HOUSE OF LORDS

Communications and Digital Committee

Corrected oral evidence: A creative future

Tuesday 18 October 2022

3.30 pm

Watch the meeting

Members present: Baroness Stowell of Beeston (The Chair); Baroness Bull; Baroness Featherstone; Lord Foster of Bath; Lord Griffiths of Burry Port; Lord Hall of Birkenhead; Baroness Harding of Winscombe; Lord Lipsey; Baroness Rebuck; Lord Vaizey of Didcot; The Lord Bishop of Worcester; Lord Young of Norwood Green.

Evidence Session No. 7 Heard in Public Questions 56 - 60

Witnesses

I: Chris Michaels, Director of Digital, Communications and Technology at National Gallery; Adam Dickinson, founding partner and Development Director at Rezzil; Tom Box, Managing Director and Co-Founder at Blue Zoo Animation.

USE OF THE TRANSCRIPT

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

Examination of witnesses

Chris Michaels, Adam Dickinson and Tom Box.

Q56 **The Chair:** We are continuing with our session today. I should have said at the beginning of the first session, so my apologies to the witnesses who have just left the room, that we are broadcasting live on the internet. This is being recorded and a transcript is being taken, both of which will be available on our website.

Before I ask the panel to introduce themselves, I should just say again that this is a session where we are very keen to hear from the three of you as practitioners, both in the public and private sector. We hope you will be frank with us in talking about the obstacles you sometimes face and the opportunities you find are sometimes lost because of the world in which you operate. You are on the record, but do be as frank as you feel able to be. When you are responding to questions, please make sure you are close to the microphone; that will always be helpful. Mr Michaels, could you introduce yourself, please?

Chris Michaels: Good afternoon. It is a pleasure to be here. I am a director of digital communications and technology at the National Gallery, so not far away up the road. I am a senior visiting research fellow at King's College London and for most of the last year and a half I have been a creative industries policy and research fellow at the AHRC. Tony does not know this but, within the next three weeks, I will be leaving the National Gallery to become a founding director of a place called the Reel Store, which is the legacy project of the Coventry City of Culture and a centre for new digital creativity and digital arts.

The Chair: Okay, thank you. Mr Box?

Tom Box: I am co-founder of Blue Zoo Animation Studio, which is one of the largest animation studios in the UK. I also sit on various skills bodies to help the skills pipeline in the UK.

The Chair: Thank you very much. Mr Dickinson, you and I met at the games expo in the Attlee Suite a few weeks ago. It is a real pleasure to see you again.

Adam Dickinson: Thank you. Yes, you were incognito and asked me a lot of questions which was very cruel.

I am co-founder of a company called Rezzil which operates in about 30 different countries in terms of sports and virtual reality and XR training. Prior to that, I have worked for about 20 years in the creative industries, in particular the gaming industry for Electronic Arts and Activision.

The Chair: Thank you again, all three of you, for being here. I am going to move to Lord Vaizey.

Q57 **Lord Vaizey of Didcot:** Thanks very much. I am on the board of Tate and I am slightly desperate to disappear down a rabbit hole talking about digital museums. I promise I will not. Just to say, Chris, it is a great loss to the National Gallery that you are going but Coventry's gain, obviously.

My question is more geared toward Tom and Adam and less towards the National Gallery, but I am sure Chris will find a way to come in on it. The question is, what is your problem? So consider this a therapy session. Tom, Blue Zoo were very influential in getting the animation tax credit through Government about five or six years ago. Adam, you are ticking lots of boxes: sports, virtual reality, and so on. If you were in another country, the US for example, would you both be 10 times bigger? Is there anything you think holds you back by being based in the UK in terms of access to capital, access to skills, credibility with venture capitalists, distribution, things like that?

Tom Box: From a skills perspective it is very tricky in the UK because we were reliant on mainland Europe for talent in our creative industries, which has now led to a point where we are having to turn work down because we just cannot get enough people of the right calibre to do the work that we are being asked to do. Which is incredibly frustrating. To get around that, we are having to look at things like setting up studios in Europe, for instance.

In terms of whether it would be easier in the US or not, the US has, by definition, a much higher population, which makes it easier to access the audiences. Because of that large audience there is more money in the system and that makes it a little trickier in the UK where everything is smaller, so harder to scale.

Adam Dickinson: Globally, companies like Meta are paying up to eight times what a salary in the UK would be. Because of people working from home, that is the salary cap, as essentially anyone could be anywhere. The disparity between what a salary for a programmer used to be in the north of England and in London has vanished completely. Globally, there is one salary for these people.

We are on the precipice at the moment. One of the biggest potential areas for scope is where we are working in XR sport and technology; a low estimate is that it could be a trillion-dollar industry. The way we play, look at, and interact with sport and entertainment is changing completely. Listening to the witnesses earlier, the common thing missing in all of this is time. The time is not there to get to this point, because if someone is waiting for a VC to make a three-month, six-month, nine-month decision, someone will overtake them because these markets are moving so fast. Someone will see what they have first done and, if they are waiting to do an onerous legal process and they have to give their own warranties, they are going to miss out. We are not moving in five and 10-year cycles. We are moving in six-month cycles as a maximum. When you have companies that are at a yearly R&D, which everyone touched on before, how do we operate in that? Can we shorten that?

I welcome your frankness in asking what the wish list is so we can get to these points more quickly.

Lord Vaizey of Didcot: Yes, that is what we want to get to. No one else will ask any other questions after this.

