

XR Stories and SIGN Podcast

Series 2, Episode 1: Virtual Production - Setting the scene

[00:00:00] **Dr. Nina Willment:** Hello, I'm Dr. Nina Willment, and you're listening to The XR Stories and Sign podcast. In this series, we delve into all things virtual production, meeting the experts, academics, and creatives working on every aspect of virtual production, or VP, you'll hear that term a lot in this podcast. In this episode, our first of this new series, we're taking it back to basics.

What is virtual production, and why should we care? To help answer this, I'm joined by Steve Jelley, an award winning producer and co-founder of Dimension Studios, and Andrew Chitty, Professor of Creative Industries at Loughborough University and Challenge Director at UKRI, the UK Government's Research and Innovation Programme.

We chatted all things virtual production. How can we define it? What are the pros? The cons? Who are the innovators in the space? And what might the future look like? I started off by asking Andrew to tell me more about his role at UKRI and his background in the creative industries.

[00:01:07] **Andrew Chitty:** So I've spent most of my career making things, digital things, starting off in telly, creating software, doing a lot of internet stuff and building businesses, and I've only transferred over really to the academic side in the last few years, and that's been because for the first time, I think, we've managed to put the creative industries onto the pitch in terms of research and development, and R&D funding, which is what UKRI does.

UKRI is essentially all the seven research councils concerned with scientific and arts and humanities, social science research, and also Innovate UK, brought together about five years ago now. And for a long time, I think that though the creative industries has been recognised as a very large, exciting, dynamic, important sector of the UK economy, maybe 20 years, 25 years nearly since that's been the case, it's only very recently that people have started to think about its needs from a point of view of R&D and that, just like other technology intensive areas, like the life sciences, biotech, engineering, the creative industries are also not just heavy users of technology, but also contributors to research.

So what I've been doing for the last five years is really managing a series of programs that for the first time are trying to inject R&D funding into the creative industries explicitly. So one was Creative Clusters, of which XR stories is one. Place-based partnerships for R&D and the creative industries.

And then the other was the Audience of the Future challenge, which was specifically about XR technology, so gets us into virtual production. And the thing that I'm doing at the moment is establishing an infrastructure of a group of four labs called CoStar, which are specifically about facilities for R&D for the next wave of virtual production, which is something we'll go on to talk about.

[00:03:04] **Dr. Nina Willment:** Thanks Andrew. And it's really great to see that recognition being developed, particularly in R&D and the creative industries, and the

coming together of sort of academia and business in that R&D process. So Steve, it'd be really great to hear more about your role at Dimension and also your experiences with technologies such as virtual production.

[00:03:22] **Steve Jelley:** Sure. Well, I also make stuff like Andrew, and Dimension is a company that with Simon Windsor and Callum McMillan, we co-founded about eight years ago, based in the UK. And initially we worked using real-time engines, games engines, like Unreal Engine to create various immersive experiences and to create virtual worlds that were photorealistic.

Then we added the capability to do virtual humans, through something called volumetric capture, which I'll come on to talk about later. We did that with some assistance from the research councils actually, from Digital Catapult who became our partner to bring that technology into the UK for the first time.

And then we got into virtual production in terms of the way we now understand it...in terms of shooting on LED walls... huge, great virtual sets, about four years ago. Our clients are all of the Hollywood studios, big brands, those kinds of people that want us to imagine whole worlds and film them.

So recent projects we've done were Disney's Pinocchio for Bob Zemeckis. We've done a lot of productions recently that I can't talk about yet because they're not out yet, but one of our big customers is Apple. And then the final thing to say is we work very closely with the visual effects industry.

We also work in partnership with DNEG, which is the other global visual effects company that's headquartered in London. Yeah, that's sort of it. We're pretty busy.

[00:04:48] **Dr. Nina Willment:** Good to hear it. You mentioned a lot of the Hollywood studios there and we have quite a lot of them to thank for VP becoming this sort of buzzword and there's a lot of excitement around it. Things like the Mandalorian. As it's developed, there's been lots of varied definitions about how we define it. So I just want to focus on that really briefly. So the virtual production glossary defines virtual production as it using technology to join the digital with the physical world in real time. It enables filmmakers to interact with the digital process in the same ways they interact with live action production.

