

CJP's virtual production project at Southampton Solent University is training the next generation of filmmakers



STUDIO TOUR

Extended reality has transformed storytelling as we know it. We discover the depth of its impact, and the studios that are facilitating that growth

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We love an umbrella term when it comes to media technology, and extended reality (XR) is one of them.

It covers off all immersive technologies, including augmented reality (AR), virtual reality (VR) and mixed reality (MR) – and of course those yet to be created.

XR technologies extend the reality we experience, through merging virtual and real worlds together – or creating a fully immersive experience.

The global XR market is expected to grow considerably in the coming years, with XR innovation expected to be strong in the US, Asia and Europe.

Many of the major players in the AV space have stepped up to the task of the development of XR experiences – be it for advertising and signage, or at gallery exhibits and theme parks. As a result of its growing presence, XR studios are on the up – at a global scale.

ENHANCED ENVIRONMENTS

Target3D's StudioT3D is a brand-new, state-of-the-art facility in central London, designed by the foremost distributor of 3D technologies in the UK. The Dock Street premises harnesses the most powerful technologies that are currently available and combines them with industry-leading infrastructure to form a world-class virtual production and motion capture studio.

The studio is crafted to cater to the specific needs of various media productions, making it an ideal space for a broad range of creative ventures. These include film and television productions, game development, performing arts, live events, music videos and animations.

Among a collection of technical partnerships that brought the studio to life was 7thSense.

"We've traditionally manufactured media servers that mainly deal with fully

uncompressed media, predominantly for themed entertainment markets like theme parks, planetariums, museums – that kind of marketplace," introduces principal systems engineer at 7thSense, Andy Bates. "We have a new range of products that use state-of-the-art hardware, which is ideal for these emerging markets – like real-time environments that use game engines."

7thSense's new range of products include the latest NVIDIA hardware, plenty of storage and advancements in the game engine market.

According to Bates, a lot of studios have used a home-brew approach of creating their own PCs, but then are left with an expensive bit of hardware that may or may not work.

"There was definitely a space in the market for a state-of-the-art and high-performance server that comes with a warranty and support. That is how we've slotted into this industry, ○

“ The studio is crafted to cater to the specific needs of various productions, an ideal space for a range of creative ventures”

and how we're fitting the bill for a lot of these studios. Partnering that with our pixel processing hardware is how we've really managed to find our place in this competitive marketplace."

Having collaborated with the Target3D team for several years for a range of projects, largely to do with tracking systems, 7thSense was the sensible choice when it came to setting up its new London facility.

"We supplied two of our R-Series 10 media servers there, which are used to drive the main LED wall. Then they've also got a relocatable LED wall, which they can use for lighting effects for their shoots. Additionally, we've partnered that with a couple of our Juggler units, which they can deploy for lighting effects," Bates adds.

Juggler is 7thSense's hardware-based pixel processor range, which is designed to simplify the management of multiple sources and outputs for complex high-resolution systems, multiscreen experiences, mega canvasses and warped or blended projection displays.

The new location features a single large LED volume and two moveable tracked LED walls – of which 7thSense's technologies are essential components – in turn facilitating virtual production workflows and motion capture of up to ten performers at a time. That includes full-body, finger and facial expression capture, as well as intricate performance sequencing. Historic and potential use cases range from virtual and augmented reality applications, through to visual effects and animation.

There is an undeniable shift to virtual production – and the opportunities that XR offers – within the industry, and Bates points to the benefits of this.

"The fact that you can create these virtual environments saves vast amounts on the costs that come with location shoots and flying huge teams of people around the world.

"It also means you can partner up with other studios, because as long as you've got fast connections, you can link up studios and work collaboratively."

It seems that, with the influx of virtual studios, we are only really at the start of XR's journey.

"We're only at the beginning," Bates expands. "As the costs of making this technology come down, it means that more and more creatives have access to it. The more hands it gets into, the more options creative people get – and the opportunities are endless, especially with XR and AR."

XR IN SOUTH KOREA

Roe Visual is another vendor making waves in the XR space – a company dedicated to making top-level LED display platforms. By using carefully selected high-end components, the latest technology and its own in-depth knowledge, Roe offers great solutions for creatives, designers and technicians that rely on its products for installation, shoot or performance.