Adam Dickinson: For a start-up or scale-up business, essentially the biggest costs at the moment are heating and light. Companies like Sony in Liverpool and Amazon, who have empty floors, are not struggling. Why are we not creating a greenhouse environment for all our talent that sits within these spaces? They are not going to cost us any more money but will benefit those companies and create more jobs. Why can we not have those spaces? Why can we not also look at the R&D and benefits? At Rezzil, we have to spend big money on marketing to compete with US companies, not just spend on the programmers and innovation, but none of that can be claimed back; that is a loss cost.

Working traditionally through the cycles in the gaming industry, we are moving out of the indie area in the metaverse and moving into the Triple A area, which means the budgets are going up. You cannot operate with teams of four or five, you need to operate with teams of 30, then 60. The cost and value of the big players like Disney and Meta was touched upon earlier. Rezzil are working on a global level with the NFL, half the Premier League, the NBA, Adidas and Meta, yet we saw one company do something substandard to anything we can create in this country and raise $50 million within two weeks.

Something needs to change in terms of VC policy where they are asking for so many warranties. The US, which again everyone touched on earlier, will look at and invest in potential. At the moment, there is still a traditional look at the EBITDA and where these companies are going. These companies and their equity are subsequently going to erode because of the length of time it takes, which means the founders that are looking to support them, certainly at the current time, are going to take a big offer to sell to a Meta.

Meta are buying up companies for $100 million, and that was a team of four people. We can look at what is happening with the bigger teams, but we need to realise the potential in these markets. If, as a country, we move quickly, we can retain that talent. We do have the talent, but we need to not be negligent and think it is a right. Our country is a creative industry but we need to push that talent and move fast if we want to capture some of that money.

Lord Vaizey of Didcot: It is almost impossible to know what the Government can do to help you because, as you say, if you are based in the US, in California, you are much more likely to get the cheque for $50 million, even if you are not as good.

Adam Dickinson: Exactly. By locality. We cannot create a Silicon Valley overnight, but what we can do is create a culture. We started in an office with six people and you had to go through three floors. If we had been in a kind of greenhouse floor in an Amazon or Sony building where people were coming in, we would have been infinitely investible from that day forward because of the perception of it. We need to be looking at how we can create these mentor spaces and how we can make the bigger companies that benefit pay back and help the smaller ones grow.

Lord Vaizey of Didcot: Chris, you were in a start-up before, do you have any reflections?

The Chair: Just before you respond to that, I would like to say to all of you and my colleagues around the table: it will be quite helpful for you to lay out now what you see as the problems, because we have questions coming later where we can discuss how we might address some of these issues.

Lord Vaizey of Didcot: We have to pace ourselves.

Chris Michaels: I will lay it out in that context that, if we look at it from a cultural sector point of view, and we may pull back to the creative industries more generally, there is a very significant window of risk about to open up. When I joined the cultural sector in 2014, given the effects of the 2008 crash and the ongoing funding cuts that came with it, there was low innovation in arts and culture in this country—no question about it. This has started to open up and accelerate over the last eight years, partly stimulated by brilliant government funding initiatives like the Creative Industries Clusters Programme, which have given arts organisations across the country the chance to do things they have never done before, and partly by an influx of talent into many of those organisations and an embrace of opportunities of social media, extended reality, et cetera. There is a risk of that going away in the next couple of years. On one side, you have incredible cost pressures on cultural organisations such as heating old buildings like this one, which is very painful and expensive, inflationary pressures, and potential cuts coming in the next government budget. Those cost pressures risk closing that window of innovation again. If some of that government support in external funding goes away, you take away the gains of the last 10 years, and that is the risk for us.

Internationally, we are now in a very strong place. Lord Vaizey is right, we can always be better than we are. Across major arts organisations here like the RSC, hopefully in the National Gallery, and others, there has been brilliant work done to take things forward, but that goes away if the money goes away; if you cannot afford to do it, R&D innovation investment will go away. We must somehow keep that cultural loss there because, of course, the public organisations will sustain through this period. They are brilliantly resilient in and of themselves, but what they can do is draw back and stop innovating and stop doing new things.

This is a particular moment where the private sector is intervening in arts and culture in ways that it has not done before. New markets like NFTs have depended on access to arts and culture in a way that has, frankly, probably not happened since the 18th century. They are kind of coming on to our lawn with big ideas like the "Van Gogh Exhibition: The Immersive Experience", or whatever those things may be, with opportunity and pull for audiences. If we do not allow the cultural sector to compete and participate in that in the next five to 10 years, the damage could be substantial. Again, there is an emerging window of risk that is not here yet, but could come within the next six to 12 months.

The Chair: Lord Vaizey?

Lord Vaizey of Didcot: I have finished now. I got the hint you wanted me to finish.

The Chair: No, there are some important points being raised here which we will want to come back to and explore in more detail. It was not that I was asking you to finish; I did not want us to suddenly go on to solutions before we had identified the risks.

Mr Box, what we are doing at this point is identifying the real challenges that could stand in the way of our creative and cultural sectors actually surviving and thriving in the way we want them to in the future. Is there anything else you wanted to lay out at this point?

Tom Box: I would just add that, unlike America, our culture is a little more cautious with what we do and this is a detriment to creating innovative new businesses. We need to encourage more innovation and experimentation.

The Chair: We will come back to some of the specifics that Mr Dickinson has raised, particularly around practical things like creative hubs and VC policies and so on. Let us move on to Baroness Bull.

Q58 **Baroness Bull:** Thank you. My question is primarily directed at Chris, but I will come to both of you too.

