

A CoSTAR National Lab report



The Future of Grassroots Live Music



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▲ Above and previous page, Paper Crowns at Strange Brew

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CoSTAR National Lab

CoSTAR National Lab is one of the core delivery hubs within the CoSTAR network, a £75.6 million investment by UKRI delivered by The Arts & Humanities Council to support innovation-led growth in the UK's creative economy. Led by Royal Holloway University, the CoSTAR National Lab

is delivered via a series of industry and research partnerships including; Pinewood Studios, Disguise, BT, Magnopus, University of Surrey, Abertay University and the National Film and Television School. The National Lab collaborates, innovates and experiments across the UK's screen and performance sectors, supporting UK creative companies to innovate and grow ethically, sustainably and inclusively. The research is supported by Arts & Humanities Research Council, Grant Ref: AH/Y001060/1. We are grateful to all our interviewees, who generously gave us their time and insight in support of the research.

This report is dedicated to Laryssa Whittaker, 1971-2025, whose contribution to this research was invaluable.



Executive Summary

Our research draws on interviews with 66 industry professionals from across the sector, shaping our innovation roadmap for grassroots live music in the UK.



▲ Bluman's MASS performance, The Bath House

◀ Previous page, Town Houses on stage at Strange Brew

Grassroots Music Venues (GMVs) have complex and far-reaching cultural value: they provide shared social experiences, offer emerging artists their first opportunities, and stimulate local economies. GMVs are uniquely placed to act as live public R&D testbeds for technological innovation, fulfilling a valuable role in future-proofing the sector.

This report gives practical form to the Government's recent policy statement in July 2026, 'Turn it up: Our plan for music', announcing the increase in the Music Growth Package: we show how grassroots venues, artists and creative technologists working in partnership with funders of R&D can turn national music policy into testable, place-based innovation. Our report demonstrates how this policy framework can be enacted through targeted R&D with grassroots venues, artists and creative technologists. The Government has begun to implement this policy shift by announcing cutting business rates bills for pubs, social clubs and grassroots live music venues across England from April 2027, which comes on top of a 15% cut in 2025-6. Our research seeks to add to existing forms of support but also show how innovation can strengthen the capacity of venues and artists to reach audiences, test new formats, gather new forms of data and ultimately build more resilient business models.

With a remit to examine how new and emerging technologies will shape the creative industries over the next six to seven years, CoSTAR National Lab stands behind the ambitions of the Government's 'Turn it up' policies. As part of the Government-supported R&D ecosystem, working in collaboration with MusicFutures and our network partners, CoSTAR Live Lab, we are reimagining what live music performance can become in an AI-augmented creative economy.

Within this report we have identified practical opportunities for technological intervention that respond directly to the needs of the grassroots live music sector. Our interviewees were clear that this is an area requiring urgent support: not only financial but also in terms of access and in terms of education. Access to tools, expertise and to testbed environments is needed to reach audiences, develop new formats and build more resilient models for live performance.

The CoSTAR Network will continue to explore further collaboration across the live music ecosystem: CoSTAR Live Lab is currently funding challenges around intelligent venues that can sense, interpret and react in real time. CoSTAR National Lab are currently developing an AHRC BRAID-funded technology demonstrator exploring responsible AI in live performance. Our aim is to

ensure that innovation in the sector is practical, ethical and grounded in the needs of artists, venues and audiences.

For this report we interviewed 66 live music industry contributors, asking them: How do you value live performance? Why do you work in live music? How do you see the future of live music? We spoke to artists, agents, managers, promoters, and GMV owners and operators, making sure that we covered the widest possible range of attitudes to technology, from the tech-savvy to plug-and-play performers (see Appendix).

According to our respondents, larger technology or music industry companies dominate the space, and there is little support for developing new approaches to using technology at grassroots level. The role of CoSTAR National Lab is to explore how technological innovation might make a difference in this space, addressing concerns conveyed to us, and trialling ideas in front of audiences - the four Case Studies in this report show how technology might become an enabler for a thriving and more equitable grassroots live music economy.

