you'll have some evidence from this review that I would hope that you could feed into the Skills and Enterprise review that is being done at the moment.

I guess the other thing around... that the government can do is around giving things time. It's always difficult, sometimes when there's a wish for quick wins. Or obviously, you know, when public money is going into something, there's a wish to see well, what is it delivery. You know, public money is constrained. We need to be using it to best effect. And something like Innovation Centres, you know, we appreciate that they're something where they're not going to deliver change overnight. It will take time for relationships to develop and for things to be built up. So giving initiatives like this time is the other thing that the government can do.

GR: Can I just loop back to the things you were saying about skills because I was hearing, perhaps wrongly, you drawing a distinction between further education in the round and the skills agenda. And I heard you give examples of

skills at some of the higher levels. It's been put to us that the Further Education sector should be free to participate in the Innovation Centres' initiative along with higher education. Do you have a view on that?

RW: I think that's a very positive suggestion. I mean, I think we're trying to talk much more about tertiary education rather than further and higher education. And, just to clarify my point on FE, what I was trying to say is that in engaging with FE, we should see FE as the only proper place for getting in the skills side of things. We should also see skills as including FE but not just about FE. I think sometimes skills and FE are just equated as one and the same thing. But the skills agenda needs to cut right across the wider education system.

GR: Because it occurred to me that if Innovation Centres were going to reach into innovation in some business processes, then FE might have quite a lot to contribute?

RW: Yes. And I think it builds on some work that's already going on. So the developing young work force where there's a lot of collaboration between schools, colleges and employers. Again, it's providing that coherence of the landscape as well.

GR: Okay. Thank you.

DM: Good morning Rebekah. I'm Douglas Mundie, board member of the Scottish Funding Council and member of the Research and Knowledge Exchange Committee. Taking the First Minister's 'Taking Scotland Forward' speech in the Scottish parliament lately, she said that innovation is crucial for improving productivity, which is why we're investing 120 million in Innovation Centres to

bring businesses and academics together to develop new ideas and products in some of the key growth sectors of the future. We'll continue and expand upon that approach. Should we interpret such comments as an endorsement of the Innovation Centres programme ahead of our review?

RW: I think it's a recognition of the potential that Innovation Centres have. So, back in the summer of 2014, there was a debate in parliament which was on the back of the business plans from the Innovation Centres which was recognising that potential both in terms of GVA and in jobs. So I think it's a recognition of the potential that Innovation Centres bring to the table. And it's also part of the government's wide ambitions around innovation and the recognition that university-business collaboration is essential to that. So, I think in those terms, yes, it's an endorsement of the need for university-business collaboration and the potential of Innovation Centres to help deliver that.

At the same time, you know, the proof of the pudding will be in the eating, in a sense that it will depend over time in terms of what is actually being delivered for not an insignificant level of public investment. So, an endorsement of the potential; absolutely. And I think there's a recognition that these are quite different from what we've had before and could do things that are really quite ground-breaking.

But what we'll be wanting to see and what ministers will be wanting to see over time is actually some solid evidence of what is being delivered which, again, is where this review can help to be played in terms of what's being delivered currently, what's the potential for the future and what might need to change in order to maximise that contribution.

DM: Okay. There's been some evidence and discussion about the term innovation itself and how well understood that is, particularly within business circles.

Does the Scottish Government feel that it can make concrete choices based on the current definition of innovation?

RW: I'm not sure I'm better placed to answer that question, it's probably one more for Roddy and innovation colleagues. I mean, it was something that came up in the Growing Values Scotland work as well and it has been raised with me in other contexts. So, for example, actually when we talk about innovation, does that mean science, does it mean research? So, I think there is a level of difference of view potentially of what that term means and maybe an ambiguity of what that term means. So maybe it's about having clarity of the definition rather than necessarily changing it. But, again, as I say, I'm probably not the best person to ask that question. As good a question as it is [laughs].

GR: Rebekah, could I come back to another point that you raised which is about place? We've got a network of Innovation Centres that is finite in number and each of them is connected to a hub institution and the evidence we've received suggests that they are... they're actually settling in very quickly within the hubs. But there are quite big swathes of Scotland that are a long way from an Innovation Centre. And we just wonder, realistically, how Innovation Centres are going to achieve the pan-Scotland coverage that the rhetoric suggests they should get to?

Do you have any thoughts on that either specifically in relation to Innovation Centres or in terms of the broader economic agenda for Scotland and how to bring benefit across the geography of Scotland? I mean, do we want lots more Innovation Centres so that every town with more than 50,000 people has an Innovation Centre or do we do something else?

RW: No, I mean, again there's this sort of... thinking again about the Great Value Scotland works and there's been a lot of discussion there about clustering and at what level clustering might happen and the pros and cons of clustering. I absolutely don't think it's about having an Innovation Centre in every population over a certain number. But I do think it is about thinking about the connectivity between place and economic sectors.

And, actually, the place should be with technology. It should be able to be dealt with. But I think it's just about, actually, how that intersection occurs. I mean, the current government is very live to the issue of the rural economy and, indeed, in the new government, following the election in May, we have got a cabinet secretary who has his part, in brief, in the rural economy which is the first time that we've had that. So I think there's a liveness within government to those issues.

But I think, as I say, I raised it more as a question rather than having any answers, I'm afraid. It's just, actually, how do we make sure that those agendas line up. The place-based one and the sectoral one. And how do we ensure that, for example, things like city deals are connecting with Innovation Centres either locally or more distant. But still appropriately if that's where there's a critical mass of expertise.

So it's probably not answering your question, I don't think I have an answer. But I think it's just something we need to think about as we, both North and South of the border, the Research Council as well... very much taking up a place-based approach. I'm not asking you a question [laughs].

AS: No. We don't take... we've actually specifically said that we fund excellence wherever excellence is, rather than place.

GR: Rebekah, this actually gets to the hub of this. Is the goal here to maximise Scotland's economic performance? Or is the goal to achieve equity across Scotland? Because those goals might well be in conflict. And, I want to steer from the Scottish Government... we know there's no easy answer to this, you know, we're not asking for a lovely clean solution but some sense of the way that the government balances those two objectives of national performance versus regional equity would be helpful to us as we think through the late stages of this review.

RW: I mean, I think the government wants both [laughs]. And I think that's summarised in the whole concept of inclusive economic growth. And that inclusivity is about between generations, between different parts of the country, between different types of populations. So, I think there is an ambition for both and the question of trade-offs is a really difficult one. You know, one or the other. But the ambition is certainly equity and excellence.

GR: Right, so... I know that and I've spent years in an earlier life going round this circle and I know just how challenging it is. But actually, in the real world, those two are not available simultaneously. And I'm just wondering if the enterprise and skills review is going to be faced with this impossible challenge that it can't... the government starts wanting both and it's not going to get both.

RW: But that doesn't stop... I mean, it depends on the time scale that's being looked at as well. So, if I take another example, a lot of the work I've been doing recently has been around the commission of widening access, of widening participation to university. And the government has accepted the recommendations of the commission which is for equal access to university.