My question is about how new technologies might be used to improve the financial sustainability of big, publicly funded institutions, which is why I am primarily going to Chris. I want to pick up on what you were saying because it brings to mind a sort of a theme of mine I often think and speak about. There is a perception that big organisations are better placed to innovate because they have access to resources and networks of knowhow, but very often there is an organisational constraint. There are cultural constraints. Long-term planning can be a constraint. As you say, just heating and lighting a massive, burdensome building can be a constraint. It is often the smaller organisations that can be fleet of foot and take those risks because, of course, they do not have access to the same resources.

I appreciate things have moved on since, but from about 1980 to 2012 I had the experience of working in a big, publicly funded organisation, and it seemed to me that the tech innovations were very effective at increasing reach—live streaming and cinema relays, for example—but they were much, much harder to monetise. As somebody who is currently working in this space, I am really interested to hear how much you think big, publicly funded institutions can look to new technologies to be part of solving the financial sustainability challenge.

Chris Michaels: We must look at the right place of what we mean by technology change for those institutions and organisations. Often, when we talk about the opportunity in technology, it is about what the audience sees. The fundamental transformation of cultural organisations is really about the ability to collect, gather and use audience data in meaningful ways.

As Lord Vaizey said, I came from running a start-up. When I ran a start-up, we made mobile apps and we could see what everyone who downloaded those apps did. When I came to the British Museum, which is an astonishing place, with the best will in the world, we did not know anything about any of the 6 million people who came through the door, and that gap was enormous. That is the first gap I have really worked on, to try and close. At the simplest level, again, the journey of the last 10 years has made these things better because CRM systems, data analysis and audience insight have become part of the culture of many of our arts organisations now, whether it is the big ones that have their own function and capability there, or small ones which use agglomerated services in some way. We are actually, genuinely, pretty good at that. The leadership of those organisations have learnt a historic lesson that it is not just the art that matters, equally it is the audience that matters. In hearing the museum and cultural organisation directors talk, they now talk as much about audiences as they do about the art on the walls. Frankly, that is a historic change; that is your core layer for that.

New technology opportunities remain quite difficult to monetise in some of those circumstances, because the challenges of what you do with that content mean that you pass on some of the opportunities. To give a simple example, the National Gallery has not made a big Van Gogh immersive show like various French, German and Russian companies have done because, in a lot of ways, to do so would compromise some of the things we care about when we talk about art. We own five Van Gogh paintings and, because you cannot just get all the stuff for free on the internet, we have a limited range of choice from which to make content. There are just institutional opportunities from that.

Over the time I have been at the National Gallery, we have done things which are paid for, as new digital, and things which are about reach, as you say. All of the ones that were about reach have been more successful than the ones which have been purely about trying to generate commercial income. Critically, because we have made the move from knowing very little about our audiences to getting lots of ticketing data and audience insight data, we are much more commercially stable than we were when I joined. That has been accelerated by the pandemic; having to have ticketing for those two years meant we collected data on millions of people and could then market and promote to them in much better ways than before. We are, again, much tighter. I would not underestimate the technology transformation that has gone on, but the big public uses of technology in that transformation is still a slightly open question.

Baroness Bull: You talked about the pandemic as being a transformation in how you gathered data and perhaps used it. The 2018 *Culture is Digital* report said 80% of cultural organisations were "data shy—they have the lowest classification of data readiness". I cannot ask you to speak for the entire sector, but would you say the impact of the pandemic was broader than just on the National Gallery?

Chris Michaels: Of course. For a two-year period, everybody had to do tickets to get people through the door. Everyone who came in contact with arts and culture in this country was put on a database somewhere. It still leaves millions of people who are not on a database, but that basic transactional act has made a mammoth transformative difference. It has not always been an easy argument to sustain that that is worth it, certainly from a commercial value. Put aside public value questions for a second, from a commercial-value side that is absolute life-blood to a lot of organisations.

Baroness Bull: Do you think the organisations have upskilled to use the data, or is it just sitting there in a big pot?

Chris Michaels: The majority of them have but I am sure there is a lot of unexploited value in there. At the gallery, and everywhere else, there is more you can do with it, but there have been some fundamentals learnt about how to learn and take insight from that. That will not go away. Once it is in your culture, you can do much more with it than you could before.

Baroness Bull: One of the issues we have discussed is the lack of digital skills, capacity, and infrastructure in big organisations. Often, these are kind of project-based and they sit on the side. They are funded differently and are often staffed by freelancers. The skills come in, but the skills go out and it does not really change the baseline skills of the organisation. Is that still a problem? Chris, if you could answer that first then perhaps, Tom, you can say something about whether you recognise that from where you are sitting.

Chris Michaels: I am in a uniquely fortunate position to have been through five years at the gallery and, before that, three years at the British Museum, which were in investment mode into this area, and have tried to lead that kind of responsibly to build digital and technology teams of size and quality. Of course, that is not always the case elsewhere. As colleagues have said, the pressure on wages to support those skills will get much harder in the next few years. We are already seeing it; I have lost two entire data and insight teams in the last 12 months because they get nabbed by someone else with 20 grand of extra wages to pay them almost as soon they come through the door. That will continue. It is a long-term problem but we must look into more converged skills—things like Unreal Engine that I am sure you have talked about in this context—that are so important to the future of creativity. That is not just us, that is everybody using that. Day rates go up and that level of investability becomes hard. Again, those are looming problems for the future. Some of the ways I have tried to do things by insourcing things and trying to build teams in the organisations becomes very hard to do in some contexts.

