The Televisual Future Vision Roundtable was hosted at Jigsaw24 Media's Golden Square offices in two sessions of five. The content of these sessions and this editorial is not linked back to our supporters. The thoughts and opinions of our panellists are their own with differing thoughts about what the future of post holds.

Thank you to Jigsaw24 and Nutanix for their support in providing the venue and Graham McGuiness for joining both sessions.

NUTANIX

ABOUT NUTANIX

Nutanix is a global leader in cloud software and a pioneer in hyperconverged infrastructure solutions, making clouds invisible, freeing customers to focus on their business outcomes. Organisations around the world use Nutanix software to leverage a single platform to manage any app at any location for their hybrid multicloud environments. Learn more at **nutanix.com** or follow us on social media **@nutanix**.

JIGSAW24 MEDIA

ABOUT JIGSAW24 MEDIA

Jigsaw24 Media is a specialist division of Jigsaw24 and provides services and technology solutions to the media and entertainment, education and corporate sectors. It's the only UK-based company of its kind that has in-house system integration capabilities, one of only two Avid Elite partners in both video and audio in the UK and Avid's global partner of the year. Jigsaw24 Media's team of industry-recognised experts design, deliver, integrate and support end-to-end solutions for some of the nations' biggest broadcasters and facilities, underpinned by partnerships with over 30 leading technology vendors including Avid, Adobe, AWS, Nutanix and EditShare. With headquarters in Nottingham, an office and demo space at the heart of London's post-production community in Soho, and a nationwide support team, Jigsaw24 Media provides local services on a national scale. For more information visit **media.jigsaw24.com.**

POST FUTURES: VIRTUALISATION, AI AND PEOPLE

The roundtable ran over two sessions with a deliberately broad range of the UK's leading post experts covering a broad cross spectrum of experience and business cases. All agreed that the need for centralisation and flexibility around process was already established, but there were differing interpretations around how post would evolve and commentary around AI, the desirability of a decentralised workforce and even talk of a 'Soho Cloud'.

The Roundtable Panels included:

ADRIAN BULL Managing Director, Cinelab London

DAVID KLAFKOWSKI Founder, Racoon

MARK MALTBY Chief Technology Officer, The Look

TOM MITCHELL Technical Director, Mission

GRAHAM MCGUINESS Head of Technical Architecture, Jigsaw24 Media

JULIAN NELSON Head of Post Production and Co-Founder, Residence Pictures

GEMMA NICHOLSON Founder, Post Super

OLLY STROUS Chief Technology Officer, Zinc Media

PAUL WILKES General Manager, West Digital

DARREN WOOLFSON Director of Technology and Visual Services, Molinare



No Time To Die, 65mm and 35mm processing, Cinelab London
Metro-Goldwyn-Mayer and Eon Productions for Universal Pictures

The upsides of centralisation

BULL: We've felt for some time the next step is not sending the files for someone to download but to send them the link to the application they want to use with the files staying within the data centre. Once they have that link, they're firing up the application, their content and project is all within the cloud, they're not moving heavy data around.

I ultimately see it as analogous to plugging into the wall for electricity as plugging into the wall for computing and storage which you would pay for pretty much like a utility.

KLAFKOWSKI: Going back in time, I used to have all the all the editorial kit in the room and our CTO, Adam Peat, observed that if we centralise the kit, it's easier to look after, while I thought I'm now taking up a room with a load of kit that could have been another suite.

It started with IBM having central processors that led to personal computers and now it's gone back to central processing again. Coming back to Adrian's point you will just buy it when you need it.

You can scale into the public cloud seamlessly. The thought of filling up a data centre with a load of single processors begs the question, 'why would I do that?' You make sure it's connected as close to the Internet as we can - those microseconds make a big difference to responsiveness for the editors - rather than coming back into a machine room wherever you are.