Andrew, what do you think of that definition of virtual production and maybe how would you define it?

[00:05:25] **Andrew Chitty:** Well, I suppose one way to think about it is it's the virtualisation of a series of workflows and processes, processes that happen and parts of the components of making a scene in a film that happen virtually. I suppose it's become very, kind of, tightly defined around the film industry. So this idea of virtual production where you create... you create a virtual set rather than a real set. That's thrown up onto a large LED wall, often wraparound LED wall, to create what's called a volume. And then essentially you're filming, in camera, special effects. Effectively, you're filming actors against that wall. So that involves, I suppose, the essential elements of game engine technology, 3D visualisation, the LED wall, and the ability to integrate those so that you film the scene as live. And you

also...one of the things about virtual production I think a lot of cinematographers like, is that you get the bounce back of the lighting in the walls.

So you get a kind of live reactive light on the actors as you're filming them. So that's become the kind of type, I suppose concept of virtual production at the moment as expressed in film. But I think that does feel very much of the moment. I'd be really interested to hear how Steve thinks of this because he comes from, in a way, from a different tradition, you know, of vol cap and working with games producers as well as filmmakers.

[00:06:53] **Steve Jelley:** Yeah thanks Andrew. I think it's...I think the first thing to say about virtual production is it really isn't new. For anybody seeking to understand it, it is fundamentally the interpolation of the digital with the physical, right? And vice versa. So, you know, we're all used to the idea that to act next to a dragon in Game of Thrones, for example, you're probably on a film set somewhere acting to somebody holding a tennis ball on a stick, and then we're going to put in the dragon later, but that's still digital and physical being brought together later down the process.

And that's still virtual production in many respects because I might need to use motion capture to create various digital doubles later down the process. What's new about the virtual production that we're all talking about today is the extent to which it's real time and the actors are immersed in a virtual environment in one way or another.

I might be able to have a proxy of that dragon that is visualised on an LED wall, or not at all. It might just be visualised in the viewfinder that the director's using to figure out how to frame the shot correctly, and that's a use of virtual production that we do really frequently for lots of shows, including Disney's Pinocchio, where we shot like that for the entire film.

And it's incredibly useful to be able to say...to bring all of the performance elements together and then to film it that way. It's also worth expanding out the definition even further. This method of production, this virtual production, is applicable to how you might design a theatrical performance, how you might design a stage show. We all probably heard about ABBA Voyage, the stage show involving digital avatars.

That's not strictly speaking a virtual production because it's basically a playback of a pre-existing show, but the concept's there and I think that's sort of the boundary. That's kind of where we're all heading in terms of the research and development. It's the application of these real time processes to all of the creative industries, not just film and TV. But we're not done yet.

People haven't really entirely assimilated all of these technologies. We're just currently in the process of really using them, correctly, at the right time, all the way through the process of making a film or an immersive experience, or whatever it is we're trying to visualise. We can come back to that later in terms of how you use it.

[00:09:16] **Andrew Chitty:** I think Steve's absolutely bang on there. To emphasize, the thing that's really changed and unifies these things is real-time. And it's really

interesting at the moment with such a fast evolving field, people's job titles are changing all the time. But the one thing they seem to have consolidated around is real-time.

So that becomes the defining thing. So, for anybody who's familiar with a past version of filmmaking, which, as Steve said, is actually continuity. So green screen and then post-production. So you'd have pre-production, you'd have production, you'd have post production. All the graphics and special effects were filled in at that stage, and the actors acted against a green or blue screen.

Virtual production turns that on its head because you can do large elements of the production in real time but it also means you can make decisions much earlier in the process. So I think it's changing, say, the weight of the different elements within a production, from completing it in post production, to visualizing as much as possible in advance.