Tom Box: It is not my area of expertise at all, but I think there is a question of why publicly funded bodies should be utilising the new technologies that are not necessarily commercially viable in the private sector. It is a case of whether it is a good thing and trying to mimic the private sector and look for the strengths of what is happening there, versus being free to actually innovate in purposeful ways, to really push things forward in ways that might not be viable in the private sector. There is a lot of collaboration that can be done to experiment, to innovate, but in open ways that facilitate everyone rather than just trying to rebuild versions of things that exist in the private sector to then put their content on. We have seen this with the BBC, for example, where it has been fighting from all angles to exist in the modern world when there has been so much competition from Netflix and YouTube. If you see it through that lens, the BBC should be a public service content creator, rather than a broadcaster in the old sense, with a remit of just trying to get that content seen on as many platforms as possible in ways that are not necessarily overtly commercial, but really needed. With all these platforms, there is a race to just get as many eyeballs as possible. That is not necessarily what audiences need, it is just what feeds their dopamine levels as quickly as possible. There is a very dangerous kind of balance there to be chasing big audiences rather than just building things for the right purpose from a technological perspective.

Baroness Bull: I am not sure one would perhaps say something like the National Gallery was chasing eyeballs in the same way as a broadcaster or whatever.

Tom Box: But if you are just looking at data alone.

Adam Dickinson: Similarly to Tom, I used to run an animation company. We used that and did a lot of initiatives such as our world war projects for the BBC, BAFTA-level, quality products, which commercially may not have been viable products. My only comment from working with organisations like the BBC is that too much is thrown away.

To your comment with the project work, a lot of staff are hired in, but they do not wring the towel on technologies they may have created.

Baroness Bull: Why is that?

Adam Dickinson: That is very difficult to answer. One of the things said to me was it is almost like road work where that budget for the council must be spent that year, and then they start again for the next year. In 2016 we created, probably, a world-leading technology in interactive video with them. We encouraged them to use it for "Holby City" and "EastEnders", to use and commercialise it, to use their "Doctor Who" licences, but it was basically, "That project is finished now. We are moving on to that project." For me, it was frustrating.

The other key things we could see were the RFQs going on, and a lot of the RFQs and the red tape to go through for those projects meant they were not getting the best developers. Rather than getting someone very nimble and very good, like Tom or smaller developers, who would innovate, they were getting an agency that could afford the time to spend on an RFQ.

For us, from the private sector, it is about maximising your effort on screen, or on the page, and then not moving on until every bit of value has been pushed through. There are some fantastic initiatives out there, but things could be done better or more efficiently.

Baroness Bull: If I may?

The Chair: We have a couple of supplementary questions.

Baroness Bull: I will be quick. In a big institution like the BBC, that could be the problem. For something like the National Gallery, which is big for the cultural sector, but a much smaller organisation, I suspect perhaps the problem might be that, although these things are seen as peripheral in some ways to what the organisation does—so there is a risk it happens on the side—it is applauded and loved, but then it goes away and people retreat into core business. Or am I characterising that wrongly?

Chris Michaels: It is where cultural organisations, as Tom said, need to agglomerate and come together. To give you a practical example, as part of the Creative Industries Clusters Programme we have built an augmented reality app called Story Features. It is a brilliant AR app for kids at the gallery, but we can only use it once and they have no secondary application for it. The point of them is being able to push them into multiple other museums and say, "You have done this piece of work now. It is a fantastic thing, kids love it. Go and get other people to sign up and do it", because that is ultimately, in a way, the public role; to shove them into multiple applications rather than one-offs, because otherwise that project culture does take place. Of course, in a single, small to medium-sized organisation—and no cultural organisation is really large in any sense—you can only do a lot of things once because there is only one place you can use it, but finding multiple reapplications is always the thing. That has been a big challenge in the cultural sector. The network effect of how to get reuse and collaboration across multiple places is what has held back a lot of this stuff from proper adoption.

The Chair: Okay, thank you. I think that has pre-empted one supplementary anyway. Lord Lipsey?

Lord Lipsey: Chris, to take us back a way—there has been a stream of questions since—I did not fully get what you were saying about data. You said everybody had to have a ticket and that gave you lots of data. How does it give you lots of data? What is it and how is it useful to you?

Chris Michaels: From 1824 through to 2020, no one ever had to have a ticket to come to the National Gallery, unless they were going to an exhibition. From March or July, or whatever it was, in 2020, you had to book a ticket online to come in; it was a requirement of law. To do that, all you had to do was give us your email address—nothing more than that—but, of course, that email address is an access point to further engagement. From that email address comes an email that asks you to give us more permissions to market to you. From that, you start to build a narrative, if you like, of someone's engagement with you that, over time, gives you a progressive understanding of what types of shows they want to come to, when they come, whether you could make them into members, whether they want to sign up for an education seminar online.

That gradual, enriching understanding of your audience and what they want from you has never been present before, over 190 years, in a place like the National Gallery. It is not complex data. It is nothing compared to the 400 fields that Meta, or whoever, collect about you every time you go onto Facebook. It is really simple stuff, but just that patterned understanding of who you are, where you are, gives you the chance to build content—a slightly unfortunate word when you are talking about culture—over time that is more meaningful to audiences.

Lord Lipsey: That is hugely illuminating. Thank you.

The Chair: Thank you. Just before I move on, can I check with Lord Hall about the supplementary that we discussed? Are you satisfied that has been answered?