Decades That Defined Us, Grade and online, West Digital | Like A Shot Entertainment for UKTV



A Place in the Sun, Full post production, West Digital | Freeform Production for Channel 4

We've got a corner of a floor in this vast data centre. It's really cost effective. We've got dark fibre into it, which isn't cheap, but it means that you work in the same way locally and our assistants can work wherever they are. All of our physical facilities are using the Internet to access our stack.

WOOLFSON: If you think back 15, 20 years ago, when we were buying machines like Quantel, the kit was reasonably unreliable and very bespoke. The really interesting thing now is that although Nutanix might be relatively new to M&E, it's been hyper-virtualising in finance for 15 years. The disc that you're buying might have a nice name across it, but you're buying Net App, Dell or HP. These are reliable suppliers.

MCGUINESS: It's understanding where the benefit lies, what the total cost operation (TCO) is. The subtleties are extraordinary. For example, when you want to patch in 50 edit suites it takes you five minutes and you're not running around the place. This benefit is typically lost on a spreadsheet.

WILKES: A big headache for facilities is to have 50 or 60 machines that someone has to walk around and plug a USB drive into to update the latest version of software. You can manage them remotely. But the central promise of virtualisation is going to give you more ability to automate and templatise machines. The downside is that it doesn't always work out from a cost perspective.

MITCHELL: It's important to see virtualisation in the context of your company. We've always acted as a kind of the fabric between the technical stakeholders, rather than the creative stakeholders. We're gathering all the assets that are produced throughout production and delivering them in whatever flavour format is required to all the different stakeholders. Our job is to act like a network - a router between two separate entities. So how we deliver that will evolve over time. Today, we do it with people in front of computers pushing files, and who wants to be doing that? That is not how we are going to be doing it tomorrow.

NELSON: The only thing is that then expands into finishing. You can have 100 offline but you've still got to finish the projects.

Thinking about bursting, by the time you work out the cost, you may as well have just bought

a Flame, Houdini or a Baselight. If you can get an hourly pay subscription model, then you could then have 100 Arnold licences, spin them up for an hour across a fair 1000 machines and spin it down again. If you can run a Flame for four hours, two hours, and you need a Baselight for a week, you can just spin them up. You still have the other accessories on top but that then becomes way more financially viable than forking out for the machine that sits in the data centre.

A virtualised future?

MITCHELL: The way we are going to work is going to change. People are at different stages around this table. The very first step is getting comfortable with the idea of virtualisation, which is just remotely accessing your own machines. The next step is then augmenting by allowing some expandability of your capital growth or needing to deploy stuff in the cloud to add or augment what you've already got. I was talking to a VFX company who told me that they're 100% virtualised. They put all of their assets in the cloud. And it makes complete sense, particularly for VFX companies, because they have this expand/contract model. And they need to move geographically, sometimes because of tax breaks. If you can put all your infrastructure in the cloud, you can pop up in any country, and just build dumb stations that are connecting into it.

We will get to the point where you could walk into an office, rent it for nine months or two years, or however long the project is, speak to a furniture company and fill it with desks and chairs. And then just set up the dumb points and you're done.

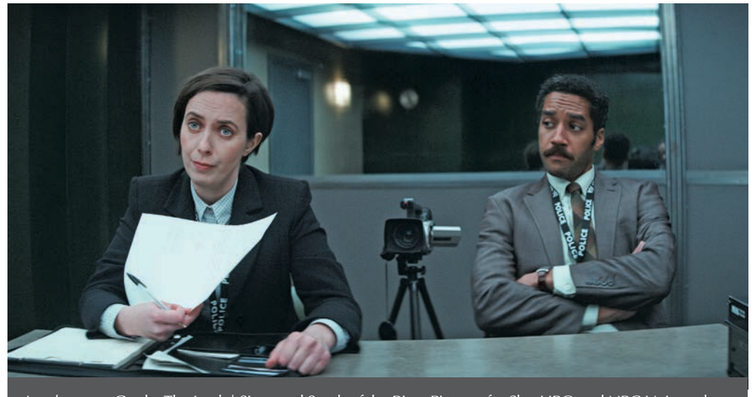
We'll conclude that we don't need an entire machine room. We could probably just have a grading room with a theatre and some dumb heads to a computer in the cloud. So that's the basement level of what I call cloud.

