

Panel 5: Creating Global Superclusters

Moderator: Andy Teacher

Panelists:

- Dr John Baker, Abcam
- Steve Rees OBE, AstraZeneca
- Emma Frost, Chair, UK Innovation Districts Group
- Dr Angela Kukula, CEO, MedCity

ANDY TEACHER: Thank you for hanging around for the best session of the day. I'm excited to find out as well what job people in your audience are going to cook up for the science nurse, because he's obviously - but before we get - before we kind of go to the panel, it's all about politics, a couple interesting things. This is fascinating. We said the best to last today with you, with this panel, and we're going to be talking about superclusters. And I think when we were discussing this on the pre-call last week, I don't really agree what supercluster was. So I think let's start with that definition. And as we go into the debate, we'll bring in everyone's relative experience and expertise networks and how crucially the people you create. Lots of value. So, I mean, let's start with John, Doctor John Baker. Start with your views. A bit of a sceptic. I wouldn't say I'm sceptic, but different.

DR JOHN BAKER: Scales of cluster, I think we may all agree as we go down the panel, are relevant to different cadences of activity. And so I think we talked a bit in the session about hyperlocal micro clusters. But as you start to get beyond the hyperlocal, yes, it might become relevant for pools of talent on a job cycle basis. But for day to day, once you're half an hour's drive away, you might as well be global. And so, as I've noodled about supercluster, I think it becomes relevant when you're talking about really major global investment infrastructure or inward investment decisions, where you're truly in the running for choices between the UK or the east coast of the US, or Hangzhou or Singapore. I struggle with how a supercluster, and that then isn't Oxford versus Cambridge versus Newcastle, in my opinion. Otherwise you find yourself, I think, struggling to see how you're relevant beyond.

ANDY TEACHER: But your business, having been acquired by Danaher, has now part of a huge super club. And that in itself must bring some internal challenges.

DR JOHN BAKER: I think it brings enormous benefits. You do have that global reach more easily enabled. But again, that's a jump straight from benefits of real local presence in relationship to global network. It's less around that kind of mid-scale question of places that are an hour, 2 hours driving. Not to say you can't build great relationships across those sorts of distances, but the benefit of those versus a relationship that is the other side of the world.

ANDY TEACHER: Let's see, is AstraZeneca, is that a good example of super cluster?

STEVE REES: I think it is maybe just to build on a few of those points. As many people know, AstraZeneca, our UK R&D is based in Macclesfield, and Cheshire made the decision ten or so years ago now to relocate R&D into Cambridge, part of the Cambridge cluster. And when I reflect upon why we did that, the learnings that we've had since we've been there, at its core, to me, I think it really boils down to access to talent. What defines a global super cluster? Where it's a place where global talent wants to come and work. You can get the best

people in the world come and work for AstraZeneca, but also the best people in the world come and work. Organisations that provide those opportunities for collaboration and partnership. And I do think geography is incredibly important.

And I think 15-30 minutes is probably about the limit of a cluster. And it's that turning back to, we talk a lot about talent, we talk a lot about scientists and scientists and people. And we need to know - you don't want to get your kids out of school every two or three years. So a location where you can build a career, moving into multiple different jobs, multiple different roles, without having to uproot the family. And that, for me, I think it defines what the cluster, the opportunity to do that.

ANDY TEACHER: And particularly within your particular domain, which sounds amazing, but discovery sciences, surely, I mean, I think that'd be - if I was coming into your business - I'm far too stupid to - but if I was looking at being part of degrees, discovery, I'm just going to clue - why might go and watch the suite.

STEVE REES: No, that's well within my department. In my department, what we're doing - so in the national then agreement, right at the start of drug discovery, we identify new drug targets. We describe ourselves as a place for molecules abroad. We find the molecules that ultimately would come in ten or more years later. And the department of that 20% of it is in the US, 40% UK, 40% in Sweden. And we do work very successfully in the US. Our sites in Gothenburg, we're able to attract very talented scientists into Gothenburg and we work very closely with the Swedish university sector. There are only seven or so universities in Sweden. They work in a very proactive manner. But there is no doubt the ability to attract talent into our site in Cambridge. And the same will be true in our site in Boston. We're currently located 20 miles outside of Boston. We're moving into Kendall Square again for the same reason such we can attract talent, highly talented individuals, from anywhere in the world. 40% of the people working my department in Cambridge, have not been through the British education system.

We have great debate about whether that's a good thing or a bad thing, but it is a very real thing and it's a demonstration that we're able to attract the best minds. And I touched on the previous panel's comment about the visa situation. That is so good for building a more leading science base in the UK. We need to have that ability to attract best talent around the world. And, yeah, geography makes you Emma Foster.

