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Public figures from pop stars to politicians are increasingly using holograms to reach more people. Jenni Marsh finds out where the technology is taking us

THAT'S GLOW BUSINESS

At a small hall in Gyeonggi province, South Korea, K-pop megastar Psy has been giving 16 performances a day, every day, since mid-July.

In his first week at Everland Park, 30,000 fans came to see him. The concerts are for intimate audiences of 100 people, 30 minutes long, and feature all the big hits, including that bouncy Gangnam jig.

But there is one little catch - Psy isn't technically there. His record label, Yang Goon Entertainment (YG), in collaboration with the Korea Creative Content Agency, has built a K-Pop Hologram hall.

Here, the latest laser technology projects an image of the star that is so lifelike that audiences could be forgiven for thinking that the singing, dancing Psy in front of them, complete with black shades and slicked back hair, is the real deal.

The hologram hall marks a wider move towards broadcasting virtual performances in the K-pop market. Rival label Success Music Entertainment's (SM) biggest act, Girls' Generation, gave a "V-performance" in Seoul's Gangnam Station in January and followed it up with two packed holographic shows at South Korea's Olympic Stadium in July.

The label opened a V-theatre last month, while YG has announced its intentions for 20 more V-venues, beaming out stereoscopic visions in China, Singapore, North America and Europe by 2015.

Such a move towards holographic broadcasting could save labels massive air travel bills, reduce their carbon footprint, resolve scheduling clashes for artists, revolutionise world tours, and give show producers creative possibilities previously out of reach.

While Madonna and animated rock group Gorillaz flirted with holograms at the MTV Awards in 2008, the phenomenon really caught the world's eye at Coachella in 2012 when Tupac Shakur - an American rapper who

Imagine the Pope using this kind of thing. Think of the reach he'd have

JAMES ROCK, MUSION

was shot dead in 1996 - made a surprise comeback at the California festival.

Rising from the dead, he made an unforgettable appearance alongside Dr Dre and Snoop Dogg, causing the music industry to think about other possible comebacks, from Elvis Presley to Edith Piaf.

But Professor Martin Richardson of De Montfort University in Britain, who earned the world's first PhD in holography, and specialises in holographic portraiture, says this technology is not for digital resurrections.

"Those concerts will always be recordings of the past," he says. "I think it's more interesting to investigate this with living artists who are still being creative."

Richardson is one of about 13 academics in the world in this field, and his task is to find applications for the technology beyond pop concerts.

Illustrating the versatile appeal of holograms already, he notes that in 2008, four years before "holo-Pac", a virtual Prince Charles appeared at a green energy summit in Abu

Dhabi. The prince left the stage with the line: "I am now going to vanish into thin air, leaving not a carbon footprint behind."

Charles then handed over to his brother, Prince Andrew - dubbed "Airmiles Andy" - who took to the stage in person.

In the fashion industry, Kate Moss famously appeared in watery, ethereal hologram form at British designer Alexander McQueen's 2006 Paris Fashion Week finale. In the business world, telecoms giant Telstra beamed its chief technology officer Dr Hugh Bradlow live to Adelaide from Melbourne in 2009 to address a business function.

Perhaps most ambitiously, when Japan bid for the 2022 World Cup, it promised FIFA a truly global experience where holographic players would take to pitches the world over.

While telepresence hasn't yet reached the advanced point where a live, moving holographic projection can be viewed perfectly from all sides, Jun Murai, the Keio University professor and internet pioneer enlisted to develop the bid, insisted "full court 3-D vision" was no fantasy. He claims Japan could have been ready by 2022, had it not lost the bid to Qatar.

Within the next decade or two, Richardson believes holographic telepresence will transform Hollywood. "3-D is a poor relation to holograms," he says. "In another five years there will be a type of TV where you won't need 3-D glasses and it will contain a holographic element."