Lord Hall of Birkenhead: Chris, I think you are completely right about one use for something; you have to share it round. Would you say that one of the take-outs of your time in the National Gallery, and the British Museum before that, would be that there should be more collaboration around common vehicles, common ways of doing things, and, if so, what form should that take? Should it be prompted by the Government, by the Arts Council, or should it be prompted by organisations themselves?

Chris Michaels: The simple truth is absolutely, there should be more collaboration and that could be at any and all layers of how culture intersects with technology; common technology like infrastructure, common ticketing platforms, better understanding of data—and some of that exists—or consumer-facing products; streaming video; augmented reality. Take your pick of what they could be, but some kind of co-ordinated understanding. As I said, the challenge is really that these are lots of small organisations. The National Gallery is one of the big ones, but it is only 300 people and it is not a big organisation by any means. Then, of course, there are lots of micro-organisations underneath it. I do not think it is entirely the Government's role to push, but of course the Government creates the context for it. That can absolutely be fulfilled through private business. Working with this is not an insubstantial sector from an economic point of view, but it does need a co-ordination, which by the nature of arm’s-length bodies, has always proven difficult to do. And not just arm’s-length bodies. The Arts Council does not really have that kind of strategic role, but it is an arm’s-length funder. Again, where and how you give co-ordinated access to an amazing sector that really wants to do stuff remains an open problem.

The Chair: Thank you. We will come back later to a bit more on what we need from the Government and industry bodies and so on, but we are now going to move to Baroness Featherstone to drill down a bit further and make sure we have a proper understanding of some of the challenges being faced that have already been touched on.

Q59 **Baroness Featherstone:** The question was, “What wider challenges do you foresee over the next five to 10 years that would affect the business environment?” We did dive into this a bit at the beginning, and skills shortages come up over and over again, but there are other things like retention of talent—which you have touched on—access to finance, knowhow and how to support scaling. A number of submissions we have had mentioned these and our relationship with the EU. I would like to hear what the challenges and issues are that are wider, but I would also like you to venture what you think the solutions are to those issues. Adam, can we start with you?

Adam Dickinson: Sure. There is a kind of loop that you answer into straight away. So many things are intertwined in terms of what an investor is looking for: he wants to know that the IP is solid; they want to know whether the team is correct; whether it is a globally scalable product. Working through those, how can you guarantee that you are going to retain that team?

The Chair: How can you what, sorry?

Adam Dickinson: How you can guarantee that you can retain the team. When we are doing a pitch deck and saying, "We would like investment, here is our team X, Y, Z, here are our products. Here is where it can go to," we are laying it out very simply. We need to be able to guarantee that what we are asking for, in terms of investment, is not only enough to scale that product but to also retain the team, because you are taking a snapshot in time. If we are taking a snapshot in time of two years, but then the salaries have gone up three times, how do we do that? In the private sector, everything comes down to funding and the speed of funding to get us to scale. A conversation which you think will be three months with an investor, or a group of investors, will then turn into six months, nine months, 12 months. Personally, I would like to see some regulation where they have to get off the pot after a certain time. They cannot ask for too many onerous warranties. You are looking at founders that are basically giving personal warranties for companies. Is that right? It is very scary, where you are looking at the multiples.

How can we then affect the other end of what makes it cheaper to run that business and to potentially scale it? Can we give bigger breaks over the first crucial two to three years where that company is going to survive or not? Can we increase R&D tax benefits for those companies, or in terms of that sector? Right now, these areas of massive growth, as our colleagues said earlier, are long tail. They will be loss-making for four to five years before they are immensely profitable, except maybe in the fintech sector. In the creative sector, there is a reason why, traditionally in the games industry, programmers were paid more than artists. It is not that they were valued more, it is simply because you can claim their salaries for R&D whereas you cannot claim the artists' salaries.

Can we look at those kinds of things which have not been looked at? You cannot have science and arts existing without each other in our world where we are trying to create. You have to have an outward-facing product. Can we radically look at that? Traditionally, a company would sponsor a wing or something of a gallery or museum, but we should be pushing them to provide game engines, technologies, technological teams to support our arts industries and the reuse of technology, as Chris was talking about, because they have the technology which they can easily provide.

Baroness Featherstone: Who is they?

Adam Dickinson: A company such as Amazon. Amazon could provide everything that Chris would need in terms of scaling for AWS.

Baroness Featherstone: What is the lever that would make them do that?

Adam Dickinson: They benefit from being in our creative culture. They are sucking up a lot of our talent. Their company is coming into the country, they are getting the benefit and shopping around, and then they are getting the talent and increasing those salaries. It is that Catch-22. Because we are trying to compete with these companies, it might be a simplistic approach. Recently, knowing I was going to be on the panel, I visited a few different game studios around the north-west and I have seen empty floors, empty spaces, in fantastic world-class facilities; places where we could nurture and grow.

Baroness Featherstone: Have you had any conversation or liaison with someone like Amazon with these kinds of suggestions?

Adam Dickinson: This is why we are here.

The Chair: Mr Dickinson is expecting us to do this.

Baroness Featherstone: I understand that. I just wondered if there had been any pre—

Adam Dickinson: During the pandemic, we were primarily working with professional sports teams—Manchester United and Manchester City—and our access got cut completely. We had to innovate and accelerate our plans to bring to Meta Quest and launch on Meta Quest Pro, otherwise we would not have survived. Now we operate in a B2B and a B2C business, and we operate globally.