ANDY TEACHER: So you oversee the innovation districts group in the UK. Presumably you'd argue that you don't need to be on doorstep.

EMMA FROST: I agree with the points that have been said. But I think it's probably important if we're asking ourselves what makes the super cluster. The definition is probably not all about scale, and I think that's what we're saying really matters. But maybe what makes the super cluster is more about the impacts and the outcomes that can be demonstrated. Size really isn't everything in this case. What matters is the hyper connectivity. And I think what we're getting at through our experience, and this is very true innovation districts as well, but that hyper connectivity is often geographically restricted, that you can intensify the depth of connectivity if you have got walkable areas, if you have got frequency of contact, if you have got really accessible public realm and mixing spots where there's these opportunities for frequent interactions.

And what all of that does, what that hyper connectivity really generates, is increased trust networks. And essentially, that's what our whole discussion is based on. It's trust networks, and they are the foundation of what can accelerate innovation and innovation investment and innovation scale up innovation activity. So trust really matters. And there is a geographical dimension to that. What we've realised over the last ten years, with the way that the innovation landscape is materialising, is the importance of place in a number of different ways. But within that, you've got two networks of trust, because there is a limiting scale factor.

So I think perhaps one of the areas of further discussion that we haven't quite got into is how you actually curate the intensive networks of trust and then connect different networks and you can scale up in size, and there's huge potential to do that across more places, as we did refer to earlier on. But we need to understand the real hyper connectivity and the dynamics in place. And one thing, as well as talented people that I draw out a bit more than we've heard earlier on today is actually the investment in those soft infrastructure assets, and they're not soft at all. The irony is they're bloody hard to do and actually make a real hard difference to the bottom line. So they're anything but soft. But investing properly in the soft infrastructure assets and the partnership networks, the teams and the resource needed to build that relationship management in places and then between places, that's a big part of what can unlock the innovation capacity in the area.

ANDY TEACHER: To Doctor Angela Kukula, you're boss of MedCity. So you have a variety of exciting stakeholders to manage across London. Is there lots of trust between them or are they all fighting each other's points?

DR ANGELA KUKULA: Mostly we collaborate with each other and it's just a very complex landscape. Everything from universities and hospitals that we talked about. I don't see it being that cutthroat. I mean, of course there's competition for talent in universities and companies and competition for grants and things, but actually most of what we do is about bringing people together and getting them to collaborate with each other. And actually, in some ways that's kind of what a super cluster is to me, it's about bringing all of those people together such that we can compete with the rest of the world.

So you need to have all of those key factors, the universities, the hospitals, real estate investors, all of that at scale density, so that you have the people that can move around and not worry if they want to change jobs, but they need to be talking to each other and they need to be collaborating with each other. And actually, if we are being cutthroat and fighting, then we're never going to be able to see the cluster.

ANDY TEACHER: I mean, it's interesting because, I mean, Steve made the point with AstraZeneca's base in Gothenburg that because of Sweden's size, they do have to go - there isn't - do you think Steve recently, if that model was adopted in the UK, didn't you better off?

STEVE REES: Gosh, that's a good question. The Swedish model, maybe just go to that in a little more detail. So Sweden has a set of seven universities, and the funding model is such that a sector in the specific expertise tends to be built in one university or another. It's not replicated across multiple universities. Universities that act to force the universities to collaborate, for those who know, is also very collaborative culture, which also helps, that gives them the power of scale. Relatively small country, a relatively small university base, gives them the power of scale, such as they can compete at the world level, otherwise I don't

see that level of cooperation across. I do see a lot more competition for funding and that I think is a misoptimization.

DR JOHN BAKER: But I think that's a really interesting question to explore. Science is 18 scientists represented, as in some sold lots and allowed petting in nearby. But the teams around scientific discovery are large and ever larger and ever more. Genomics revolution probably kicked off to some extent, major global consortium, but if you look now at a lot of papers, they're not pure biologists necessarily doing a single tendon, they are studying deep tech, machine learning, biology, cell biology, macro biology.

But you know, this idea that you've got single discovery, disciplinary small teams, suddenly brilliance is less and less true. And so that agility to network and collaborate across organisations will become completely network collaboration, partnership. No one person ever contributed to Skelton Networking. Collaboration is critical. Yet we have around 2000 partnerships around the globe. Around about 15% of them are in Cambridge and they're in Cambridge because of the locality and the ease of delivering those collaborations. And, you know, to give you an act of trust, I think that interesting point, it's about trust, it's about networks and it's about building those over the long term.