In live broadcast production you already have parallel workflows, working with people on the other side of the world; editing, switching, replays… and you've got real time or near real time workflows. If we're able to put assets in the cloud, then that opens up that door for us to create a fabric that connects everybody together. So that, for example, as soon as you start shooting, you can start putting content in the cloud using 5G and Starlink as that matures, you can start producing dailies, within minutes or hours of footage being shot; you can be editing and sending VFX pulls. You can start parallelising your workflows and shortening the entire production process.

But once you create that fabric where you're parallelising workflows, you can keep track of all the shots, the versions, what are we waiting on to get the shot back into conform, and you can have oversight of that entire process. You can have a top-level understanding of what's going on, even if you've got three or four different VFX vendors in a way that we've never had before in production.



Top Boy, Grade, The Look | Cowboy Films for Netflix



Landscapers, Grade, The Look | Sister and South of the River Pictures for Sky, HBO and NBC Universal

MALTBY: Tin quickly becomes redundant. If we were setting up from scratch, I would be actively looking at what can I do on an Elastic Compute Cloud Platform with Amazon, where does my data need to be? It's a lot clearer now, there's a lot more conversation, there's a lot more people who have done it. I remember looking at this four or five years ago, and just getting lost in the terminology.

Artificial Intelligence

MITCHELL: The next phase after virtualisation is the intelligence layer, which is where we start to use, and I know these are buzzwords at the moment, algorithms and AI to start bringing in real intelligence capability that just you can't do in a brick and mortar facility. But you can only really start to connect all the people together once it's all in the cloud.

A lot of people don't understand AI and how it works and its current limitations. But where I believe it can be incredibly valuable is in augmenting your abilities. I used to work with stressed DoPs and you'd only have 30 seconds of their time. So, you'd give them three looks. With AI, if they like one you can quickly help give them three more in the same area. It's not replacing me, but it will allow you to be more consistent and augment our capability.

NELSON: I think you're onto something. I was looking at this image tool last week that came that had been in development for ages. Someone was asking for a blue apple and a bowl of green pears. And then it presented five different versions and then you go 'okay, I like that one'. And then it presented three more. It doesn't give you your final result, but it gets you to somewhere closer.



Clarkson's Farm, Full post production, Racoon | Expectation Entertainment for Amazon Prime



The Northman, 35mm Processing and scan, Cinelab London | Universal Pictures

Is a decentralised workforce always desirable?

KLAFKOWSKI: Unless the project demands it, editors will want to work from home.

NICHOLSON: From an editor's perspective, they definitely want to work at home. If the director's not there, they don't want to be in. They've had a taste of this work/life balance and they don't want to go back. But how are we supposed to train the editors of the future if they can't sit in a room with an experienced operator.

Sound is totally different. People working on the high-end projects want to be back on prem, only so much can be done from home.

MITCHELL: Audio is a significant challenge. Because when you have a client listening, you have no control over the environment listening, because it's not just the speakers or headphones. You could sit there and be arguing till the cows come home and be listening to two different things.

WILKES: There are some projects that we've been looking after for years, where all the offline was in house and on premise. And then lock down happened, and all the editors just went home. And we'll never go back to the old way again. It is just so much nicer. It still relies on the tech support being as good. And it still relies on the media management being accurate. And it relies on the finishing being as good. So even though it's remote no-one should feel remote.

Winning a new client and getting them in, while not actually physically being there is very weird. It's quite strange. They just believe you deliver. Sometimes the first interaction they get is when a file is sent to them.

WOOLFSON: The reality is that if Covid has taught me anything it's that, yes we are technically capable of providing a really good remote option, but that human beings still want to collaborate in a single location.

MALTBY: A lot of us are probably quite capable of switching off at the end of the day. The younger generation might feel that they can't switch off because they haven't finished.