I am a creative, but I have had to learn a lot of accountancy and tax. We did a kind of deal with KPMG which is probably the biggest firm we have pushed personally on that, but that was off our own back. They had an Emerging Giants programme, which I think was about $16,000 to participate in. We said, "How about we place our R&D tax claim with you instead?" As part of that, we have better information on American tax, how to operate in the States and how to look at term sheets better. These are the kind of things which we can affect, and we can lift that knowledge to bring our entrepreneurs to the table, to be better equipped to get a better deal, to stay in the country longer, to not sell out and end up in the US where everything exists.

Tom Box: It is a good question, but it is almost impossible to answer merely because anyone who says they know what will happen from a technology perspective in the next 10 years does not know. There are many people who claim they do know, which creates a lot of smoke and mirrors from a lot of the topics that have been talked about already—from NFTs and hype cycles that marketers are trying to peddle as the next big thing. I do not believe people will ever be wearing headsets when they get home every day, no matter what certain companies need to tell their shareholders. Initially, technology falls into two areas: content creation technology and content delivery technology. Creative businesses need to make the content and then reach people with that content, and the two are very different.

From the content creations point of view, technology has moved at an immense pace, not only with AI and things we have already discussed, but in the more boring project management triangle of costs, quality and speed. It has sped up immensely which has helped businesses but, critically, has also allowed access to the technology and allowed creators and young creators to create things that would never have been able to be made 10 years ago without requiring millions of pounds. In turn, this has done amazing things for social mobility and inclusion. This year, I have been running the young animator of the year competition, in which 16-year-olds have created content that matches Hollywood films. There is an amazing amount of talent out there who may not know that those opportunities exist.

With content delivery, the trend has changed over the last 50 years when we had one or two TV channels and a very fixed audience. This has now become fragmented to almost an infinite amount of channels which continues to grow and, ironically, this makes it harder and harder for creatives to reach their audiences. This means you need a lot more skills in creative entrepreneurship in terms of how to stand out in a very noisy world, and this goes into the data side of it. We are an animation studio but now we have someone dedicated to looking at the data of the YouTube analytics to try to reach the audiences and cut through that noise.

The challenges are a continuing trend, trying to bat off a lot of the shiny unicorns that people are trying to find a use for, but ultimately, it does come down to technical skills and the creative skills of utilising those technologies to encourage all those content creators to be entrepreneurs. Critically, the UK is in very good stead because the UK is fantastic at making that human craft—how humans interact and connect with the content; something AI cannot do. AI cannot tell stories and build worlds that people want to be in, and that is where the UK leads.

Baroness Featherstone: Are you saying there is not enough talent coming through or, if there is, it comes through and then it gets stolen?

Tom Box: There is not enough awareness of the developing careers from a school level. We need to put an enormous amount of work into careers advice in schools. For example, it is fantastic that Python is taught in the national curriculum because it is teaching children programming in ways that are really used in the modern world. However, when I have asked school children what they use Python for, they have said, "Oh, my teacher told us it is for building websites." They do not seem to know that the films they have been to see at the weekend, whether it is "Star Wars" or Marvel, have used Python at the back-end to create all the visual effects on that film. Until we can bridge those gaps, we are in this cycle of not having the—

Baroness Featherstone: Are you saying that within the educational establishment, there is a lack of knowledge of what needs to be taught to actually connect children to what they are learning?

Tom Box: There is an immense lack of knowledge in how to connect what they are learning to what they are doing in their home lives. If they understood the connection, it would get them super enthusiastic with their learning and massively change the numbers coming through the system because, at the end of the day, it is a numbers game in the talent pipeline.

Baroness Featherstone: Chris, what about your wider challenges?

Chris Michaels: I am going to take my National Gallery hat off and put my UKRI-AHRC hat on for a minute. I have been building the business case, with a great team, over the last year for a project called CoSTAR which has recently been signed off by Treasury for a £76 million investment into the future of the creative industries. At the heart of that is an idea that this country's strength in creativity and technology needs support and that means thinking about what the future looks like.

When we first wrote the pitch for CoSTAR, I explained that it must be the MIT Media Lab of the 21st century and it has to be here rather than over in Boston. We must take that opportunity seriously. We cannot be America in this because of the scale of those large-scale global technology media businesses but, where we can be different from America, is by being a slightly neutral actor looking at both what they do and beyond what they do and trying to sketch out, understand and react to what might happen. The one massive risk of what has been said is that we just accept that an Amazon, Meta, Apple-driven universe is the only version of the future there is and attach ourselves to that as a parasitic function. Of course, everyone who has looked at waves of technology disruption knows that, however big those organisations seem, something can come along and change the circumstances radically around them.

If we look purely at the technology environment of the next three, five, 10, 15 years, the advances in things like AI are so remorselessly rapid it is possible that new businesses will emerge from wherever they emerge and of whatever scale, and become disruptive to that. A project like CoSTAR means we can think about the future in a co-ordinated way and respond to it. But let us not car-wagon to particular versions of what the global business environment looks like, because we have to keep focusing on the capability for our own strengths rather than making sure we are just reinforcing a massive strength that sits elsewhere. There is a tough balance between those two.

Baroness Featherstone: There will be two other guys in the garage somewhere doing something.

Lord Griffiths of Burry Port: I have a quick question, but I do not want to distract from the thrust of what we have been doing. Shortage of skills and creativity content has been talked about in terms of developing more and more ingenious uses of technology and so on. I am a Luddite, and, for me, it is all about people having ideas, people's interactions, people's conversations, creating something out of nothing in terms of the issues we face in our ordinary everyday lives, and being creative with the raw material, as it were, that stands behind all the other clever stuff you have been helping me to understand this afternoon. I currently have a lot to do with a particular university which has just decided to shut its humanities departments down, for example. Is that not a basketful of skills to set alongside the technological and commercial ones that we really must not neglect at any cost?