So the art department becomes in some ways, I think this is probably from talking to art directors, they see themselves as more...you know, this is potentially much more influential for the art department. And again, as Steve said, it does flow through, though not in all its forms... in different forms, particularly to live music performance at the moment - that you devise the performance in a game engine, in real time, and you combine that with live events when you play it out. Or something like Abba Voyage, which is, in some ways, a kind of metaverse production. Because if you go and see Abba Voyage, which is absolutely fantastic, where are you? Because you're not really at a gig. You're not really at a film. You're in a kind of strange metaverse space. And indeed the performers never performed what you're seeing them perform in front of you.

[00:11:03] **Steve Jelley:** Yeah.

[00:11:03] **Andrew Chitty:** Those bodies aren't their bodies. Those heads aren't their heads. But they are, in a sense.

[00:11:09] **Dr. Nina Willment:** It'd be interesting to dig a bit deeper and get your thoughts about who you think are the real innovators in this space. What components of the technology or the workflows are you both really excited about? Steve, I'll come to you first.

[00:11:22] **Steve Jelley:** So I'm doing a lot of work on visualisation at the moment, so what I'm calling sort of production visualisation. So because I can very very quickly construct a temporary world to visualise a scene, and because I can work very quickly with some actors in mocap, and I can use real time motion capture, which I map to some real time digital doubles, I can very quickly work with somebody in a mocap suit to very quickly figure out a performance, or a performance of a group of people. And I can also place some shots using a virtual camera.

It's that three things; I can do an environment very quickly, I can do some motion capture very quickly, and I can lay out some virtual camera shots. And then from that information, I can then figure out how to shoot each of the scenes in my movie.

That might be practical. That might be on an LED volume. That might be shot against a green screen. That might be an all CG visual effects shot. And the reality is all films will need a combination of those things. There is no one size fits all. But all of the visualisation stuff is now possible.

We're doing a lot of work at the moment with directors to try and visualise how they want to shoot their movie. And this is before everything's in production. It's before all those decisions have been made. And I'm most excited about how creative teams can pick this up, use it, use it really efficiently to imagine what their movie is going to look like. And the studios like it too because they can see what the movie is going to look like before they greenlight it, which they always like.

[00:12:56] **Andrew Chitty:** And that's a really exciting thing, isn't it? Because that kind of prototyping in a way is something that's never really been possible. Up to this point, I guess in filmmaking, people are greenlighting things on the basis of script. People have always storyboarded movies, but this idea of prototyping it so that all the different departments and the production decisions can be made most efficiently is, I would think, a bit of a game changer for some films.

I do wonder how, and Steve probably knows about this, how studio executives respond to this - enthusiastically, but does it help?

[00:13:27] **Steve Jelley:** Yeah we just did a big demo in LA last week and invited a lot of studio executives. They loved it. And they were instantly realising that it gave them an insight into the creative decisions that their director wants to do, and instantly thought about how it could save them money *laughs*. Let's be clear, more certainty during pre-production, more of a sense of creative...enabling the creative team to make the decisions they want to make and then to react to them, it's just so much more efficient. And, I'm a producer myself, it's...when you have that, you know what your director wants to do.

It's so much easier to then put the resources in so they can make their movie. And honestly, that's what everybody wants. That's what studios want. And as Andrew says, it hasn't been possible to put these tools cheaply, crucially, and fast, in the hands of the creative teams to date, and now we can.

[00:14:26] **Andrew Chitty:** Yeah, because one of the things I suppose, still with virtual production, it's incredibly sophisticated, but it's still, in its classic form, really quite expensive.

And the type of things that Steve's talking about in terms of changing the movie making process, making creative decisions more explicit earlier in the process, could be one route to making this more efficient, therefore more available to other...to a wider group of people. And I suppose the things that I'm most excited about are... is that kind of democratisation of this technology, and that sounds very fluffy, but making it available to a wider group of creatives. So we can see this experimentally in theatrical performance, but it's still a big investment and relies on a lot of engagement with technology companies who know this stuff and a lot of willingness to bring those two worlds together.

If this becomes a lower price point that we have some of the processes involved [which] maybe don't need some of the technology that we're currently using, so walls, big mocap rigs, if some of this can be aided by AI, albeit at a lower level of fidelity than perhaps the big movies would require, then I think we'll see lots of other creative applications and we'll see this spread across the industry. And I think innovations in production technology, historically, create innovations in content and in the art itself. So there's lots of...I think there's lots of exciting new creative forms and things that are gonna come out of this.