NICHOLSON: I think we want to move to a position where people are able to work the way they want to work. We live in an industry where people burn out and anything that we can do to retain talent and improve people's lives is desirable.



Demo footage shot on 65mm and scanned at 12K on an OXSCAN to 4K at Cinelab London

STROUS: We had some editors sharing with their furloughed flat mates who might be watching Netflix in their bedroom sucking all the bandwidth while they're trying to cut in the other room, sat on the end of their bed, having the most terrible experience.

WOOLFSON: We had lots of newly married operators, sometimes with a with first child, living in one bedroom and both husband or wife, boyfriend or girlfriend, were absolutely desperate to get back into work. They were even asking if we could send them a chair. Because they were sitting on the end of a bed on our laptop.

MALTBY: Now we have got the clients who don't necessarily want to turn up, it's in the conversation, 'he or she won't be here, they're in LA, can you set up a to LA? We have started to do regular collaborations with facilities in the US, where our clients are sometimes, and also in reverse. They will sometimes send clients to us to watch something.

Financials

KLAFKOWSKI: The killer is not electronics. The killer is taking on real estate for maximum capacity and maybe a little bit more. it might be 100% for four months, but the rest of the time it's not 100% and therefore losing money. It's the hotel model. And that's the threat.

I used to have a facility with several hundred rooms. It was never enough for sales, but I knew it was enough.

WOOLFSON: My concern is that when we are all on board with AWS, Google and Azure, that the prices will only go up.

MCGUINESS: The cloud is the obvious consolidation point for all of this stuff. But the real question is when? That is really the big question, everyone's wrestling with. And the reason private cloud exists right now is because basically, unless you're a big player utilising the public cloud is expensive.

BULL: And the point about the data centre is that if we keep on buying our own tin and put it in our own data centre and only use it for 50 or 60 hours a week, we're all screwed. We're only utilising it for a third of the time and that's where the third-party data centres have an advantage over us. That's why collaboratively if we were to do it, it could benefit us all. And it could follow the sun and be globally available.



The Midwich Cuckoos, On set DIT and digital dailies, Mission | Snowed In Productions for HBO and SKY



Chloe, On set DIT and digital dailies, Mission | Mam Tor Productions for BBC and Amazon Studios



Anatomy of a Scandal, Digital dailies, Mission | Netflix



PRU, Picture finishing, Residence Pictures | Fully Focussed for BBC Three and iPlayer



Trigger Point, Full post production, Molinare | HTM Television for ITV



61st Street, Full post production, Molinare | AMC Studios for AMC Networks

We've currently got a production starting over in Canada which is brilliant for us, based on the time difference. We are a facility that is typically much busier overnight processing the days shoot, whether its digital mags or film cannisters. Our business always has capacity during the day time, because our model is processing the day's shoot overnight.

The Soho Cloud?

BULL: What we care about is UK post continuing to be a centre of excellence. Where the threat is tax breaks happening internationally. It's not about competing between UK post houses. What we care about is that that work stays in the UK and the chance that we're going to get the next job and the next job.

And if we were smart about it, we could look at that collaborative, collective requirement and say how do we create our own post private cloud. It's what Sohonet did 20 years ago for distribution.

If we had the same function for compute and storage, the need for 50 suites to be dialed-up wouldn't matter because we've got 10,000 available.

Rather than all of us independently trying to work out what our peak capacity is and have our metrics that we only build to 70 or 80%, we collectively look at it as communal peak capacity. And we still have the talent and the relationship, and I think that's what we might all have left. And we are very collegiate in Soho.

STROUS: Adrian's holistic idea is a good idea. Looking much further forward, the model that I'm looking for us to move to is a co-located model where we can have our own physical team and spin up to the cloud with minimal latency.

MCGUINESS: Soho Cloud? It's an interesting idea but you can't help feeling that it's a rich area for conflict as well as collaboration, not to put too fine a point on it. But worth considering.