Now, it's not going to happen overnight. There's some absolute challenges in the short term that are well recognised and are being well rehearsed. But the ambition is to have equal access. And that is a target to which the government is working.

And I think the inclusive economic growth will be about actually, well, if there are tensions and challenges, how can they be overcome. And, actually, how can they be dealt with. And, again, I think technology, at least in principle, has the potential to address some of that tension that might not have been possible in the past. So, for example, to enable people living in the remote rural community to participate in a sector that doesn't require them to be place based in a way it might have done. But, again, I think this is probably more a question for the Chief Economist.

[Laughter]

GR: And, Rebekah, are there any points that we have not covered that you would like to bring out in this discussion? Just before we wind up.

RW: No, I don't think so. I guess the only question I might have for you and the panel at this moment and time is, is there anything immediate that's striking you that you think we should be feeding into the review now while the work is ongoing? In terms of thinking about the questions that we should be asking as part of that review and exploring further. I mean, obviously there's a call for evidence that lots of people are contributing to but if there's things that we should be reflecting on now, it'd be really useful to get any steer on that.

GR: Right, well, we're already in touch with the Review Secretariat, because the logistics mean that our review will conclude some way after the close of the call for evidence. So, by opening up a chat it means that we can feed in those thoughts. But they'll probably be personal thoughts from me because we won't have concluded that.

RW: Right, great. Well that inter-connectedness is really important and so this review is well timed to... not planned that way but well timed in that regard.

GR: Okay. Are there any other questions from the panel? No. In which case, Rebekah, thank you very much for coming to see us. That was helpful.

RW: Thank you very much. Bye now.

END OF TRANSCRIPT

off, you would each introduce yourself for both our benefit and also for the recording. Can I just start with you, Alan?

AB: Certainly, my name is Alan Bickley, I'm the Director of the Weir Advanced Research Centre in Glasgow and I'm responsible for coordinating the relationships between the Weir Group and the universities around the World.

PM: My name is Paul McKnight and I work for Macphie of Glenbervie and I'm a Senior & Team Manager and I'm responsible for the group development projects for the ambient side of the business and I'm also responsible for all the academic and research projects that go through the business.

MC: My name is Melfort Campbell, Chairman of Imes Group, an Engineering Group in Aberdeen. I also Chair the Innovations Scotland Forum, I also Chair the Oil and Gas Industry Leadership Group and I am Board member of Scottish Enterprise and involved in a number of the universities in various different roles.

BT: I'm Bob Tooze, Senior Manager with Sasol UK based in St Andrews. I'm also Chair of Chemical Sciences Scotland and I think just for clarity I also sit on the governing board of IBioIC, so the Industrial Biotechnology Innovation Centre.

DM: Hi, I'm, Douglas McKenzie I am Chief Executive of Xanthella, which is a design company, based over in Oban. I am a member of the CEB of IBioIC and we're also a member of SEIC.

AS: Alan Sutherland, I've worked in the agriculture industry for 34 years until recently, was 9 years the MD in Marine Harbour Scotland. I was founding director of SAIC and I am currently working as an independent adviser to SAIC and running a scoping study into potential centre of excellence.

GR: Super, thank you all. Members of the group will put a few questions to you. Please don't all feel obliged to answer every question, we'll just sort of see how it goes, but we don't need six answers every time and I'm sure we'll get six answers some of the time. Alex, would you like to start?

AS: I'm Alex Saxon from Research Councils UK. How would you describe the Scottish economy in terms of business growth and productivity?

MC: I'll go. Second rate.

AS: Okay. Do you want to embellish that?

[Laughter]

MC: I thought it would be good to keep it short [laughs]. I think that we suffer from a lack of concentration on policy, on enterprise in this country. A lack of understanding about what enterprise is about at policy level. I am on the board of Scottish Enterprise and so this isn't a Scottish Enterprise view but long before I went on to the Board I was saying that Scottish Enterprise had the job of keeping enterprise going as a subterfuge. Its main political masters and bureaucrats running it are looking for economic development and the future of

this country is on its industry and the future of its industry is on enterprise. People going in and winning orders, but we have this big concentration on everything but.

BT: So I'd say from a chemical sector there's a polarisation. So there are many SMEs and even micro-SMEs and then a couple of large companies. The problem with that is for the SMEs, I think they lack the absorptive capacity sometimes for new technology to be innovative in traditional kind of sense and even the larger companies even they tend to be manufacturing operations of global companies again maybe lack the local autonomy to so I think there is an issue there.

AB: I think just building on that, the size of the larger competitors, we in the food industry have difficulties when we are smaller enterprises and we're going up against guys that are buying commodities on a significantly largely scale and to compete against their size is extremely difficult. So for us what we rely on is the name and the brand and the quality of the service. We put that together as a package. So with that whilst we're not in the significant growth, we have seen an increase our turn of work, but we've an increase in profitability as well. And I think partly that is because internally we've got new builds of characters that have come in looked at the business and they've transformed that into what it is now.

AS: Farmed salmon is currently the most valuable food export from Scotland and the people that are involved in that want to do more and the Government has got a stated aim to get production increased to 210,000 tons by 2020 and it's increasingly looking like that's not going to happen. And that's a combination of technical and biological challenges, which could be addressed by increased

R&D activity and collaboration, and also some legislative issues, which could be addressed. But there's a huge potential there that's not being realised.

MC: Could I add in, taking into account your role, one of my comments is, our research agenda has absolutely no real sensible links with our industrial agenda. And if you look at our research centres of excellence and their relevance to industry, and I chair the Oil & Gas Industry leadership group as one example. There's no link at all, there's a complete decoupling of what we're trying to push on academic and scientific research and where we should have industrial centres of excellence in oil and gas.

We've achieved those industrial centres of excellence despite of and without the academic and scientific research input. I was speaking to a UK company who had been looking for where it should base its £15 million pounds R&D budget sends it to Germany and Houston, zero to the UK because of our research and academic scientific research. We have not linked that investment in academic and scientific research with our industry based.

AB: But that's a two-way thing though isn't it, it's a responsibility of industry to pull that as well as the universities to push it. I think you're very right, there are two very different drivers in the university and in the industry. And we have to recognise that that's the way they are both set up and are both working but we can bring it together and Weir Group, I've been with them 18 months and we're drastically trying to set up strategic relationships with University of Strathclyde and a much stronger more strategic partnership.

It's hard work, not just hard work in the university, its hard work in the company as well. It's a change in people's mindset, change in the culture a change in some of the financial commitments of the company and the university. We're working at it and we'll get there but it isn't something that I

see across the Board in Scottish universities or Scottish industry, we have to work at this.

MC: I agree. Where we have an industrial strategy, I have never seen a coherent vision of where we want our industry to go and I see a lot of initiatives aimed at specific sectors but I don't see any cohesive thinking that could actually map our academic base onto that. Say to people this is the vision that we have and get everybody behind that.

