Why movie night will get a whole lot better

Hanno Basse

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20th Century Fox Film Corporation has given the world some of the most iconic movies in history, including *Star Wars*, *Titanic*, and *Avatar*. More recently, it's rolled out blockbusters like *The Martian* and the *Planet of the Apes* trilogy, and cult classic contenders such as *Kingsman* and *Deadpool*. So, when the company's CTO, Hanno Basse, tells you, "The main thing has always been and always will be the story," you know his words carry weight – in this case 82 years and some of the biggest grossing movies ever.

By Gary Maidment

Visual immersion

Like every other industry vertical, digital technologies have landed in Hollywood both on the production and user sides. Basse believes that the biggest shift has been in the quality of the home experience, "We went from tape, standard definition, square-looking TVs to ultra-HD, blu-ray, 4K HDTV." In parallel, these tech advances have raised consumer expectations and influenced Fox's strategic direction, "That's why Fox was the first studio [to get] 4K and HDR content made," Basse says.

For those who want to know the difference between 4K, UHD, and HDR, here's a quick rundown: 4K refers to the pin-sharp, ultra-high resolution of 4,096 horizontal x 2,160 vertical pixels, which you'd find on the big screen at a digital cinema. UHD (Ultra High Definition) is designed for TVs, giving a slightly lower pixel count at 3840 x 2160, but still four times as many as you'd get on HDTV.

While 4K and UHD are technically different, popular usage has merged them into 4K UHD, which describes the UHD home viewing experience that you'd enjoy on your couch rather than the true 4K you'd see at the cinema.

Compared to SD and HDTV, 4K UHD gives the viewer better clarity and definition – to a certain extent anyway. According to Basse, "The difference between 2K to 4K is a little bit difficult for consumers to distinguish."

This is because 4K exceeds the limits of our 20/20 vision when it comes to tracking a moving image. Imagine trying to perceive individual grains of sand – you might be able to do so very close up, but it's clearly impossible when they're in motion at a distance of 9 to 10 feet, which is the average TV viewing distance. Adding more grains of sands – or pixels – doesn't really help.

So, is 4K the fools' gold of definition? Not exactly, but its application isn't all-encompassing. It best serves in three scenarios: one, big screens that you'd find at the cinema and – and here opinion is divided – TVs that are 50 inches or bigger; two, static images where the eye can pick out more detail; and, three, very close up. The second scenario and possibly the last tie in with today's consumer mobile viewing habits and explain why handheld devices may emerge as the primary drivers of 4K. However, whether or not 4K is overkill on a phone screen is still the subject of debate.

HDR shows its true colors

Unlike 4K UHD, High Dynamic Range (HDR) doesn't pile on the pixels to raise picture quality, instead boosting color accuracy and contrast ratio. Both have a huge impact on realism. In fact, HDR on a 1080p screen would outshine 4K resolution when it comes to colors that pop out at you for an experience that's more akin to looking out of a window.

"I think for us, the main feature of UHD is high dynamic range content, which is really a qualitative difference rather than quantitative difference," agrees Basse. "Our filmmakers really like [HDR] because they now have a much larger canvas to work with than they used to."

However, he adds that for HDR to have value, "The quality of the client device needs to be there." When it comes to delivering outstanding content, high-end quality requirements are as true for networks and latency as they are for devices. Referring to Huawei's 2017 Ultra-Broadband Forum, Basse states that, "We talked a lot about creating 5G networks, high bandwidth, and cloud technology [and] we're working in parallel with technology development to make sure our content development pipeline matches device capability and network capability," a viewpoint that mirrors Huawei's cloud, pipe, device strategy and also expresses the need for upstream and downstream partnerships.

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Basse mentions that 20th Century Fox Film Corporation is teaming up with network, device, and component vendors, "including Huawei and its subsidiary HiSilicon as well as TV manufacturers in China." Clearly, the movie and entertainment ecosystem is expanding quickly and deeply into the digital realm.

VR and AR

The final installment of Fox's critically acclaimed *Planet of the Apes* trilogy, *War for the Planet of the Apes*, scored an impressive 93 percent on Rotten Tomatoes. However, it wasn't just the taut and emotive story that impressed reviewers. Soon after the movie's release, the phenomenal visual effects were being described as "astounding", "bleeding-edge," "jaw-dropping", and "taking CGI to a new level."

The potential mix of virtual reality, HDR capabilities, CGI, and artificial intelligence expands the landscape of the movie and entertainment industry into a potentially astonishing vista. But, at present this vista is difficult to define, says Basse, "How you're going to tell a story in VR or AR isn't really clear yet. It's probably not just a game-playing medium. It's somewhere in-between…a story combined with an element of exploration, an element of role-playing…We're in the middle of figuring out how that will work."

Any exploration and role-playing element will certainly excite the gaming industry, which is worth an estimated US$108 billion. Best-selling titles like *The Last of Us* and *Uncharted 4* already play to a certain extent like interactive movies, with fleshed-out characters and stories, stellar scripts and voice acting, emotional investment, and high-quality graphics.

With the first title in the series released in 2007, Bioware's *Mass Effect* trilogy was groundbreaking in that it merged action and RPG with a gripping, cinematic story whereby a player's decisions – often tough moral ones – had a major impact on a story arc that spanned all three titles. While the game was not without its flaws, its complex decision matrix is still up for discussion years later, with this analysis neatly summing up the trilogy's basic premise: "Ever since the first game, Mass Effect has always been about

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shaping the story the way the player wants it...Players could create millions upon millions of iterations of the same universe."

Interactive stories and user-controlled decisions of the type seen in *Mass Effect* are likely to continue to be a huge draw. A decade on and the right ingredients for shaking up traditional linear story-telling are in place: advances in artificial intelligence, graphics processing, VR, AR, and HDR, and enabling technologies like cloud. Add in a gripping cinematic experience, and the home entertainment experience could well be redefined, positioning the user as the architect of his or her own story with an unprecedented level of immersion.

Fox is already involved in producing VR content oriented towards filmmaking. Its research arm, Fox Innovation Lab, teamed up with the startup Felix & Paul Labs to co-create VR content in October 2016. Basse is realistic about the difficulties with VR, citing cost and complexity as two current limiting factors. But, he says, "I think 2019 to 2020 are going to be the time framework [when we will] see a lot more mass adoption of VR content." Over the next few years, says Basse, image quality, graphics processing, and live image capture capabilities will be more conducive to producing high-quality VR content. And he's confident about the years to come, "VR and AR have a great future and are going be a pillar of our business in the future."

Content is still king

Basse – a CTO – nevertheless emphasizes that content is the main market driver rather than the tech-powered content pipe, "Unless it's filled with content, it's meaningless." He specifically means high-quality content that not only uses the available network and device technology, but also effectively pushes it to consumers. Due to the explosion in content in recent years, this has never been more important, "It's becoming more of a problem for consumers to really find content that resonates with them," says Basse. "So we need to figure out how to help them do that." Fox is looking into big data and AI, with data collection and analytics at the heart of ensuring that different consumer segments can access content that reflects their habits and preferences.

It's clear that the movie industry is expanding into a much broader ecosystem that comprises an array of technologies, delivery channels, and new partnerships. The burgeoning ecosystem will enable Fox to fulfill its vision, which according to Basse, involves, "Making sure that the stories we're telling resonate with global audiences."

And the nascent blend of creativity and technology promises a level of resonance we've never seen before. ▬▬