Following a series of reviews by government on voluntary levies on arena shows, Government and sector bodies have proposed VAT reductions and business rates reform as ways to support GMVs, but there has been little focus on how R&D can support the technological capabilities of GMVs, helping them innovate, grow and attract new audiences. With the recent arrival of the

Government's 'Turn it up' strategy and series of announcements this has begun to change, shifting the perspective increasingly towards supporting interconnected strands of infrastructure, skills development, innovation and technology.

This report proposes a tiered model through which technology can support and sustain grassroots music venues. Our case studies operate across three economic time horizons: immediate cost reductions through portable production; medium-term diversification of revenue through virtual and hybrid ticketing; and longer-term future audience development through participatory experiences. Taken together, these findings suggest that R&D should be positioned not as a standalone solution, but as one instrument within a broader policy mix, offering structural safeguards against any risk that in-person attendance might become undermined by attendance at virtualised performances.

Under-funded areas of public life including grassroots music venues and public libraries should not be overlooked as viable recipients of R&D funding, with outputs evidenced to the public. Such spaces have been subject to significant decline in recent years, hence the urgent need for funding support, and for making visible the results of R&D.

Inequity in the system, spoken of by many of our interviewees, also needs to be visibly addressed. Existing business models are predicated on a system that is not sustainable for many, and in a



▲ Townhouses perform at Strange Brew

future where AI and other emerging technologies may help make more equitable solutions possible. A future version of our current grassroots music ecosystem should allow people to participate in transparent and trusted equitable value exchange, whether in-person, online or in hybrid formats.

The Case Studies

The report describes outcomes of the Grassroots Music Venue R&D competition launched in partnership with the MusicFutures Creative Cluster in Liverpool and with the Music Venue Trust. The competition was informed by CoSTAR National Lab research into grassroots music during 2024-5.

Four creative companies, Bluman Associates, Sonalux, Studio Tonto, and Megaverse were awarded from 45 nationwide applications. Each of the four Case Studies describes a pioneering collaborative R&D project trialling new ways of connecting artists, audiences and venues in support of a more equitable live music ecosystem. With CoSTAR National Lab technical and research

support the companies developed, tested and assessed their projects first in rehearsals and then in front of audiences, some in-person, others online. Performances were staged at GMVs in Liverpool, Bristol and London during early 2026. Each Case Study responds directly or indirectly to the issues raised by our interviewees.

Themes

Our interviews with 66 live music industry contributors were analysed by a team of multidisciplinary CoSTAR researchers (see Appendix: Methodology). This revealed three major themes:

#1 Live is Transforming

#2 Access to Technology

#3 An Equitable Ecosystem

These themes in turn break down into 12 design principles where we have identified that our participants see live music developing in the future, described in the report. Our Inclusive User Futures team also surveyed audiences at the performances to gain detailed feedback about their experiences, referenced in the Case Studies. The Case Studies show how creative companies and artists have responded to issues raised by our grassroots live music interviewees, and how they have created functioning prototypes for real audiences.



The Future of Live Music Three themes

#1 Live is Transforming

Audiences increasingly encounter live music before, during and after the event, across physical and digital spaces. Audiences want to interact with, contribute to, and personalise the live experience, deepening engagement and improving access.