AS: There's quite a lot of disparate activity in different corners of the country, and its early days with the agriculture Innovation Centre but it's making some steps towards making that happen. One of the Professors I was speaking to recently, when he heard what we are trying to do the analogy he used was just like hurling cats, you have got the whole list going on, you have got to start somewhere to try and get people working in a coherent way, synchronise our activities.

AS: So I guess you've outlined the real challenges and beginning to touch on some of the opportunities, how would you turn this around to make sure that the economy is performing better?

PM: I think I am answering your question in a slight roundabout way, I would honestly question the basic premise that there's strong link between university activity and economic growth in some ways. I read recently... I think there is growing evidence of that, I read recently a study that was 3,500 UK and European Companies and they were given 18 sources of information,

innovation, whatever you want to call it that. And I noted that in the UK universities were 14th out of 18 and in the US they were 15th.

So I think one of the opportunities is to build links between the existing industry base, business to business stuff because that's where a lot of small companies they gave from their supply chain, from their customers, from their suppliers. So I think we need to work harder at that.

MC: I declare that, I sat on the Single Knowledge Exchange Office working group, which basically came up saying we don't need Single Knowledge Exchange Office we need a sectorally led structure, which I think morphed into Innovation Centres. From my perspective and the thinking behind that when we worked that was what we need is that ability to synthesise and pull together that business and industrial need. That to me is the key on these Innovation Centres.

The Innovation Centres, in my view, have become far too academic focused and not adequately. They're very well industry led and the work, the like of which Alan is doing, is an example. Again, you go back to policy makers and such like, it's always about the academic side. What we need to do is, we need to move the conversation on to industry and what it needs and the shaping of the infrastructure to support it, part of which is our academic and scientific base.

But I still think there's also a role for making our academic and scientific base and some of what it does without disrupting what is already there and absolutely excellent and needs sustaining, nurturing and growing. But get some more of it to be relevant to our industrial priorities, as I would put them now rather than an industrial strategy as I keep on calling it.

DM: If I can just add to Bob's comment there, I think in our experience with IBioIC I think the most useful thing to us as a company has been meeting other companies.

BT: Yes, definitely.

DM: And it brought together a sector that you didn't really think existed at that point. I think the academic side is actually very secondary to the networking opportunities that appear that were there before. That might be a bit different in the agricultural issue which is a lot tighter and it's obvious what we're trying to do there as IBio is much more diffuse.

AB: I think there's another two things there as well. Whatever you said about understanding the companies, I think there's potentially a lack of understanding of companies and the crossover into industry so when you talk about oil and gas can be a significant relationship and a real [inaudible 00:13:06] of emotions as well, for example. Unfortunately, whenever you have that kind of projects what happens is, there is IP there. You then have it walked down and then it's [the licence over 00:13:15]. Whereabouts are you going to go with that?

The other thing that I find difficult as well is the access to funding and the hurdles that you have to go through to get that funding and then at the end of it how much of the funding you are actually going to get. So, from my company's perspective whenever we put our business case together and I put it forward to them that I am asking for £30,000 against our £90,000 project, then it has to be a really good case to go ahead, at the end of that project we are asking for another £200,000 to transform that into a finished product. So

whenever I put that fully on the table, they sit there and they think. well I am not going to give you, at that point in time, potentially £70,000.

AB: I think it's interesting as well to look at the differences between British universities and some from other countries. When I am looking for a research partnership with a university, if it's a British university, with one exception, I have to go and chase them, I have to go and find out what's their... Imperial College are a little different, they actually approach us. But so do American universities and German universities and Australian universities. And one from Chile.

They are making approaches to us not just to say, we have got some excellence in this, but, we would like to work with you, we can see that you're working in a field that is relevant to us, also we have access to funding. And they are providing, we have got access to millions of pounds of funding from other universities in other countries, rather than us having to go and chase it they were coming to us to offer that. They are much more aggressive, much more wanting to form a relationship.

GR: I am going to move us on but not too far.

WF: I have got a good question. Willy Findlay, I am with the GlobalScot Organisation, been in industry for a long time. If you guys were running Scotland what's the three things that you would do to improve the situation? But let's try and keep it to business and economics [laughter].

GR: So you've given us a really very eloquent description of the challenge, now you've got an opportunity. Paul, do you want to start?

PM: An immediate one came to mind where we were doing the categorisation of small, medium and large enterprises. Because whenever you look at the employee count, for example, you can have a bank that's fully automated and have a count of 15 people as opposed to Macphie that has a count of 275 people and we've just gone beyond that 250 count so it makes it even more challenging for us to get funding. Funding is reduced whenever we get to that point as well.

Next one we will be reviewing the way that the innovation comes about, make it more open innovation you mentioned about taking suppliers in, so taking them through from supply through to translator to a finished producer. And how does that all fit together? Because if you look at the previous manufacturer they don't necessarily know or understand what we do to the product to then have a further customer finish that off. And hurdles to funding, put that into the first part.

AB: I put down here that I would mandate, a proportion of all HEI activity would be dedicated to collaboration with industry, regardless. And that's something I think would push them in the right direction. I'd also review the set of the default use of the precautionary principles that seems to inhibit a lot of development in Scotland. If the regulators are not sure, they'd say, well we'd rather not do it and talking about licensing, fish farms, fracking or GM crops or whatever. It always seems to get in the way.

I know we'd rather not do that and the other thing I think that Scotland suffers from is poor infrastructure and communicate. There are plenty of parts of the country where you can't get a signal for your mobile phone or even haulage from A to B and ferries and stuff like that, badly needs to be addressed.

BT: I think it's increasingly difficult to find something different to say, but I would say I think there's a real opportunity... so we have got a very strong science base. I think we could better use that as a magnet for inward investment so the company I work for were attracted to Scotland so they're South African global originally. They came because of the research expertise in St Andrew's and we've grown and contributed so I still feel maybe we're missing a trick there.

And I think too much of the general offering is about heather and whiskey and golf and some broad stuff about how good the science base is. I think it needs to be more focused, it needs to be what companies do we want to attract, why would they come here. And make that pitch rather than a general, it's a great place to do business.

DM: I had, actually something that is slightly more novel, I'd get our young people dreaming and hungry. I think this is the week we had our Higher results come out and Advanced Highers and the number of students going to university. But very few of them have the idea that they are going to go through that and then start up their own businesses, you know, they're looking for jobs in academia or in the public service and things like, nice pension at the end of it. But not hungry enough that's something that we need to drive at that end.

The other thing, I was in Munich last week and the wealth that's obvious in a city like that and that's not unrelated to the fact that they have a major automotive manufacturing plant in BMW. And that just drives a lot of local company, we lack that in Scotland. We don't have a player of that sort of scale and I think we sort of suffer from that and the last of which is to make – something we have talked about over at least the last two decades I have been involved in this – is to make Scotland a really good place for entrepreneurs and start-ups and get things moving fast so that people when they come here they

know, hopefully from our own base as well that they know that we can do things quickly and that does mean changing the mentality in the public services which is far too risk averse.

