What do 4K UHD, 8K and VR mean in real terms? What impact will the next generation of TV tech have on the nuts and bolts of content creation and distribution? Juliana Koranteng reports

Broadcasters, producers and distributors will be hard pushed to find excuses for not investing in 4K UHD, 8K and virtual reality (VR), because their applications are all but ready to be offered to viewers. And, as MIPCOM 2017 will demonstrate, a host of speakers and participants will come armed with productions that are no longer experiments, but actual shows ready to be beamed into audiences’ homes.

In the case of the ultra high-definition image quality that 4K-UHD tech offers, international film-and-TV producer Stephen Cornwell argues that it should already be a standard requirement. Cornwell, co-CEO of London-based The Ink Factory, says there is a very good reason why his company produced The Night Manager, the 2016 blockbuster mini-series thriller, in 4K UHD. “Although delivered in normal HD, we felt it is going to be a future favourite in the era of high-res TV,” he says. “The better the image, the more value it will have in the future.”

Because so many movies end up on TV, The Ink Factory is also making movies in 4K UHD, such as last year’s war drama Billy Lynn’s Long Halftime Walk, which was directed by Taiwanese filmmaker Ang Lee. It was shot in 4K UHD at 120 frames-per-second (fps), compared to the standard 24 fps used in filmmaking today.

“At 24 fps, a film is a combination of very light and dark frames,” Cornwell says. “At 120 fps, it shows the world as people see it — as one continuous image and no flickering. Ang Lee wanted to remove that flickering barrier and create greater intimacy and immersiveness for the viewer.”

And today’s consumers, who are accustomed to high-res images even on cheap mobile devices, will be demanding more of the same from their TV content. In response, an increasing number of broadcasters, streaming platforms, producers and distributors are building up portfolios of 4K-UHD content. A compulsory requirement for these ultra high-res images is HDR (high dynamic range) tech, says Joe Nakata,
New Tech

senior producer, brand design platform in the UX planning department of tech giant Sony, which has hosted MIPCOM’s Sony 4K Theatre sessions for several years. He says incorporating HDR makes the difference between crystal-clear images and ones that are so rich in colours that viewers feel they can physically touch what is on the screen.

“HDR is the hottest 4K topic at the moment,” Nakata says. “HDR improves the colour richness and contrast ratio. Once the consumer sees it, it is hard not to notice the difference it makes to the picture quality.”

The line-up of presentations at this year’s Sony 4K Theatre will confirm that 4K UHD is no longer limited to showing off how vivid and vibrant factual and wildlife TV can be. Other genres, including sports, fiction and music programmes, are being shot in 4K UHD with HDR. UK public broadcaster the BBC and Sky TV are among the traditional media conglomerates participating in MIPCOM’s UHD sessions. Music fans, meanwhile, will be treated at the Montreux Jazz Festival in 4K via Swiss broadcaster Radio Télévision Suisse.

Among new MIPCOM participants will be US space agency NASA, which is scheduled to discuss its TV network and its coverage of the cosmos in 4K, including detailed images of Earth as seen from space. Leading streaming platforms, including Netflix, and satellite TV broadcasters such as the UK’s Sky and BT Sport, are spearheading TV transmission in 4K UHD. Unlike traditional terrestrial broadcasters, their tech infrastructure has the bandwidth to cope with 4K-UHD content files, which are four times as heavy as standard HDTV files.

The number of HDR-compatible 4K-UHD TV sets worldwide is expected to reach 245 million by 2022, according to US-based ABI Research, boosted by manufacturers including Sony, which is including HDR capability in all its new TV sets. The international screen-entertainment sector is certainly embracing the tech. “In terms of live broadcasting, for now, many sports-focused broadcasters are in the advanced stages of testing or the early stages of implementation,” says Tristan Viale, market analyst, media and entertainment, at London-based Futuresource Consulting. “As of June 2017, of the top-20 grossing titles at the US box office, 40% were shot in native 4K, 40% were up-scaled to 4K and 20% were HD.” France-based Saint Thomas Productions, which specialises in wildlife, science and environmental films, is among the production companies that have invested in 4K UHD. The reason, says managing director Bertrand Loyer, is because Saint Thomas’ content “needs to cross borders and age seamlessly”. He adds: “We started to shoot in the format in 2009 and avoided all sorts of [cheap] 4K cameras, because they don’t support the colour grading

and stabilisation process required by large 4K-HDR sets. An image on a large 4K screen must be much more rock solid and smoother than on a smaller HD set.”

The UK’s Atlantic Productions is another early adopter of 4K UHD, thanks to Colossus Productions, its joint venture with satellite broadcaster Sky. Originally built to specialise in 3D TV, Colossus already has the tools to create high-res quality videos. “For us, UHD and HDR are brilliant developments for our natural-history productions,” says Mike Davis, Atlantic’s associate creative director. “With drama, there are opportunities for retakes. With wildlife and other factuals, we film things that are pretty unique — shots you only get from once-in-a-lifetime opportunities — so future-proofing in the highest resolution works for us.”

DW Transitel, the documentary production unit at German international broadcaster Deutsche Welle, is coming to Cannes with The Search For Perfection: Islamic Garden Design, which is automatically available in 4K to highlight the luxurious colours of the magnificent Islamic gardens in countries such as India and Morocco.

UK independent Arrow Media has

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Some 8K cameras are so small that NHK used them to shoot under a frozen lake in the Antarctic.

ZDF-produced Children Of The Wild: “The development of 4K UHD has grown very quickly, as it is being pushed by a lot of the VOD streaming platforms,” says Nikolas Huelbusch, director at ZDFE factual. “As with HD a few years ago, factual and science have been key drivers for 4K UHD. And so have historical dramas, where visual quality is very important.”