Audience Participation
Personalised Live
Audience Insight
Inclusive Access

#2 Access to Technology

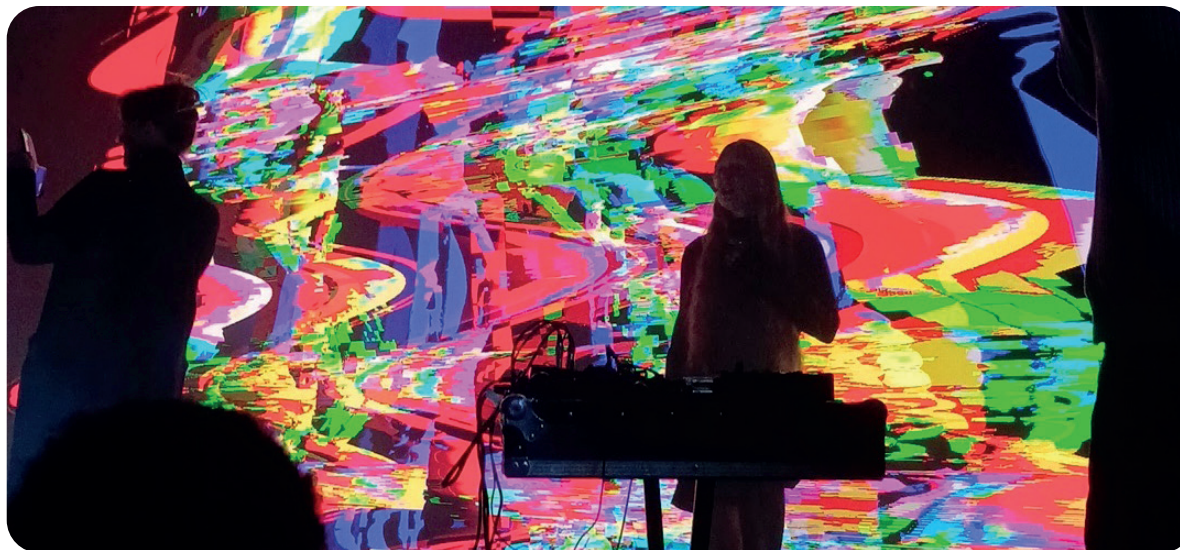
New and emerging technologies have a fundamental role to play in shifting and extending the reach of live music performed in GMVs. Democratised access to technologies can help change the way live music is made and experienced.

Artist Design Worlds
Hybrid Performance
Augmented Venues
Responsible AI
Portable Production

#3 An Equitable Ecosystem

Benefits from the live music industry predominantly flow to major players—labels, ticketing monopolies and technology giants—while smaller players such as GMVs and emerging artists struggle for survival. A healthier ecosystem demands a fairer distribution of value.

Cooperative Networks
Distributed Ticketing
Trust & Transparency



▲ Bluman's MASS performance at The Bath House

The Crisis in UK Live Music

An overview

Renowned for its thriving and diverse music industry, the UK faces a crisis as Grassroots Music Venues (GMVs) close at an unprecedented rate, prompting alarm and multiple reviews by government and industry sectoral bodies.

What has changed

The UK Government's decision to adopt the Grassroots Levy policy, where industry-led contributions are made from major stadium and arena ticket sales for distribution into the grassroots sector has been a major recent turning point for the sector. The LIVE Trust and the Liveline Fund were set up as the vehicle for this redistribution, bringing transparency and sector expertise to the implementation of the Grassroots Levy. Government says the Levy will deliver up to £20 million annually through the LIVE Trust to bolster the UK's grassroots music sector [DCMS, 2025b]. The stated anticipation is that this will begin to make a noticeable difference in the sector, as funds are distributed during 2026 and beyond. Since the levy is voluntary the promised figure of £20 million per year to support the

grassroots ecosystem remains uncertain at the time of writing.

The policy landscape has widened. In July 2026 UK Government issued 'Turn It Up: Our plan for music' [DCMS, 2026b]. This announced that The Music Growth Package (MGP) for 2026-29 has grown to £45 million, supporting 40,000 artists and professionals, with money from the government and National Lottery. This announcement is a development upon previous policy and an increase in the package which was initially worth up to £30M over three years, where Government worked with Arts Council England to support UK emerging artists with touring, performance, mentoring and export opportunities [DCMS, 2025b]. In June 2025 a Parliamentary Select Committee on the fan-led review of the

live music sector was set up, using data from the Music Fans Voice survey, and the review chaired by Lord Brennan was published in early 2026 [DCMS, 2026a]. Committee Chair Dame Caroline Dinenage MP highlighted the need for vigilance: ‘Despite some headway... venues are still shutting their doors at an alarming rate’ [DCMS, 2025b].