BT: I think to reflect on something, which I mentioned there, manufacturing, the attitude that it's been at the moment that it's not going to be looked at in Scotland. But when you get a situation like, we're worried about the environmental impact of hydraulic fracking. That's a fantastic opportunity. We know there's concerns in the United States about the environmental impact but it's transformed their economy. Why don't we turn that around and instead of saying well we don't want it, why don't we say we don't want it in the current form but why don't we invest some time and effort into reducing the environmental impact of hydraulic fracking. Making it a much safer, more reliable process.

Use it in Scotland, use it in the UK then possibly if we do get it right, we can turn it around and say, look there's a massive market over there in America, they're concerned about environmental issues. Why don't we go and sell this technology that we've just developed here, sell the product to the United States. Look around the world see where else we can apply it, these... don't just say we don't want it. Let's say we don't want it but let's turn it around. Let's seize the opportunity, let's go for the growth and the economic opportunity.

GR: But what we... so you and Douglas I suppose have given us more vision; if you were running the place what would you actually do to make that happen?

AB: I'd... I would say that that is the outcome that you have got to achieve and you've got to do it both through education and academic and scientific

advancement where we're focused. There are... and there's a whole culture under there, we've got excellent businesses but it's far too small a percentage. The big long tail we have got our companies that set up, sell what they make and then end there. Companies, so that entrepreneurial dynamic of people getting out there and actually seeking market opportunities and looking for ways to develop those and exploit those and then turning back to the resources that we've got both here and elsewhere in order to help them support it.

So, the issue is not that our universities and academic and scientific institutions are not right, the issue is that our whole mental attitude and approach is we don't turn around and say you are a potential resource, shape yourself this way and it will work for me. And so, there's a massive cultural issue in there which people I think gloss over because our good businesses are so excellent. It's that percentage that we've got to change, we've got to get... go from minority of our businesses being so good to a majority.

And so I would be using the academic and educational starting at age five and so that would be the first thing. The second is I would have, we talked about industrial policy, I've have far better links and far more industry driven focus. We can't pick winners we certainly should not tie ourselves to set... sectors that we're promoting and therefore at the expense of others. What we need to be able to do is back those who are getting out there an actually promoting it and so I completely re-orientate our... as it was economic development focus to an enterprise thought and development focus.

What Scottish Enterprise do is absolutely excellent but it's the piece that when we're speaking, and that's supporting businesses day to day, interfacing with businesses and helping them manage and such like and if you speak to the policy makers they want to gloss over that and talk about the big projects where we have got the inward investment.

The third piece I would be... I would use Government procurement, SBIR, SBIR, you can't say it enough. Forget SBRI, it's a waste of time as far as I am concerned. I've done six SBIRs and if we had a programme like that, that stimulated that generative approach where you've got these hubs of organisations including universities, including companies. Even some individuals acting on their initiative, getting together as clubs in order to be able to provide innovative solutions to industrial challenges.

GR: Has everybody had a go at running the country?

MC: I guess one... do you see we've talked about being risk averse and we've talked a lot about entrepreneurship, can we educate entrepreneurs? If we are, are they created and if they are risk averse does that make it, kind of.

DM: I think it's nonsense that they're born. I think you're born with an attitude of having a go, and people turn around and we always talk about these high profile people but I am seeing... I mean, I will mention a name. I am seeing individuals in a company called Babcock's being entrepreneurial and really driving and changing that business. They're entrepreneurs and they're not made, they've got into a position where they have got some passion about what they're doing and they're going for it. So, I think what we have got to do is, we've got to educate our people with a mindset of can do.

MC: You've also got to be able to take a risk within that?

AB: I've started nine businesses, had patents and such like. And the number of times people come to me and say, well, you know, that was great, you must

have taken a huge risk on that. No I didn't. I think some people might call me an entrepreneur and I don't think I'm taking risks. I've had things go wrong and when I compare notes with some of my big company friends about how often it goes wrong for me they're horrified. But, I do what I know and I focus on what I know and so when I do something. There was one where somebody said, you have bet the farm haven't you, and I said no, because I am going to win.

BT: I think the point, correct me if I am wrong Alan, you are making though is the activity of the precautionary principle in regulatory kind of stuff.

AB: Yes.

BT: So if you go back to Mark Waldport's report that's called Managing Risk not, that sets out some of those cases there. So it's saying okay the default position can't be mm we're not sure so no. The default position should be get more evidence, think about it, can we exploit that, can we improve and export those, so certainly the students that I have contact with, there's no lack of confidence there, there's no lack of entrepreneurship. Maybe it gets beaten out of them by a system at some point. So I don't think it's in the universities that young people aren't that way. I don't think that's what we were saying about being over cautious.

DM: I think, there is evidence that risk taking is a development thing, it's psychological, but that's not what we want in our entrepreneurs, we don't want gamblers. We want people who can look at, well here's the risk/reward and make functional decisions and to make sure that they have got the

resources to be able to do that. Yes, it's difficult to say. I think the student body is becoming a little bit more entrepreneurial, there's a lot of effort going into trying to get that, there's a lot more going into schools now.

But I would say actually in S1 to S3 I would like to see a module in there that's about understanding how this all works, or how our economy works. Where does the money actually come from? Because yes, you have got to catch them early? So it's not just about getting them to think of it as running wee businesses, it's to think about how the whole things works.

PM: And also, I think it's really important isn't it, if you say you are going to set up and run a business, you are taking a risk the whole time. A lot of people that are risk averse won't do it. Entrepreneurship is about chasing opportunity. And if you know and understand the opportunity, an outsider will say that's risky and the guy who's chasing it knows it's not. And if we can talk to our youngsters and I think this is part of the sort of thing I am talking about from a cultural perspective. We say entrepreneurship is about risk then we put people off, if we say entrepreneurship is about people chasing opportunities we've got more chance of persuading them to do it.

AR: Is the celebrity entrepreneur a help or a hindrance?

PM: Hindrance.

PM: Depends.

GR: You know I can immediately think of a population of celebrity entrepreneurs from Scotland different industry sectors. Actually a pretty broad span of industry sectors but I can't tell because I am just not close enough, whether they are a help or a hindrance.

MC: I gave a series of talks and lectures to people on starting their own business and there was absolutely no question, it was very clear to me that if you talked about these high profile entrepreneurs, people were fascinated by them but they said, that's not me. But when you put in front of them people that set up a business and built it to 15 people and then sold it for £3 million pounds and such like, they would say, I am now interested. So, it's not totally negative having these high profile entrepreneurs but it's something you do not pick up and show people, just ordinary people who have done it.

DM: I think extraordinary, people who have made extraordinary developments aren't actually that useful because it was usually down to some peculiar piece of luck that's why there's not many of them. People... actually I put Tom Hunter there as a guy who actually recognises the moments of luck and he's very clear about that. And that's actually quite good because it makes people see that they could move, they are not going to build a Microsoft and it's very unlikely that anybody in Scotland is going to build something like that. But they could build something like John Hunter did and get to that, so I think the right ones can be very influential. But the superstars, no.