[00:15:59] **Dr. Nina Willment:** So some of that obviously innovation is driven heavily and it's been hugely successful in the sort of partnerships that come between universities and industry. Andrew, how much have you seen VP technologies evolve and emerge as a result of these R&D partnerships that are forming in the VP space?

[00:16:15] **Andrew Chitty:** Well I think that's really interesting because there's no doubt that in terms of the technologies that Steve's talked about and that are used in virtual production currently on big productions, they've been driven by industrial innovation.

Yes, there's downstream...there's upstream, sorry...upstream research into the fundamental technologies involved, and particularly the XR technologies, but the real barriers have been overcome by industry. So you've got pioneering companies, you've got the games engines and Epic particularly, with their Unreal Engine, and you have companies like Industrial Light and Magic driving this forward. Things like Abba Voyage, the ability to bring all that together as an ILM project with many partners, some of them very very interesting, but it has been driven by industry. And I think the challenge has been to... for, in some ways, for the academic world to catch up, both in terms of using these technologies in teaching and in so training the next generation, which is now happening. You're seeing this from postgraduate research facilities into undergraduate degrees.

But I think the next step, which is making...combining these technologies with AI, will be an area where research and industry come together. And I think the kind of partnerships that we can form between research intensive universities, so in the UK post 92 universities that know the industry better, and with those industrial players, has got enormous potential. And in some ways it feels, and perhaps this is about the transition...if I can mention the metaverse word...the transition to the next stage of the Internet, one of connected spaces rather than connected pages. I think there the knowledge is quite distributed across industry and the research community. So I think bringing all the bits together, when we take this out of the pure industrial context of games and film into what comes next in terms of the world of connectivity, then I think that's where the real partnership between industry and research can come together and also it can come together to benefit smaller companies.

I think that's what we found in the UK, is that to bring smaller companies into this R&D environment, you need that kind of partnership, because SMEs have a very short timeline. They've got to pay the rent or the mortgage of all their employees, so they don't take very long term decisions about research.

[00:18:48] **Dr. Nina Willment:** Steve, what's your experience of virtual production R&D from your, sort of, industry perspective?

[00:18:53] **Steve Jelley:** Yeah I think Andrew's right that this has been led by some large companies. Other ones to mention are people like Vicom who make a lot of the motion capture cameras and the pipelines around that. That's a UK company that's global. There's some real success stories. I think we underestimate the fact that there's close on a million people working in just the film and TV industry alone in the UK, and that's not including the games industry. It is a huge part of what this country does. It is also one of the best places to produce in the world.

So there's... a lot of movies are shot in the UK, even if they are studio movies, for example. So my experience, working in the industrial side of it is, we started up as six people agreeing not to pay each other for three months and try and do this startup eight years ago. Now we're over 150 people and we have productions all over the world and we have benefited from a lot of the innovation that exists in this country.

There's two things that are really going to change the game in terms of this fusion between industry and academia and the research, and that is the extent to which all of the AI tools, or for that matter, the games engines or any of the software that we use, it's all open source at the moment, or if it's not open source, there is an open source version. And that's facilitating essentially an open science platform on which all of this innovation can live. So in other words, any industrial company can choose to make proprietary technology if they wish to, but they also have the benefit of an open science platform on which everybody needs to interoperate. You can't really do real time without using chips from NVIDIA right now.

You can't really use a games engine like Unreal Engine if you don't contribute back to the source. You can customise it and you can have your own custom engines and we do that from time to time, but we try not to and that's really important. You've had a culture of quite proprietary technology, which has historically existed around the creative industries in industry, and then because of the nature of this convergence, you're seeing a lot more open science, a lot more people realizing it's in their interest to do so, and that's what's creating this sort of next explosion of technologies. And I think that's the opportunity for UK research. I think it's the opportunity for industry. And yeah, these are very interesting times.