Grassroots music is not simply a smaller version of the commercial live music industry. Policymakers have engaged with the active public campaigns of sectoral bodies such as MVT and LIVE, acknowledging that ‘Grassroots is where experimentation happens, where new genres are born... It is the driving force that serves as the foundation of the entire music industry’ [UK GOV, 2024]. Over a longer period, since 2021, over £7m has been privately invested in GMVs, artists and promoters, and in 2023 the Arts Council invested £500,000 in GMV infrastructure with the aim of bringing about a ‘vibrant’ network of venues by 2030 [Arts Council, 2023].

Government review in 2024 first recommended a Grassroots Levy to support GMVs and improve ticketing fairness in a sector where dynamic pricing has been the subject of much public debate [DCMS, 2024b]. This aligned with the Featured Artists’ Coalition call to fight punitive ‘cartel-like fee-setting behaviour’ and seek fairer merchandising rules [FAC, 2023]. In a 2025 survey of 8108 live music fans, half of respondents had experienced dynamic or surge pricing, and only 1 in 10 agreed it was clearly communicated in advance. Survey responses have indicated strong support (93%) for the Grassroots Levy, and asked policymakers to focus on ticketing, pricing, resales, GMV closures and safety [Music Fans Voice, 2025]. Driven by the government’s work on streaming, a consortium of independent UK record companies agreed on principles to deliver improved incomes from streaming for creators [DCMS, 2025c].

Recent data also shows the grassroots ecosystem finding support mechanisms to manage challenges and help secure its own future. The MVT describes Music Venue Properties as ‘the National Trust of Music Venues’, taking GMVs out of the commercial sector and into community ownership. The MVT reported a 97.6% success rate in resolving highly disruptive planning objections for GMVs [MVT, 2024]. By the end of 2025, 38.1% of GMVs were operating as not-for-profit entities (as Community Interest Companies, Community Benefit Societies, and Registered Charities), up from 33% in 2024, using business models that ‘protect venues from speculative commercial pressures and embed them permanently within their communities’ [MVT, 2025]. Venues also reported ‘improved access to grant funding, lower borrowing costs, and stronger relationships with local authorities’ while the sector is ‘more organised, better represented, and more clearly respected and understood at every level of decision-making’ [MVT, 2025].

What remains unresolved

The sector still faces formidable challenges. The 2024 Government review observed that uncertainty about business rates levels is ‘a new cliff-edge’ for GMVs, which came about in 2025 when business rates relief in England was reduced from 75% to 40%. The increase of rates, alongside Employer National Insurance contribution increases, forced many GMVs to cut staffing costs radically. Total employment in the sector reduced by 19.8% from 30,865 to 24,742 people in 2024, the sharpest reduction ever recorded by the MVT [MVT, 2025]. Business rates, VAT and employment costs cannot easily be separated from innovation. When venues lose staff, they have less time and fewer people to test new approaches to audience development, hybrid performance, ticketing, production workflows and accessibility.

“

Despite some headway being made on an industry-led levy to support grassroots music, venues are still shutting their doors at an alarming rate

Dame Caroline
Dinenage MP

Across the wider music sector, however, employment rose to 220,000 in 2024, up 2% from 216,000 in 2023 [UK Music, 2025]. The contribution of music to the UK economy in 2024 hit a record £8 billion in Gross Value Added (GVA), but surveying 1,300 musicians found they now received fewer invitations to perform and faced prohibitive touring and other costs [UK Music, 2025].

Touring remains an unresolved area, despite its importance in the 'artist development cycle' [MMF, 2025; UK Music, 2025]. There are now up to 74% fewer UK/international tours than pre-pandemic, with shows concentrated in major cities, leaving 17 towns/cities off the UK touring map; in 1994, tours averaged 21.9 shows in 28 locations; by 2024, this averaged 10.9 shows in 12 locations [MVT, 2024]. In 2025, 59.3% of GMVs were not included on tour routes: 475 GMVs had no major promoter activity [MVT, 2025]. UK Music reported that grassroots artists have difficulties touring: 'The biggest problems artists face is that income from touring is not keeping pace with the cost of touring, alongside a downward pressure on consumer spending' [UK Music, 2025]. Some find touring China 'a financial and spiritual lifeline as returns increasingly diminish on home soil'; the band KVB said 'the venues in China are often equipped with beautiful LED screens, I wish we had the funding to make our venues this good' [Balmont, 2026].