GR: I am going to sort of bring us to back into university space a bit more. Alex.

AH: Hi, I'm Alex Herbert from the Higher Educational Funding Council for England. The vision for the Innovation Centre programme puts the emphasis on growth from effective university business collaboration. How relevant is this vision to your business strategies?

GR: You've touched, you've gone into this territory a little bit earlier, can we just focus on it a bit more because it's so central to what Innovation Centres were created for.

MC: As I said, I was on the Single Knowledge Exchange Office work group and I was on the Scottish Funding Council's Research and Knowledge Exchange Committee. And we've had collaborations with six universities, hence the Western Australia, so around the world we've done six SBIRs and got a lot of experience in doing that. And to me the relevance of this whole programme is what we were trying to do and I think less of actually how it's gone. What we found, this was confirmed in the NCUB growing values Scotland report, that the innovation and new technology development and such like in food and drink is different from financial services, which is different from engineering. And actually might be different in engineering oil and gas from engineering in agriculture.

So, I think we were fundamentally right to say, right, what we want is that sort of sectoral funnel which is industry led. What I've found on some of the Innovation Centres and less so on others is that we constantly default back to the academic and scientific research driven piece. And it becomes a default for increasing spend on academic and scientific research instead of being that funnel for being able to synthesise what it is that a sector needs and being able to articulate that and find partners and work it.

So, it can be relevant and we're using OGIC on some stuff at the moment and another business I am involved in just tying up with one of the universities up here. But, I think what puts businesses off is every time you get into a conversation, it just goes to the academic and scientific research agenda and we need to quell that and not put it one side at all, because we need to continue to invest and develop our academic and scientific research. But we need to drive this from the demand needs of enterprise pulling on our academic and scientific base, not our academic and scientific base trying to push its ingenuity onto our businesses.

AS: I agree with most of what Melfort just said or was prospectively saying because that's a better example of getting to where he's alluding to go. The dynamic between agriculture activity and university in the context of the Innovation Centres is completely different to if you go to the university on a commercial basis and paid for services or resourced or whatever. To have a mutual interest in the outcome of a project or an activity is very, very different and it's a constant refocusing at Board level between the academic guys and the commercial guys to make sure that we're on the same page.

And I get the bit that professional academics could want to take it off in a slightly different direction but at the end of the day if you were industry participation and SAIC's example, through the 3.5 to 1 leveraging, that's where the majority of the funding is coming from. They have got a vested interest in producing something that's pragmatic, not just a peer review paper. So, if you've got strong enough participation at Board level that keeps everybody sort of in line. It works far better but it does take quite a bit of effort.

DM: I come in at the S end of SMEs and we're very inter-disciplinary, multi-disciplinary. I should say I was a former academic which makes it much easier

managing relationships when you know what actually makes the academics tick. But for us, it's very important to be able to access cutting edge research, because that's where our USPs will come from. If we can find technologies that are coming out of the science space before the big boys see them it gives us a chance to build something up.

Managing the relationships is difficult and certainly getting onto impacting the bottom line is very difficult. But I think my experience is that it's over the past 20 years, things have become much better; the universities are much more engaged in actually trying to help companies rather than just push... the academics are pushing their pet project. So think there is improvement there but a long way to go still.

AB: I would take Melfort's point and even take it a step further, my thesis would be that industry doesn't exist, it's a bunch of companies. So to say industry, university... and you've heard it here, so many different plays and I think certainly IBioIC have been pretty good trying to engage in all those needs at different levels. So it could be trained people, it could be research, it could be access to cutting edge. It could be what we've found getting to meet other companies, so I think all of those things.

And I do hear from the academic side, you know what do industry want. I would have to say, who knows. And I think that's probably exacerbated by the lack of an industrial strategy, which says the industry in Scotland does. So I think you should look at it as a bunch of companies of different sizes and different needs and even within a sector I would say. So in the chemical sector you've got micro-SMEs and you've got INEOS. I would suggest they are very different beasts who have very different needs from the academic sector.

DM: I could indulge you with a specific example. I had an interaction with Strathclyde and they actually came to me and said we have some money to spend, how would you like to spend it. And they, interestingly said it can't be spent on research because it was only 10K. Which was great because actually 5K buys you nothing in terms of research, so what else could you do. I said, so what I would like you to do is download my brain and see all the things my company might want over the next five years and then map that onto what the university could do. Which I thought was an interesting and exciting on its own.

But the Post Doc then started going around the university saying he came across a group who were working light technology in the medical arena which he then recognised might be useful to us. And we hadn't thought about that the group in the university hadn't thought about that and that allowed us to get an IUK project and it's now doing... it's a very successful project and it's now moving to a patent which will give us a USP. So that was something that almost, it's not quite serendipity, it's the fact that you get your networks actually working together and you can get good outcomes from it.

AB: I'm working at the moment between Weir and the University of Strathclyde trying to find a long term strategic relationship between the university and the company. It's hard work to be honest from both sides, because the two have got such different needs and demands. It's trying to pull them together and align the university with what industry needs and get industry to recognise that it's got to put a fair bit of resource and effort behind this.

It's not just putting money it's the commitment of senior people in the company. We're getting there, I think we are beginning to get the formulation of... defining what the relationship is, how it should work and what level the interaction should be between the university and the company. But it's a bit of

shock for both sides, it's not been an easy discussion. And it's certainly made me sit back and think about it. We helped a little bit to be fair because the head of the university is now sitting on the Weir Board. So there's some good drivers coming down to make it work. But it is getting there.

PM: Can I point out that therefore the Innovation Centre's role need to be the corporate piece of Weirs that enables that relationship to work. Because 99.5% of the businesses in Scotland are not on that scale and do not have those resources.

AB: One of the things I've been arguing for is much more emphasis not on the relationship between the academic and a company but between the university or institute and the company so that you can develop a long term relationship. Because you may find that you need an academic for say two years while you develop a piece of technology but then you want something completely different. But... so you want to be able to access all the things that go on in a university rather than go back to stage one on the snakes and ladders.

PM: Another point, we are getting considerable help from Scottish Enterprise, not in sort of big chunks of money but they're putting together, well they have put together a cohort of companies working on open innovation to try and pull in SMEs through working with larger companies. Part of it is actually making each other aware the other exists. Because although there's list of SMEs in Scotland, what they actually do is not quite so easy to ascertain and certainly Scottish Enterprise are helping considerably with trying to foster those relationships. And I would encourage other companies to get involved because it's really quite an interesting route to get in ideas that could be exploited commercially.

PM: A short answer from me is yes, the past five years we had about 18 to 16 projects that have been going on at any one time and a number of those would be what I would now class as nice to have, that was academic for the sake of being academic researchers. What we got, the output of that was publications or we got press releases, free advertising. And whatever you think about 16 to 18 projects, you may not think that's many but whenever you're an SME at that point in time, trying to manage that is a bit of beast.