Tom Box: That adds to what I was saying about how the UK is at the front of the world in terms of creating amazing content—whether it be TV adverts, movies, theatre—and that is about human connection, which all comes from the arts. The arts have been really pushed to the back of the queue in the current education system which is very dangerous because, if that continues, that will really disrupt where the UK currently is.

Chris Michaels: I will give you a very simple example of why the humanities are so important. If any of you have wasted many hours playing with any of those new AI image generators where you write some sentences and it makes a picture from everything it has learnt from the internet, think about the actual participating there: writing a short, brief statement that asks for a piece of creative work to be done. That is fundamentally a humanities skill, not a science and technology skill, and the better the work that comes from it—however we measure "better"—depends on the more interesting the ideas that are put in. For many people's encounter with very advanced technology creativity, actually they need no technology skills at all. That technology has gone somewhere else already. But the ability to ask and think interesting thoughts in the first place, the super hard stuff, has to be done to put it in in the first place. There always has to be a plea for the role of humanities education as they intersect with hard science and technology.

Lord Young of Norwood Green: We need to think about STEAM rather than STEM. It was obvious that we needed the arts and humanities rather than purely getting fixated on STEM. We led the world, and probably still do, on animation—Aardman et cetera—so we know we can do it, but I was just thinking about skills. You ought to be able to have enough imagination to contact these. We know there are thousands of millions of youngsters out there who are experimenting with gaming. They have the imagination and the ability, and you have to connect with them. When that has been done and a team has been formed, I think the next challenge for you is retention. Retention has become a whole new business in itself. What does the National Gallery do about the people you have who could go elsewhere and might get a bit more, but you can give them a whole range of opportunities and challenges that they may not get somewhere else? You have some very special offerings also, Adam.

Adam Dickinson: We are tackling it in a very unique way. Obviously, we operate in a sports area, but we have encouraged the teams to grow their own ideas into the team. They get all our facilities and knowledge to create their own unique games which we can then release. A brilliant example of how that works is we are hiring people from different areas than we used to. We hired someone that was working on a virtual reality stroke recovery project. He then went straight into working on football analysis product but, as we worked with him, we developed a concussion recovery protocol which was off a splinter shoot of what he was doing. He has got ownership of that, so that is how we can give people ownership. We can keep them, but ultimately, in our business, we have to remain commercially competitive as we are doing that. We still have to make those projects pay, but it does not mean that we are not seeing that people want flex if they are getting the variance. It is not all about the money.

Q60 **The Chair:** What would you like to see from the Government or industry bodies in terms of response to these challenges? From what you have already said, I think we are clear about the need for arts as well as technical learning in education. If there is something specific that you wanted to identify in that, then we are happy to hear it.

It would be quite interesting if there is anything more you would like to say about the R&D tax breaks. I thought the point that was made about the inequity between the science and arts is something which is worth us just being clear that we really understand. The regulation around warranties is one that is worth exploring a little more because I am not sure we have properly crystallised what you would like to see or what you might propose in there. If there is anything else as well, this is your moment to get out your shopping list although, I am afraid, we are not the people who are able to go into the storeroom and deliver all that you ask.

Lord Vaizey of Didcot: We might be next week!

The Chair: It would be helpful to understand what it is you would see as the right way to tackle some of these issues.

Adam Dickinson: Addressing the R&D and the disparity between the disciplines: we have technical programmers, we have programmer staff. As an example of what might go on, we might have an artist that is creating 3D models of all the football boots, the shapes, the posts which our programmers will then use to correct all the physics in use. Those two people might be sitting next to each other; they cannot exist without each other to create that product, but one of their salaries will be wholly available to be R&D-able and the other person’s will not. It is as simple as that. We are trying to create a complete product.

The Chair: I understand. Does anybody want to say anything else on R&D tax reliefs before we move on?

Tom Box: The innovation tax reliefs are all centred around tech patents, and, in the creative industries, it is not about patents because you cannot patent a style or a creative concept, a visual concept. We would like to see more inclusion from the initiatives that are open to the tech industries. For example, the Patent Box initiative which we, as an animation studio, cannot access to facilitate our ideation and exploitation of ideas. We would also like to see more funds available for content creation, especially in children's TV, which is struggling. For example, we had the Young Audiences Content Fund from the BFI, which has now closed, and we used to have European funds that were successful in getting our shows seeded and then sold into places like Netflix. There is a lot of investment that can help springboard and bring money into the country for export.

The animation tax reliefs have been game changing, creating thousands of jobs. As a side part of the EU situation, we were limited to 80% spend of expenditure when we were in the EU, but the rules still say we can only claim up to 80%. If we were able to increase that to 100%, we would be lot more competitive and be able to compete on a world stage.

The Chair: There is potentially a Brexit dividend there we are not taking advantage of which is always a good point to push.

Chris Michaels: To me, the point about R&D in innovation and the creative industries is, from a policy point of view, that the work has been done. In 2015, OECD adopted a broadened idea of what innovation means and since then, the work Nesta have done and the R&D creative industries survey of 2020 showed exactly where the unacknowledged and un-recoupable innovations that Adam, Tom and others do takes place. The information and data are there. If that can be transferred into government policy, suddenly 1%, 2% of spend in organisations like mine, cultural organisations and others around the country, suddenly becomes incentivised to go into that space. I have probably been spending 1% to 2% of the National Gallery’s budget on things that you would qualify as innovation in R&D over the last five years, multiple millions of pounds. Not one single part of it has been subject to R&D tax relief in any form.