When Harry Styles announced 67 dates for a 2026 'world' tour 'fans were quick to notice it actually only includes performances in seven cities' with several residencies [Dean, 2026]. In response to criticism of making fans travel, Harry Styles' Instagram announced that '£1 from every ticket going to the LIVE Trust, directly supporting the UK's grassroots venues... it unlocks serious, long-term support for the base that holds the whole live music ecosystem together' [Music News, 2026]. Yet redistribution of this kind will not solve regional reach.

Venues and artists also need ways to make smaller-scale touring more viable, through better planning tools, shared data, lower-cost production systems, and hybrid formats that extend reach without seeking to replace the value of being in the room.

Dynamic pricing, resale and unclear communication have affected audience trust in the live music ecosystem, but this cannot be addressed by regulation alone. GMVs, artists and promoters need enhanced ticketing and audience-relationship systems that show who is attending, who might be excluded, how audiences discover shows, and what pricing or access options might support affordability and financial sustainability.

What this report adds

The Government's 'Turn it up: Our plan for music' plan directly references the research described in this report. The Government's plan for music addresses the core area of 'Innovation Funding' and includes a case study of Music Futures in Liverpool along with their R&D collaboration with CoSTAR National Lab supporting grassroots venues in Liverpool (see Case Studies 2 and 3 in this report).

Regional initiatives have deepened understanding of local live music economies and reflected the Creative Industry Sector Plan 2025 and its focus on UK regions and clusters. MusicFutures have mapped GMV types against locations in Liverpool [MusicFutures, 2026], the London Grassroots Music Map was launched in May 2025 [TFL, 2025], and Manchester has signed up to UK Music's Local Music Action Charter [Music Week, 2025].

These initiatives show the importance of gaining leverage through local knowledge. Engaging with localised audiences and 'tribes' of music fans is one way forward for grassroots music. Some suggest



that a ‘scene-based’ approach should support artists from their first track to a foundation of listeners and live music followers: ‘The traditional blueprint of creating mass-market superstars no longer fits today’s hyper-fragmented, oversaturated market. The dominant response—‘chasing virality’—is becoming counterproductive’ [MIDIa, 2025]. For GMVs, this points to a practical R&D agenda: understanding local audiences, testing lower-risk formats, building direct artist-fan relationships, and designing technologies for venues with limited budgets and uneven infrastructure.

Technology now features strongly in the live music industry since the advent of The Sphere in Las Vegas and ABBA Voyage in London. Elsewhere, Metallica’s live performance in Mexico City is made available as an immersive music experience on Apple Vision Pro, filmed using Apple’s specialised immersive video cameras [Apple, 2025]. Napster plans to create virtual 3D spaces allowing fans to ‘attend concerts and give musicians or labels the ability to sell digital and physical merchandise’ while making a wider range of metrics and analytics available to artists to help them better understand audience behaviours on the platform [Guardian, 2025]. These examples demonstrate the direction of travel, but there is a risk that the gap between large-scale productions and grassroots venues will be widened unless the sector can access affordable, usable and portable forms of R&D.

To date there has been little focus on how R&D can support the technological capabilities of GMVs, helping them innovate, grow and attract new audiences. With the recent arrival of the Government’s ‘Turn it up’ announcement this has begun to change, shifting the perspective increasingly towards supporting interconnected strands

of infrastructure, skills development, innovation and technology such as AI.

‘Turn it up’ cites the UK Music 2025 report, saying that 66% of music creators believe AI poses a direct threat to their professional careers, while 90% are concerned about the lack of protections for their voice, image, and copyrighted work’ [UK Music, 2025]. Considering this, the government has appointed an AI Champion, Sally Davies, Managing Director of Abbey Road Studios who supports ‘an augmentation-first approach to AI Adoption’ for the creative industries [DSIT, 2026]: ‘AI should support human creativity, not displace it. It should help creative workers spend more time on the creative aspects of their jobs and roles.’ Although not formally adopted as policy, the AI Champion’s recommendations are supported by government:

‘AI can improve access to capability for smaller firms. Shared tools, testbeds, guidance, training and anchor institution models can help SMEs, microbusinesses and freelancers access capabilities that would otherwise sit mainly inside larger organisations. If designed well, this can spread opportunity across the UK, including through regional creative clusters.’