Also when you look at the R&D spend for Macphie it's around about 4-5% of its annual turnover. So there's a huge amount of [inaudible 00:40:36] that goes on. There's still a huge number of projects that are still going on but we have focus steps. Instead of having the nice to haves, it's what is the business benefit. What are we actually going to get out of this. It's been a bit of a journey to get to that point to actually, do we realise what the focus is, because we just went everywhere and did it with them.

An analogy for that is whenever we went to University of Strathclyde and we sat down with academic, went through a programme of what we anticipated and envisaged for the journey and then said, by the way I have got another two people outside that want to come in and basically they knew our reputation. They knew what we were doing and he came in and it was a pitch, can we go and do another project with you.

We managed to shoot holes through because they hadn't had an industry aspect or industry [report 00:41:24] within that project. So we need to have that tie up when you bring it all together, if somebody is going to come with a pitch it's fully thought out, you have got every aspect of it. So whenever you put the paper in front of the company, it's the right company, it's the right project and the end result is going to be right for the business.

BT: My experience would be, I worked for ICI for 20 years, so I have got a kind of a history of academic collaborations. For what it is worth, my view would be it's probably the second or third project that you do together is actually the useful one. You quite often start the first one maybe doesn't go the way you expect. But you start to build a relationship, but certainly with Sasol because we're embedded in the University of St Andrew's it's definitely happened. And that's the activation energy to get over building that relationship, somehow.

GR: There are, there were several comments in that last run where I was picking up a distinction between the relationship between academics and the relationship with the university as an institution. I am just trying to understand the balance between these two, because Alan, I think you were reaching towards a relationship with the institution.

AB: That's right.

GR: And Douglas I think you were saying something similar if I understood you, yet others weren't.

MC: Actually that's to a degree remit and area that we're covering and so more likely and one, certainly we moved from one university to the next with the academic. So I think rather like we are saying on everything else, one... what's right for one is not necessarily right for the other.

GR: But I think it's helpful for us just to log that distinction because further emphasises the fact that we are not talking about a single model of

relationship here. We are talking about really quite a diverse catalogue of things.

MC: Yes, we have got two university relationships which are long term and then the others are what I'd call sort of more butterfly moving with what we need to do, when we need to do it.

GR: Can I ask of you all when you talk a relationship with a university, you are talking about a relationship that spans recruitment of graduates, access to research, use of facilities and so on. Or is it sort of focused mainly on one of these?

MC: The full breadth of that.

GR: You're going the full menu.

MC: And we're going through different phases so we'll go several years with no programme and recruitment and people think that businesses go through are innovative or not, and we have two years of innovation and then we try and actually make it pay for a bit. So, when we checked up on it we found we were investing 20% turnover in R&D, well you can't do that for very long. And so the relationships will therefore inevitably go through with different priorities and different intensities.

PM: I think all the things obviously recruitment, technology, whatever is increasingly global, so we would not say okay we will just go to this university and therefore do all, and I guess that's a challenge for us all on all sides really.

AB: I certainly agree with that, the talent is global and it must be able to take it globally but if you're an SME you have also got to be able to focus your resources. We have a specific strategy to work with Strathclyde because we felt they were actually of all the Scottish universities they were the ones that were actually most interested in working with SMEs. And also the nearest one when I get off the train and over in Queen Street. Which actually is extremely useful.

And also I think we focus too much on single projects, whereas a company, the first project we had was one we were certainly not going to deliver. I think you build a relationship and almost inevitably something happens as you go along the relationship and something new happens and it gives the company a USP that didn't exist before and it's usually not something that anybody saw when they set off on that journey.

MC: We're successful because we're a teaching company as it was then now, but I think that another aspect to think about and certainly we a number of businesses have been involved in, have started with projects reacting to immediate market opportunities. And have graduated to more for sighting and instead of looking at what's in front of you with short, your short sighted specs. You start moving, looking through a telescope and that's the key that I think we really need to capture and a role for the Innovation Centres because once you have got a company looking at these opportunities and finding resource both academic, scientific and intellectual and capability.

That allows it to take these opportunities and develop them, what those companies can then do is start actually expanding their horizons. And how do we make sure that the Innovation Centres are structured and resourced to be able to do that with business because in essence, when I said that we've got this sort of rump of excellent business and mass of not so good. That's the key to creating this large rump of excellent businesses.

GR: Melfort, I am going to take that as a move into our next question, we are trying to put a bit of structure into this, even if nobody else is.

MC: We didn't come for the structure.

[Laughter]

DM: Follow that. Thank you very much, I'm Douglas Mundie, Board Member of the Scottish Funding Council and a member of the Research and Knowledge Exchange Committee. What's your experience and perception of the Innovation Centres programme to date, is the role understood and correct from an external perception of the Innovation Centres?

PM: We've had a couple of contacts, we've had one project which was highly successful looking at sensors and that project, we're now looking to go and fund a start-up company with that one specifically, it has been very successful. And we've got a potential asset out of that, going to go and hopefully create a start-up from that.

From IBioIC we had contact where we went to [inaudible 00:48:35] to see if we would be able to do some work. We're looking at protein synthesis and unfortunately it wasn't something we could do directly but the knowledge, the experience and the guidance put us in touch with a company who we are now engaged with. Second to that, where we don't have direct involvement, or don't necessarily have what you would think of a potential relationship, we've not really had any engagement with other areas. However, looking at...

So if you take James Hutton for example, James Hutton Institute, they are involved with a barley project and they're not directly involved with the end product. What we're looking at but the involvement is of guidance of them for future, with regards to what they are going to be doing with their crops. So they had in their head, what you don't want is our high protein content within your barley because it does this, this and this. But in industry that's exactly what we want, so their involvement is actually going to be quite directional for the future of what they're doing in the research.

With the agriculture group again there could be a broader or a greater involvement with inter-industry across a different industry, different partners to be able to get some form thinking and some form of direction. We may be looking at something completely away from what we may be looking at. We didn't actually know about them until just very recently.

BT: So I would say my part of the organisation's role is to drag the rest of the organisation kicking and screaming towards the future so somehow I manage to convince the organisation industrial bio-technology could be part of that for chemical and fuels company. So IBioIC was perfect for that because there was a forum there, a group of people, companies, academics, but quite a broad group that we could rapidly get some kind of feeling about the state of the art and who the players were and so that just helped us.

And actually our first project was with another company, not a university, and only now have we started to interact with, so for us getting what was a new area there was no equivalent, we could have gone to a single university and talked to multiple academics but this felt a much more, a much more objective way of getting a feeling for a temperature of the water. So, it's been good for us.

AB: Sort of mixed response. We put a project, a couple of projects out with Oil and Gas Innovation Centre, we thought they were good projects, circulated around the universities, nil response. So it's... please go and sell this don't send out a sheet of paper, they came back with three responses, one was a standard response that you might get sent out from anybody, this is what the university departments are, nothing at all relevant to what we were doing. Two others did put something together but said of the four things we can do this, this and maybe the bottom one, but we can't do this one.