[00:21:27] **Dr. Nina Willment:** Andrew, I just wanted to pick up on your...so you mentioned SMEs and I think sometimes in the virtual production space, there's a preoccupation with virtual production meaning LED wall based virtual production. Could you just talk to us about some of the emerging technologies beyond LED walls, so other forms of virtual production, which we're seeing in the creative industries?

[00:21:47] **Andrew Chitty:** I suppose the big hope there is that we can move away from...we can...sorry...move beyond, rather than move away from. I think you'll see various strands of virtual production move out in the future. As you say, the preoccupation is around big volumes of film industry. But I think, say in...you know... the game sector has been using virtual production for years. That's just what they do.

I mean it would be hard to imagine because otherwise there aren't really characters in those games being shot at or driving around Miami. So in those game studios, they're SMEs, but they are inhabiting an entirely virtual world from the start. They don't have the problem of mixing physical and digital.

But I suppose for those in the screen industries or in performance or people who make immersive experiences, the hope is that we can move beyond having to have LED walls to do production. So I suppose we'll see, what one anticipates, is developments of AI that will allow environments where you just don't need this big kit.

And similarly, there are UK companies currently relatively small working on live mocap, effectively motion capture from mobile phones, so not involving a full dynamic rig. So again, that's essentially driven by increased power through AI. So I think that's what we anticipate. How that actually plays out, I think we've got to create these kind of sand pits where companies who are making the creative technologies and companies who want to use them, come together.

And one of the big parts of CoStar, I think, is exposing a wider range of companies to these tools and what the potential is for them.

[00:23:36] **Dr. Nina Willment:** Andrew, you've obviously mentioned your involvement with Audience of the Future program and all the really exciting stuff that's going on in the, sort of, UK landscape about storytelling in particular for audiences. What opportunities do you think virtual production offers for storytelling?

[00:23:51] **Andrew Chitty:** Ooh.

[00:23:52] **Dr. Nina Willment:** And are audiences interested in these new ways that we can tell stories?

[00:23:55] **Andrew Chitty:** So I would...so I...from an audience point of view, I'd distinguish between virtual production that is essentially invisible to the audience, so photorealism is the ultimate goal, this must... you know, sensation...this must look real. So most of the techniques I think we've seen around virtual production are, and it's moved much faster in transforming the production process. The end goal, the form, the movie that ends up at the end, or the experience that you end up at the end, games too, hasn't been influenced that much.

The main change is that...and this is undoubtedly accelerated by COVID. It changed...I think it changed the economics of virtual production from something that was technically feasible at the point of the Mandalorian, but bleeding expensive, to something that actually, during COVID, became a technique that allowed you to continue making films. And that saw, certainly in the UK over those three years, up popped a number of volumes. By some calculations, more virtual production was going on in the UK during those years than it was in Hollywood or the USA as a whole.

So there was something that drew...the conditions were right in the UK to adopt these technologies, but as far as the audience were concerned, they just got the

experience at the end of it. So the extent to which the audience benefits should be differentiated from the extent to which the audience are aware.

Now then you go to something like Abba Voyage, which was happening coincidentally through lockdown, so it seemed to pop up almost unannounced. But there, it's used all these technologies to create a unique audience experience, the like of which nobody's really ever seen before in terms of the level of integration. You've got...effectively you are there in a virtual concert, but not a film of a concert because that concert could never have happened. Where audiences become interested and excited in this, in terms of pushing the form, is where they're aware of it.

And I think that means experiences rather than classic linear films. Or even the advances made in the games industry, which has always been a virtual but essentially unreal world. So I think you're seeing it in the various forms of...well people refer to it as holography, which is massively misleading, but the creation of virtual characters in live performance. I think we'll see a really interesting example of this coming through the Pavarotti show, which is in preparation at the time. So where the central character is no longer with us, but there'll be other live performers. So we'll see this integration. I think there's so much potential, but you can see the forms evolving now and people playing around with the forms, even if you can't see the finished article, I think.

[00:26:38] **Steve Jelley:** Just to add to some of the examples of the work, right? So we're also working on some live performance shows which are reactive to what the performers are doing on stage. So it's really interesting that there is a...there's a degree of the tool set that's used to create all of these different experiences is common, right?