Fifteen years on from that, Richardson says, the "days of



A holographic image of model Kate Moss used at an Alexander McQueen fashion show. Photo: AFP

sitting in a square box in front of a screen will be gone. The cinema will be like a Greek amphitheatre with people projected onto the cinema floor like a sci-fi movie".

The cameras for this are being developed, he says, and the actors will need to adapt.

One man stands to profit enormously if all this catches on - Uwe Maas. A German events entrepreneur, he developed a passion for laser technology in the early 1990s and engineered the world's first 3-D laser projector - the Musion Eyeliner.

In 2003, he partnered with music events veteran James Rock to set up a private company, Musion, and - crucially - patented the holographic technology the company had developed. This meant that from Tupac to Prince Charles and Girls' Generation, virtually every hologram in the world must go through Musion or one of its subsidiaries or sellers.

Rock explains that getting that

retardant, optically clear mylar foil, which, he says, "nobody else in the world has access to".

"In terms of knowing how to do this and doing it well, I honestly can't see anybody else coming along," adds Rock, discrediting fears Chinese copycats could trump the firm in Asia.

Although the technology has been around for more than 10 years, it's been slow to hit the mainstream. A 1998 attempt at holographic performances by SM Entertainment with the now-defunct boy band H.O.T. fell flat.

But a series of leaps forward in much brighter video projection, the rise of high definition viewing and the development of a mylar screen to replace glass, which needed very specific and dark viewing conditions, have made holograms more realistic, and commonplace. According to Richardson, some holograms are now so realistic they make "the hairs on the back of my neck stand up".

While fans may welcome holograms as a spectacle, might they not feel short-changed at being deprived the chance to share the same air as their idols?

Monica Bedi, trends editor at K-PopMusic.com, says fans in Korea are excited about V-concerts as they bring a "new element" to live shows. The holographic performances can be flattering to the artists, but she doesn't believe they will replace the real thing: "There will always be a market for those who prefer live concerts."

Rock, who agrees that V-concerts primarily complement genuine shows, says the next step for London-based Musion is to make the technology more affordable, and roll it out on a wider scale. According to Richardson, staging a small V-concert would take an outlay of HK\$300,000 for the hardware - projector, cameras and specialist screen, and a big bandwidth - while the cost is closer to HK\$3 million in an arena. "But you'd pay for that kit after two to three concerts," he says.

What began as a phantasm could also have serious

applications. In the medical world, the "holographic patient" solves what Richardson describes as a major problem in Europe for finding suitable subjects and corpses for trainee doctors to practise on.

"Even if you are a medical practitioner, it's impossible to plan an important operation," says Richardson. "But with holograms you'd be able to take MRI scans and layer that data into the projection, doing a dry run on a tumour removal, say, to be more precise on the real thing."

And at the Indian elections last December, Gujarati politician Narendra Modi showed the political power of telepresence. As he sought re-election, Modi projected 26 holograms of himself onto stages around the province, telling voters: "I'm delivering this speech to you in 3-D to show you that India is not being left behind in technology."

Trucks drove Modi into villages he would never otherwise have reached. The 62-year-old won by a landslide.

Musion is in talks with the United Nations about other humanitarian applications and sees telepresence being used by "the bigger faiths".

"Imagine the Pope utilising this kind of thing. Think of the reach he'd have," Rock says.

While the technology still needs some tweaking - currently the picture is stronger the nearer it is to the signal - Rock says that demand for Musion's monopoly is multiplying.

"One of will.i.am's personal assistants told me recently that Will is now on 750,000 air miles with American Airlines.

"You can imagine what his life is like. Will is building a tech centre in Los Angeles where he wants to spend more of his time and have the ability to beam himself out of, to avoid so much travel," says Rock.

"I know lots of people who want a better quality of life by not travelling so much. Holograms for us have never been about replacing reality - it's about adding to what's out there, and making what exists better."

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Uwe Maas (left) and James Rock, co-founders of Musion.



Psy performs at the hologram hall. Photo: YG Entertainment in association with Korea Creative Content Agency and KT