I went back to them myself and sat in front of them and said this is not what I was expecting from you, I expect that you've got the ability to do certain things now but there are certain things you can't do. What does it take for you to be able to do that, is that test equipment they haven't got? They weren't thinking ahead to respond to what... there is an objective here, we need to meet the objective, how do we do it, oh we can't do that we haven't got that piece of testing equipment. And it's been slow, far too slow, the whole relationship has taken a long time to get going, it's going now the project is going but it could have been a whole lot quicker, much slicker.

MC: I chime with that, there's been some really good... and we had presentations to the ILG Board of companies that have worked with OGIC, absolute glowing reports. But then all of them slightly silenced by somebody describing what the

Innovation Centre was about in such a way that none of us recognised it. And totally disputing that it was an industry and enterprise demand pull.

So there's, I think there's that clarity and I think this, I welcome this view has got the ability to really reinject that original clarity as to what these are about. And get it back because, because to me when there's been problems it hasn't come from the industry side it's been back of clarity amongst academics that these Innovation Centres are really there for.

DM: So is the use of the word innovation a hindrance or not?

MC: This is going to go on forever, it depends on who you're talking to, Douglas. I take a totally pragmatic view on what you're talking about innovation. I was told that all innovation comes from academics and scientists. Okay, fine, I don't think... I think you were. We published what we called a Spectrum of Innovation because when we were doing OGIC we were having such a problem that everybody in the meetings was talking about innovation, talking about something different.

So we put up a chart and whenever we had a discussion we would put that up as a slide and people would say, I am speaking from there and taking it from that perspective. And that was hugely helpful and I would commend it to you. Because we all started to understand that this a massive agenda and we all looked at it from different angles and actually if you could get an analysis of what each person in this room thought innovation meant, we'd have probably twice as many analyses than there are people.

So, I think that's something that really is too big an issue to tackle I think. Calling them Innovation Centres, getting them very much more emphasis on the fact that they are about the industry led, getting that message out to academia and so that you can bridge those sorts of issues, it's far more

important and I think that we have underdone that in what we've done with the Innovation Centres up until now. And some of the academics, and inevitably I mean that's what their background is, but we need to get away from that academic and scientific push.

AS: It's an interesting point because the comparison with the word sustainability which means different things to different people. Innovation, true innovation versus innovative problem solving, activity to real challenges that the industry sector faces and that's an interesting play of words. But whether or not the concept of Innovation Centre was properly understood without the agriculture sector, I think to begin with there was a misconception that it was simply a source of funding for whatever.

And I think people now after 22 months are beginning to understand that it's more about acting as a catalyst to make things happen. An enabling process to make organisations and activities which previously were separate within the academic setting or over here with the commercial guys. If they collaborate, something good can come of it, that's far better understood now in a relatively short period of time.

DM: I have got experience of both IBioIC and SAIC and I caution against too much generalisation that all Innovation Centres are the same. Those two organisations are very different in their scope and outlook and the way they perform. The next bit is the question about, is the role understood. No. I think certainly in IBioIC now that I sit on the CB there, we're still trying to work out what the role really is and where can we make the highest impact. So, I think there's a lot to do there and the USPs are not immediately obvious, there's a lot of other organisations that overlap things like Innovate UK or indeed SA. And if I tried to sort of project a mental image of the innovation map of what

goes on in Scotland and who's done something, it's very all over the place really as to where these organisations fit.

GR: Douglas, what is going to make it better, do we just need the passage of time, so there's more time for people to learn or does it need an intervention to sort of kick it back on track?

DM: That's interesting, as I say we have been discussing this a lot within IBioIC because of course there are is a five-year funding project that we are now coming almost to the middle of it and so we really need to understand where that organisation is going to go before next year because otherwise we are going to have to start letting people off, we have about 20 staff. So that strategic direction needs to come and there's things... obviously people have had an idea of turning it into a membership organisation, I am very sceptical about that because I don't see how you could support that on that budget

I don't have any other... Ones that are maybe... Maybe agriculture could do it, but I think the IBioIC stuff is too diffuse and what they're offering is again too vague to really engage industry in that. I think that though that there is a role, let's just talk about IBioIC, I think there's a role for leadership there in an organisation that, here's a sector that we could do something with in Scotland. We have a lot of good things, we have a good industrial base, we have a good academic base, this is something that Scotland could connect to. And I don't see where that leadership would come from if it wasn't coming from an organisation like IBioIC.

MC: I think there's an opportunity to group them and whilst they come under SFC, I would quite like to see Innovation Centres group with each of the Innovation Centres autonomous underneath not least for the reasons we found under the

GVS report. But I actually long advocated that we should massively grow Interface and put these under Interface and get a single board for an oversight to make sure that we have got a cohesive strategy for the development. This is not at least having had a bit of a site of our Innovation Centres from an international perspective travelling and meeting others.

I've already had it put to me that one country wants to do exactly that, so several Innovation Centres but under one sort of group board and for that to drive and I think what they have got fundamentally right is that it's actually getting away from government funding council and being really focused on business and universities linking up together. And I just think business and businesses linking up together, the business university I think, what they were saying it's about 30% in total sort of effort is required that would come from universities. So I think there's an opportunity within that sort of whole.

BT: I would like to maybe come back on what Douglas said. My observation of IBioIC is, it's not that it's directionless, I just think it's evolving and I think it may have been very good at that, so they've understood the industry feeds. So they're had... so originally the only projects that would be funded were academic so money could go to academics to do projects. Somebody in industry said, yes, I am interested but then the membership and there is a membership that people do pay to be part of it.

They kind of said, a bit along the point you were making before, but for small companies we also need some money to fund. And so they came together with Scottish Enterprise and the IB accelerator programme which is money for both the academic and the industrial partner. So they've done that, they've started to use, we've used, their consultancies for that. Their equipment centres. I think they have understood a need to de-risk that kind of development process. My feeling is IBioIC are revolving rather than...

MC: Can I just say I don't think they're directionless. I think there's multiple options going forward but if it's to survive as an organisation then it needs to focus a bit more than what it's doing at the moment. And I think that's what they're trying to do, they're trying to work out how they can get a sustainable models that can take them forward. And I said to them, what you want to do is really become part of the infrastructure. A bit in the way that Interface has managed to do. Interface has now become an established part of a way we do things and yet it was just a project that was set up initially but it has managed to establish a niche for itself and the worth of Interfaces is recognised widely. So, Innovation Centres need to get to that.

MC: I think Innovation Scotland, Innovation Centre Scotland has an identity with its mass, the Innovation Centres operating autonomously is something that would be a huge advantage not least from recognition and accessibility and cross learning perspective.

GR: Who would Innovation Scotland be founded by and accountable to?

MC: Sorry, the Innovation Scotland Forum is just a Forum.

GR: But this collective, is this collective, have you just created yet another public body or have you...?

MC: No, I think you need to consolidate some existing ones.