So there's a games engine, which we're using to create photorealistic backgrounds for the film industry. The point is, as practitioners, we're all using the same tools, for different purposes, admittedly. I would optimise a scene for a game in a different way, because it's got to run on a games console or something, in a way to...I would probably put more render power and optimise it differently if I'm going to project a 16K image on a great big LED wall. But the skill set is fundamentally similar and that's led all of the creators to think, hang on a second, if I'm creating a movie of something, can I also create the game? Can I also create the immersive experience? Can I also create the marketing experience that might be used to promote the movie in the first place? And those conversations always happened in different departments at different times, and now they're happening at the level of the creator. And that's really interesting. So you know, it's not the same thing because each of the forms are different.

There's a huge difference between creating a stage show that's going to play to a stadium, to a stage show that's going to play to a thousand people in a venue. There's differences in scale. You receive it differently. The goal is photo realism for TV, but there's a lot of things that this technology enables.

One of my favorite examples, because it's not happened yet *laughs* so I'll talk about it, is I was looking at doing a musical with a couple of directors. And we were

exploring the possibility of having the entire environment react to the music as it was going through. So we've got a musical, we've got characters talking to each...you know singing to each other, and can the actual environment change photorealistically based on their performance? And that's...those kind of creative possibilities are there now. People just haven't actually done them yet. And I think that's going to happen over the next few years.

[00:28:50] **Dr. Nina Willment:** That's amazing to hear some of those potentials and possibilities that are emerging with the technology and the creativity associated with those.

I want to look to the future in one of the last questions I'm going to ask for this episode. If we're back here in 10 years time and we're still discussing hopefully virtual production, what will we be talking about? Steve, I'll come to you first.

[00:29:09] **Steve Jelley:** Wow, 10 years. I might go five years.

[00:29:12] **Dr. Nina Willment:** Five years is allowed *laughs*.

[00:29:14] **Steve Jelley:** Well, one of my first mentors in Hollywood had a great phrase. He said, "Steve", because I was coming up with whatever was new at the time, 20 years ago and talking about it, and he said, "Steve, the thing about filmmaking in Hollywood is additive. It absorbs everything around it", and I thought that was a really good...and it's true, because we've been making movies for a really long time.

Alfred Hitchcock did back projection for North by Northwest back in the fifties. This is an evolution of it. In terms of the...Andrew is absolutely right, LED walls are not the end point of this. So I think we'll be talking about interactive lighting. We'll be talking about knitting.

We'll be talking about sustainability as well, because the other thing about the use of all of these technologies is they do mean that we can go back to shooting in sound stages with second units going out getting additional photography. It does mean that the carbon footprint of our industry lowers.

It does mean that it's more sustainable, both in terms of climate, but also in terms of people's working lives, and their ability to actually practically work on a movie or an episodic show, which sometimes can be like three months if it's an episodic, sometimes it could be a year. These are big changes.

And I think in five years time, we'll be talking about how much that's changed. Hopefully, from my perspective, we'll also be talking about how it's more efficient, how actually we have a wider skills base. We have a sort of generalized adoption of a lot of these technologies and we'll be empowering creative teams to make the films that they want to make that are more diverse in their content, because I think that's really what it's all about. If you can put all this in the service of a storyteller and you can keep that creative vision all the way through what is a very complex and difficult production process and you can get to that end result, that's going to improve the quality and also the means of making it.

So I hope that's what we're talking about in five years. We'll see.

[00:31:14] **Andrew Chitty:** I'll have a go at 10, Nina, because I think *laughs* I think that if... well, I tried to coin this phrase, which nobody likes 'advanced media production'. So if we...virtual production is a particular thing I think...the thing we're looking at at the moment, but the use of advanced computing technologies to enable new creative processes and new creative products is not... that's something that isn't gonna change. What's gonna change is the nature of those technologies, what they can do, how they can help creatives, and how they can be put together by companies like Steve's. And in 10 years the mix will be different. But it would be crazy to think that big scale linear storytelling has gone away.