We have collaborations in Cambridge, I'll give you two examples very quickly. We have a collaboration, we have AstraZeneca scientists working in the buildings of the Milner Institute, which is the University of Cambridge building, in a single laboratory where half the funding and half the people work for Cancer Research UK, half work for AstraZeneca, they all work the same lab coats, they all look exactly the same. You wouldn't know there's two organisations or three organisations, including the university, but by collaborating together, we can bring the strengths of each to their scientific forms.

Funny example, if I may, we'll go back to Covid times, but it illustrates the trust in the Paris network. So back in the day to Covid, I was tasked with delivering a company testing centre and we built that test centre. This was the PCR testing that we all got to know and not necessarily love, and that was in partnership with the university and it was in partnership with GSK. We built a centre that could do 30,000 tests a day about a month. And that really exemplified the power of collaboration. What really exemplified the power of the network was the Cambridge pantomime. So this could only have worked in a city like Cambridge.

So we got a call on about the 15 December 2020 from the director of the Cambridge Arts Theatre. In essence, the story was, I've got a problem I can't put on my pantomime because the guy, the government wants me to test my people on a daily basis and I can only go ahead if they don't have Covid. I said, okay, well, leave it with me. Within 2 hours we had got the infrastructure established whereby every member of that cast was tested on a database. They said we could go ahead. And again, that's just the network, the locality, all of that happened in Cambridge, destroyable when we all went to tier four about three days later. But at least there were two or three episodes of shows of the Pantomime before it all fell apart. And it's your trust. And now the pantomime continues. So that was one of my red claims to fail. My rescue became a.

ANDY TEACHER: What should the metrics of success be? Few of them. I mean, people in the proxy world, they gather about place making. What would you say, some of the metrics of good players, because I guess in the science world, particularly if you're a listed company, is going to come down to success. And when you install marketing and products that sort of

really matters other than health outcomes, what can people that you look at as measures of whether that's working?

EMMA FROST: Yeah, that's helpful. And I think a good start point is that it isn't an either question. You can generate those scientific outcomes and you can also return value to a whole place. So as a group, the UK Innovation Centre group has just spent about nine months working through this question of how do we measure the value innovation districts and how do we do that in a more holistic way, and how do we understand the value that we're turning to the communities in which they're embedded. And the short answer is, it's not simple as you might expect, but we've got to get better at having a range of blend of indicators and across three big buckets. So innovation economics, you know, kind of the main economy drivers that you were just pointing to, but place environmental drivers and people skills drivers and people benefit drivers.

So what's experienced on the ground by residents, by visitors, by the people who own the place and make the place. So we've come up with an impact framework that's still in data form and we're testing it through our trial members to see how easy it is to use, how easy it is to understand how easy it is to make informed decisions based on the evidence that's coming back when you run these tests or run this analysis every twelve months or more. But what we're really trying to understand is, have we got the right 21 to 41 different indicators? Do they tell us what we need to know about not just the number of jobs but actually the type of jobs and how stable those jobs are and how many of them are within the knowledge economy and what skills base do you need for those jobs so that it's not the crude measures that we tend to be used to. When you talk about innovation metrics, it's much more nuanced.

ANDY TEACHER: What crude measure?

STEVE REES: What's not crude number of jobs.

EMMA FROST: That's a crude measure. You know, you're just looking at quite a narrow definition of value. It doesn't really tell you about even if they're jobs in particular. Often we don't even measure that, to be honest. We just look at number of jobs. So it is really crude. So you do need to understand the different categories and how long that job's been existed. Is it definitely a new job or is it actually just been transferred? You know, there's all sorts of more nuanced questions that we need to be able to read. One of the things that we've been talking about with DCMS, as they've done a cluster mapping tool this year, which many of you will be familiar with, is basically looking at co-location and where new types of industries are across the UK. Very useful first step to get a read on where these businesses face and different typologies of businesses in the frontier economy.

What it doesn't tell us and what we're not very good at measuring is the interaction and the partnership activity levels between different organisations and between different institutions. So we talked a lot throughout the conference today about the need for academic, private, public sector and community sectors to work better together and that is happening. But we don't often measure that and there's a really good phrase, you know, treasure what you measure, because actually if you can measure it tends to count in more ways than one. So we do need to start developing these metrics that allow us to have a better read on how are organisations of different types, different sizes, different sectors, interfacing and working together. And we don't do that. So there isn't an easy single metric to do that.

But I think the next stage is to look at a blend of indicators that start to suggest, you know, how many different partners have been on this bid. What's the different level of risk investment that's gone in? What's