GR: Okay, the clock is running away from us as always. Tim.

TB: Tim Bedford, Scottish Funding Council for Research and Knowledge Exchange Committee. The Scottish Government is reviewing the outcomes of the Enterprise and Skills Agency from a consumer end user perspective. And I wonder what your views were of the IC programme in this context. I guess just to come back a little bit on some of the comments that were made earlier because Melfort started off talking about the number of projects that were going in a more academic direction.

We've heard also that, well we know that this is an industry led programme and Bob had said that, actually said there wasn't such thing as industry it was just a set of companies. So, I wondered if Melfort when answering this question could go into a bit more detail about where the challenge is, is this about for example the industry boards not managing the projects properly.

Is it about the fact that funding only is coming from the Scottish Funding Council and therefore is going in a particular direction or is it because for example the industry representatives there are not forming a coherent view? Because as Bob said, they're representing company interests and not a kind of broader vision and therefore in some sense if an academic is coming with a particular vision, that by default is the one that is taking over.

MC: Looking at the clock, I think Innovation Centres need to be about enterprise and that's enterprise in all organisations, but big and small and such like. The fact whether or not it is, is subject to mix messaging depending on who you are talking to, and so you get this I was speaking to somebody saying, well I have got an idea, but there's absolutely no way they would put it through the Innovation Centre and it's absolutely perfect for the Innovation Centre. So there's some mixed messaging which, I don't think it's lack of clarity on the

strategy that we set out, I think it needs singular identity, absolute clarity of purpose. And as a re-statement, regeneration of that.

So, and then the ability for those differing views to come to the fore are there because quite frankly the academics are attached to the Innovation Centre and working with it and there and the business people are quite busy and coming and going and so sometimes that other message can get a prevalence. So I don't think there's a major structural issue around it, I think there's a messaging, I think there's a cohesive identity required and that sort of clarity and more spread of the word.

TB: More widely about the Innovation Centre programme in the context of the Enterprise and Skills Review, any thoughts on that? So the Enterprise and Skills Review is the government looking at the Scottish Enterprise, Scottish Funding Council [inaudible 01:06:12] universities, Highlands and Islands Enterprise, Skills Development Scotland with a view to looking at the totality of the things that are going on there. Seeing whether that needs...

MC: We have got some bodies looking and we're looking at what they should do instead of saying, we have got a need, what's the requirement?

PM: There's clearly a limitation at the moment that the Innovation Centres can only fund research in the universities. Now IBioIC did have a go at getting SE and HIE to come and co-fund and it was a bit of a disaster. I think there needs to be a mechanism that these organisations can co-fund that needs to be worked out and I wouldn't rely on it coming from Innovation Centres, I think it has to come centrally. Very quickly, when we were setting up IBioIC and making the argument for it, it was only about the last meeting the industry people realised

there was no money in it for us. Which I think was a surprise to everybody around the table including GSK. However, we are still there.

GR: Why was that a disaster?

DM: It just didn't work; it was just the... We had a fair number of projects come and there was the hope that this would bring a lot more particularly SMEs into it. And it was just going to take too long to get the two sides. It was going through both sides and they were trying to evaluate and there were different criteria and it was just very messy.

AB: Perhaps there's a role to facilitate the move from the funding from the Innovation Centres through to Innovate UK or EU funding while it's still available. But to help push or promote projects that have started at the Innovation Centres to a larger scale. Might do the feasibility study with only, I guess, Innovation Centres but to take it further, it would help if there were some sort of facilitation then.

DM: Interestingly, there was a model for that Innovate UK funded work jointly with HIE and the project I was talking about and so it didn't guarantee you that you would get money from that but HIE put money into the Innovate UK project which allowed them to fund more projects and obviously if you were a highland project then HIE money would come into that.

MC: I think at the time when we were discussing formation of this, we had a conversation that we had government policy and politicians coming up with ideas but what we had was the Scottish Enterprise and Scottish Funding

Council working together to come up with a solution. In fact, there was suboptimal... or might have been suboptimal actually that our job was to make it optimal, it didn't really matter, structure and I think probably the facts are there that it is a Scottish Enterprise wholly engaged initiative. But I think there's some sections that this is an academic and scientific exercise.

AS: Well in the agriculture sector the contrary is true and you talked about an industry versus a group of companies and again, salmon production would be a bit special or unique, essentially it's five companies who already collaborate through SSPO and other organisations. So, they are used to being a cohesive unit and the work that has been carried out by SAIC and on behalf of the agriculture industry is certainly not university centric. It's not even based in the universities, it's field based in places like [inaudible 01:09:32]. So its slightly at odds with what I am hearing from all sectors, which is much more in keeping with the ambitions and the needs and wants of the agriculture industry.

GR: Tim, we're awfully tight on time.

TB: So just the last question then. What would you hope that the ICOU can do to enhance the programme?

AB: Get more people knowing exactly what it's about and therefore consolidation of its strategic intent which is, as I keep saying, the industrial piece, how to recreate that industrial demand pull on our academic and scientific [inaudible 01:10:10].

DM: Yes, how do you help them find though USPs which I don't think exist at the moment and how do we really embed them within the framework of what we are trying to achieve.

BT: I would say take the message back that economic growth might come from business and business stuff and encourage that as well, without getting side tracked that would be my observation. Interface is specifically about industry, academic and maybe the piece they missed there is that business to business.

AB: I think publicising, making people more aware of what the Innovation Centres could do, that would be very useful.

MC: I think it would also focus the minds of the Innovation Centres in some cases.

PM: One thing we have to do, make the effort and to go out and we need to understand our customers because a lot of business revolves around customised products so we need to go and find out what it is that they need and we want with solutions. Equally if you are able to understand the needs of the different sectors and know what potentially could be done, what the issues were, the concerns and what challenges and how we overcome those challenges.

Just everything that has been said, just summarising. If you are able to understand your customer and customer needs then you've got a better potential of going in and putting investment where it's supposed to be and where it's going to be the best benefit.

GR: Gentlemen, you have been very generous and you've been very interesting and we've got about 90 seconds left. Is there anything really pressing and really brief that we have not covered that you would like to raise before we come to a close. I think I will just whizz around the table and if we have covered all the ground then don't feel the pressure to say so, Alan?

AB: You've got eight Innovation Centres, that doesn't cover everything, there is maybe room for another, which isn't necessarily defined as to what it's going to be.

GR: You're not the first person to make that point and we have registered that but please.

PM: I think you mentioned in the cross over into industry there was a lot of things we could learn from different areas.

MC: I think to me it's two things, it's the different needs of the sectors and being absolutely clear is this about promoting and advancing our academic and scientific research or is about promoting out industries basically.

BT: Looking for that cross over between the Innovation Centres that exist, so look for projects where they could work together.

PM: I think I hope everything we have said has been as constructive criticism I'm certainly a fan of the Innovation Centres and I think we could develop these and they could be quite important to us.

GR: Great. Well, thank you very much indeed, we will close there.

END OF TRANSCRIPT