Inevitably, creating LED technology of this calibre leads Roe to working on a variety of AV installations and projects, and this is no less true for the XR variety.

One example that highlights Roe's innovation in this new space was an announcement at the end of 2023, revealing that a collaboration with Ark Ventures had resulted in further expansion of NIPA KOVAC XR Stage. A cutting-edge studio, this was equipped with Roe Visual panels and emphasises NIPA's continuing commitment to pioneering ICVFX and XR technologies in South Korea.

The NIPA (National IT Industry Promotion Agency) worked with Ark Ventures, a South Korean company with extensive experience in providing virtual production solutions, for this studio located at the South Korean VR AR Complex (KOVAC) in Mapo-gu, Seoul.

Thanks to the snowballing effect of virtual production technology, NIPA has been actively venturing further into that landscape, with the goal to strengthen South Korea's information and communications technology industry and bolster its global competitiveness when it comes to media output.

"I believe that featuring globally recognised products in our expanded NIPA studio will yield significant results for South Korea's virtual production industry," states Lee Jin Seo, deputy director of NIPA.

Having come from humble beginnings as a relatively modest studio, NIPA has now become pivotal in various sectors including advertising, film, production and education.

This time around, NIPA once again chose Roe's most popular products, BP2V2 and CBSL MKII, to maintain the high standards that are demanded by virtual production.

With a well-planned blend of XR and ICVFX capabilities, NIPA's highly skilled creative and technical teams managed to incorporate these new products, in turn successfully transforming NIPA KOVAC XR Stage into South Korea's most advanced integrated studio.

"Working with NIPA has been an excellent journey for us," emphasises David, representative of ARK Ventures. "Over the previous couple of years, our collaboration has evolved into a close strategic partnership driven by profound understanding of each other's objectives. With a forward-thinking approach, we are confident that, together with NIPA, we can achieve further breakthroughs and explore new dimensions within the immersive digital world."

CROSS-SECTOR COLLABORATION

Academic institutions have also had a hand in the developing XR landscape. Most recently, CJP Broadcast Service Solutions was involved with the



Roe Visual and Ark Ventures collaborated to expand the NIPA KOVAC XR Stage in South Korea

installation of a new virtual production environment at Solent University in Southampton. The project entailed the evolution of an existing studio space into a very large, high-performance, flexible environment with the purpose of serving students across a range of disciplines.

The idea behind the studio's upgrade would be to provide the sorts of facilities students will see in their working lives after graduation, meaning it has been equipped with a range of commonly used professional tools. The virtual volume consists of a 10x3m LED wall, with a 4x2m ceiling, using AOTO 2.3mm and MxH3.7mm LED panels powered by a network of Brompton video processors.

"This is our biggest investment for years," declares Christopher Woolford, technical instructor at Solent University. "Its flexibility means it can be widely utilised by our student base – not just for film production, but photography, theatre and games."

The screen displays virtual graphics generated by a multi-node Mo-Sys VP Pro XR server – making it only the third university to utilise this system. At the heart of this is the Unreal Engine, widely implemented to create photorealistic environments for final pixel virtual shoots. As Solent has a popular film course, the ability of the Mo-Sys software to pull focus between real and virtual objects is a key creative feature.

"The students and lecturers alike are incredibly excited to get working with it as soon as possible," Woolford adds.

CJP has also installed the Kino Flo Mimik lighting tile. As well as providing excellent, controllable, high-intensity LED coverage, this can dynamically adjust its colour temperature to provide continuity between its real and virtual elements – a useful tool.

Woolford also makes the important point that students who have different interests could approach the facility from contrasting viewpoints, but still derive maximum benefit.

"As there are so many aspects to virtual production, different courses have a great chance at working together.

"The film production students will get to work with CGI courses in order to build environments – two groups that would not traditionally have come together. Live events could put on a show with visualisations and work with games design to make it. This cross-course collaboration is something we are really looking forward to seeing."

The new studio was completed in 2023 and will become an integral part of the teacher programme in 2024.

JUST THE BEGINNING

Extended reality and virtual studios are galvanising the way we perceive and interact with content. From expanding the possibilities of entertainment to revolutionising industries like gaming, education and even medicine – XR's immersive capabilities continue to push the boundaries of technology. And it's not yet close to its final form. ●



Target3D on Dock Street in central London, brought to life with help from 7thSense

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