Why would we want that? I've never understood people who felt that technology should take away those big communal experiences. And we see with something actually, unique in its way, but something like Oppenheimer or like Barbie, the desire for that communal experience when the experiences are great.

But I think what we will see in 10 years time is a whole range of new types of story experience, which will rely on the interaction between these digital and physical spaces. Or physical spaces and digital experien...digitally enabled experiences, and connected experiences. So I think you absolutely don't have to be part of meta to think that the metaverse concept enables a lot of things beyond... beyond the expression of these technologies in linear storytelling. So I think experiential spaces that are digitally enabled. I don't like the word hybrid because I think that implies that it's a bit of one and a bit of the other. I think this is potentially new. So I think we'll be talking about a lot of that.

[00:32:59] **Dr. Nina Willment:** Thanks both. That's fantastic to hear. And also if anyone's interested in those two themes, the ideas of bringing together physical and virtual worlds, and also ideas of sustainability, they'll be covered in more detail in a couple of subsequent episodes as part of the series, so thanks very much for bringing those to the discussion.

For the last part of the episode, what we're going to do is we're going to have a quickfire question round. I'm going to throw some questions at you both. If you could answer as quickly and concisely as you can, that'd be amazing. And this will be something that we do with all our guests as we go through all the episodes. Yeah, you can be our guinea pigs if that's okay for this first one. So Steve, I'll come to you first and then Andrew, I'll come to you. Why should we care about virtual production, Steve?

[00:33:37] **Steve Jelley:** Because it doesn't limit your imagination to what's there in front of you.

[00:33:41] **Dr. Nina Willment:** Thank you. Andrew?

[00:33:42] **Andrew Chitty:** Because it is, and will be, how we make things.

[00:33:46] **Dr. Nina Willment:** What is your favorite TV or film production that uses virtual production?

[00:33:51] **Steve Jelley:** It's not out yet. *laughs*

[00:33:51] **Dr. Nina Willment:** Oh, wait, watch this space. Watch this space. Andrew?

[00:33:53] **Andrew Chitty:** Well in the end, your favorite thing that uses virtual production just has to be your favorite thing, so I'd say House of the Dragon.

[00:34:01] **Dr. Nina Willment:** Fantastic. Thank you. What companies are on your radar in the VP space at the moment?

[00:34:07] **Steve Jelley:** NVIDIA. *laughs*

[00:34:09] **Dr. Nina Willment:** Andrew?

[00:34:10] **Andrew Chitty:** Disguise.

[00:34:12] **Dr. Nina Willment:** If I gave you both a magic wand, what virtual production problem would you solve?

[00:34:16] **Steve Jelley:** Ooh, ask Andrew first. Give me a second. *laughs*

[00:34:20] **Andrew Chitty:** *Laughs* Oh, massively interactive social spaces.

[00:34:28] **Steve Jelley:** I would solve segmentation.

[00:34:31] **Dr. Nina Willment:** Fab, and my final and favourite question. What TV show from your childhood would you want to remake using virtual production, Steve?

[00:34:40] **Steve Jelley:** I just did. We did virtual production for The Muppets. For the...when Animal goes into the desert to rediscover his mojo. *laughs*

[00:34:48] **Dr. Nina Willment:** Incredible. Living the dream. *laughs* And Andrew?

[00:34:53] **Andrew Chitty:** I'm gonna say The Owl Service, Alan Garner's book, but what I really mean is all of Alan Garner's books which weren't made at all, because it was impossible then.

[00:35:02] **Dr. Nina Willment:** Fantastic. Thank you. And on that wonderful note, I just want to say thank you both for joining me on the XR Stories and Sign podcast on virtual production. Thank you both so much.

[00:35:11] **Steve Jelley:** Thank you.

[00:35:11] **Andrew Chitty:** Thank you.

[00:35:16] **Dr. Nina Willment:** Thanks for listening to The XR Stories and Sign podcast, exploring all things virtual production. Next time we're looking at the fusion of physical and virtual worlds through VP and delving into the possibilities this

technology could create. If you enjoyed this episode, please can you subscribe, rate and leave a review. I'd love for you to suggest other topics you'd like to hear on the series.

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