Stuart Smitherman, president of US-based distributor Vivicast Media, points out that 4K shows are no longer being used to illustrate what the tech can do — these days, business is also being done. “In 2016, and so far in 2017, we have seen a growing requirement for more substance in the content,” he says. “The requirement now is that the content must tell a good story and engage the audience, all showcased in stunning UHD cinematography.”

Japan’s NHK is totally committed to 4K UHD — and even 8K, the more advanced super-HD version that offers a resolution that is 16 times higher than HD TV and four times more than 4K TV. The public

VISIT THE VR ZONE

THE VR Zone at MIPCOM, on Level -1 of the Palais des Festivals, gives delegates the chance to experience VR content from around the world and meet new VR startups and producers. The Zone is hosted by Laduma.

War drama Billy Lynn’s Long Halftime Walk, directed by Ang Lee and shot in 4K UHD at 120 frames-per-second
New Tech

broadcaster is launching a 4K and an 8K channel in December 2018. Several Japanese satellite and VOD platforms have also won licences to transmit in the format, although the country’s content producers are focusing only on 4K at the moment.

However, Jun Ochial, senior producer content development center, NHK, says 8K’s potential is so high that the broadcaster is seeking content partners. “Using this new media, we would like to cooperate with first-rate artists and performers, as well as natural-science content makers, to record their action in 8K,” he says. “NHK recently shot Tokyo at night from above in 8K HDR. You can see each household’s light, literally, and the beauty of Tokyo’s night was almost three-dimensional. We are starting to use 8K HDR in live sports coverage. And some 8K cameras are so small that NHK used them to shoot under a frozen lake in the Antarctic for the first time.”

Ochial cannot praise 4K and 8K’s potential enough: “This medium will bring the type of experience that a normal 2K TV cannot. It is not just a matter of seeing something beautiful – it is an experience of beauty itself.”

VR is another entertainment tech vying for the TV industry’s attention. UK-based VR content creator Rewind helped set up MIPTV’s VR Zone this year. And CEO and founder Sol Rogers says the outcome indicates the industry is seeing only the tip of the huge iceberg that VR is set to become. “By MIPTV 2020, we could see VR studios selling both 360-degree videos and true VR formats,” he says. “This will include side-plots and tie-ins for some of the most popular intellectual properties on both the large and small screens.”

In addition to recent VR assignments to accompany the 2017 sci-fi movie Ghost In The Shell and performances at the Welsh National Opera, Rewind is focused on the TV sector too. “VR is the ultimate storytelling tool,” Rogers says. “Studios, networks and broadcasters need to make sure they fully understand all the options available to them before diving into the world of immersive realities. It is about the true magic of VR, which gives users a real sense of being present in the experience.”

Some high-profile TV shows, such as the BBC’s Galapagos and Great Barrier Reef With David Attenborough, USA Network’s Mr Robot, HBO’s sci-fi hit Westworld and the 600th episode of iconic animation The Simpsons, have been promoted with sophisticated trailers in VR and/or 360-degree video. Still, there is a consensus that the international TV industry could be doing more with VR. Atlantic Productions’ Davis says his company’s pioneering work has been receiving more attention from out-of-home entertainment venues. London’s Science Museum, for example, recently commissioned Atlantic subsidiary Alchemy VR to create a 360-degree
New Tech

VR re-enactment of UK astronaut Tim Peake’s return to Earth in the Soyuz capsule. Davis believes similar dedicated VR content should be available in the TV business. “VR should not just be a complement — we want VR to be a unique proposition too,” he says. BBC Earth, BBC Worldwide’s natural-history unit, has invested in VR to promote some of its high-profile wildlife titles, including Planet Earth II, Cat Fight and Bear Island. “VR is brilliant complement to what we’re doing, and we’re excited by the potential for production and distribution,” says Jonathan Williams, BBC Earth’s commercial brand manager. Sports and branded content are providing VR business to Laduma, the VR production studio based in the UK and South Africa. Recent clients have included the UK’s International Cricket Council, Unilever’s deodorant brand Sure and US adventure-travel firm Moab Adventure Centre. The assignments have offered more opportunities to understand how TV content can exploit VR, says Laduma executive chairman Wayne Scholes.

“From our point of view, we have to continue to produce great content and make TV executives understand that VR can be a great platform,” Scholes adds. “If TV is serious about keeping people engaged, they would have content that not only mirrors the action on the screen, but can also change along with the movie or TV show while you’re watching it.”

Phil Birchenall, projects director at K7 Media, says the demand for information from TV-industry clients indicates that VR has a place in the sector. In fact, demand has been so high that K7 Media itself has invested in its own VR laboratory. “After writing about VR for several years, we know the interest is there. Now we can also inform clients from a position of experience too,” he says. Birchenall predicts the future adoption of VR will also be influenced by people’s access to augmented-reality (AR) tech. This will happen via gadgets such as Apple’s new iOS 11 iPhone, which is expected to feature an AR app. And social media’s influence will be immense, he believes. Facebook has pledged to invest $250m in gaming and non-gaming VR content via its Oculus-headset subsidiary.

“The future will be somewhere between VR and AR, and the TV industry should be experimenting now,” Birchenall adds.

8K AT MIPCOM

At MIPCOM this year, NHK is establishing a new 8K showcase area complete with the large 8K TV-screen technology and 8K content. Content on show includes: The Nutcracker Suite performed at the Mariinsky Theatre in Saint Petersburg; exploring the secret of Hokusai’s paintings, a collaboration with The British Museum; the mysterious frozen lake in the Antarctic; and a striking night view of Tokyo. The area is operational daily, Monday through Thursday, in Auditorium D, on Level 3 of the Palais des Festivals.