If you can scale that up across this sector, you will solve the problem I said at the start, which is that in the years ahead you may see a diminishment and retreat from doing that. The National Gallery runs amazing exhibitions in large part because it can claim exhibition tax relief, which makes them financially viable to do. You will unlock a new way of innovation in culture and more broadly across the creative industries by enabling that R&D definition to come through in policies. There is a huge opportunity here at the moment of what I think is extreme in risk.

Adam Dickinson: I have been trying to think about this in the following way. My company is five years old. If we could have had a gradient and a scale to enhance and accelerate at the start, we could have moved quicker and been more nimble. Tom, if you were just starting off in your first year and there was an enhanced mode of R&D you would probably have been riskier and more innovative in that first year and been able to grow the team more quickly and, ultimately, speed is the key.

The Chair: Incentives to keep moving. On the investment side and on the warranties, just explain that a little bit more.

Adam Dickinson: There may be something out there in terms of legislation, but in the last five years and about 300 investment meetings or demos that we have gone through, we are quite lucky we have some high-net-worth people, some private equity from footballers like Gary Neville and Vincent Kompany, which added extra value. However, when we sat down with VCs, it was almost like you started the conversation again every time. There was no formality, it was as if you had to start every process over again.

The Chair: You mean you have no credentials to show them?

Adam Dickinson: It is not just the credentials. There is no format on how to approach it. To get a new mortgage deal, every bank has to go by a certain set of rules. Essentially, founders and companies are asked to commit their future to those people, but they can pretty much make their own rules up about what they want in that investment agreement. The time to go through all these terms is so onerous, especially if you are not legally minded. You have to then sit down and spend on each one of these people. If there was a template or some rules that they have to abide to, it would speed the whole process up fantastically.

The Chair: Is there a difference in this country to the experiences you have with American VCs?

Adam Dickinson: It is a much more simplified process, and they are not asking for the same kind of onerous rules. There are always exceptions to the rule, and I do not want to paint everyone with the same brush, but it has been an experience of myself and other company founders that it takes way too long, which is difficult as everything is about speed in this market.

The Chair: On your proposals around sharing spaces, hubs, that sort of thing, I think all that is an interesting idea. Are you part of any sort of business representative bodies? Is there a place where you are able to take some of these ideas which is not just to the Government but actually to other kind of groups that might facilitate that?

Adam Dickinson: We are a member of Ukie, and I am a full member of BAFTA as well so we discuss this when we can. With regard to Chris's point, I am not suggesting that we kowtow to these companies and we follow through them. What we should be doing is almost taxing them to help us promote our own talent, not in terms of the word "tax" but their facilities. They have world-class facilities, like their building, and in the meantime, companies like us are paying additional tax to import their headsets, the technologies, graphics cards, anything.

Tom Box: There is the apprenticeship levy that all companies pay into, which is a huge source of funding that could be used in terms of the skills pipeline. Since it started, £3 billion of that levy has gone back into the general taxation pot and has not been used in skills, so there is money sitting there that could be used to help solve a lot of these problems.

The Chair: Is there anything else you have not raised with us that you wanted to use this opportunity to raise? I do not want you to leave here feeling you have a burning need to share something with us that you have not done so.

Tom Box: We need to look at the skills pipeline, especially the technical skills pipeline, because a lot of it has been done in talking to large companies and there has been a particular thread in all these evidence statements regarding how much the industry is small SMEs in the creative industry. I feel like a lot of the skills pipeline has not been developed with them in mind, so it is a bottleneck that just does not move at the moment because they have been designed for enterprise, not small businesses and there is very little enterprise creative companies.

Adam Dickinson: The reason I am here today is because we connected at the Westminster games event. Ultimately, we need to put ourselves in the shop window more. I went to Gamescom in Germany to show what we were doing and find out what other people were doing, and it was the first time in three years as it has fallen by the wayside in the last few years. We need to fire up some of the initiatives to show people how good we are.

The Chair: Obviously, we have met before and talked, and I would not want to showcase you at the expense of anybody else on the panel, but it was fascinating for me to be able to learn what was happening here in the UK through a small business like your own and the opportunities that were there perhaps not being able to be realised just because of the way in which we are not aware or not always providing the facilities.

Chris Michaels: With all of this happening in the next few years, what cannot disappear is the funding of infrastructure that the UKRI are committed to. It is absolutely critical, not just in the creative industries but much more broadly, that those investments which are being well developed and will make substantial difference to the future, whatever the changes in political tone, do not disappear. They are there to be done and they will do phenomenal things for this country. Also, therefore, that the creative industry sector does not lose sight of the value of that innovation in R&D piece. I know that UNBOXED has had its challenges, but that is the largest thing we have ever done as a country as a public demonstration of art and science coming together. Whatever else the challenge is, if we step back from the potential of creative industries as an innovator, as doing things at the intersection of creativity and technology, we really lose a lot for the future. Whatever else happens in the next few years, we have to keep momentum on that and to keep the government-led investment for it.

Lord Young of Norwood Green: On levy transfer, there were a lot of obstacles initially and a lot of misinformation, but you could have transferred your levy to your supply chain or even outside.

Tom Box: It is not so much about the levy transfer but that the apprenticeships are not very compatible with small businesses. They work really well for the British Gas or the NHS, for example, but for small businesses they just do not work.

The Chair: Thank you very much all three of you for being with us this afternoon and for your candour. It is very helpful. If there is anything more that you want to share, you have the option of writing to us.