The role of CoSTAR Network and CoSTAR National Lab is to support innovation and the growth of creative industries businesses, and we identify some key opportunity areas where grassroots music venues can develop technological capabilities while pursuing financial stability. Policy interventions can help stabilise the sector, while support for R&D capability at grassroots level can help venues to work with artists to act as testbeds for what comes next.



► Jon Collins, Chief Executive, LIVE

We have to nurture the grassroots because if we don't do that, who's going to headline the arenas in five years? Who's going to be playing the Pyramid Stage at Glastonbury in ten years?



Key stats

41%

of GMVs are still experiencing severe financial challenges

Main caption style for all images and graphs.

Source: Music Venues Trust Report 2025

205

Emergency response cases were requested from Music Venues Trust in 2025

Main caption style for all images and graphs.

Source: Music Venues Trust Report 2025

19.8%

Total employment reduced by 19.8% from 30,865 to 24,742 people in 2024, the sharpest reduction ever recorded by the MVT

Main caption style for all images and graphs.

Source: Music Venues Trust Report 2025



▲ Paper Crowns perform at Strange Brew

Mapping the Sector

During 2025, CoSTAR National Lab interviewed 66 people working across live music, a diverse set of artists, GMVs owners and operators, promoters, managers, stage designers, and other industry professionals.

Our consultation revealed key pain points and opportunities for future innovation across the live music sector. Interviewees reflected on how they might envision the sector's future and considered where new technologies and new business models could drive positive change.

The cyclical nature of development in live music emerges strongly from our data, in what the industry refers to as the fan engagement cycle—covering the 'Pre' or preparatory stage, the 'During' stage (the performance itself), and 'Post' performance stage of the live music cycle, whether in relation to touring or to one-off performances.

For this report we have spoken to artists and others central to the staging of live music—please see the Appendix for more on who we spoke to and the types of work they do, and for more on our research methodology. Thanks to these interviews, we scoped and ran an R&D competition in late 2025 to early 2026, resulting in four live music technology interventions, described in our Case Studies. Audiences were invited to feedback on their experiences and participate in these performances (see Methodology Appendix).

Three main areas of insight emerged from our research, and these are described next, along with 12 design principles for framing the future of technological interventions in grassroots music.

Insight #1: Live is Transforming

‘Live’ means connection and engagement between performers and audiences. Audiences very often experience live music across physical and digital spaces—no longer limited to a single place and time. This has changed patterns of music consumption, with audiences discovering music through streaming services, and remotely attending performances hosted on Twitch, YouTube, Bandcamp, Fortnite and elsewhere.

Audiences who may not otherwise have experienced live music can now access it via livestreaming and other immersive formats, delivered on platforms when and where the audience chooses.

Our industry respondents want to enhance the creative possibilities for live music while developing the connection with audiences across these and other platforms. They also consistently showed an interest in enhance what can be termed ‘the fan engagement cycle’ i.e. the experiences of audiences prior to, during and after performances, in a cycle that spans different times and places and links different performances together.

Audiences value distinctive shared experiences whether they happen physically, digitally or across both hybrid and virtual live music performances, bringing a new meaning to ‘uniqueness’. Traditionally, a live performance means a direct and present connection existing between performers and audiences. Shared liveness (the feeling of shared presence, or ‘I’m at a gig’) is an invaluable cultural experience that creates powerful emotional and social connections. Recently, audiences experience live music in both physical and digital spaces—as an indirect result of the COVID-19 pandemic and its impacts on the sector, the increasing maturity of enabling technologies and changes in audience behaviours.



Audience Participation

Enabling audiences to contribute to and help shape grassroots live music experiences

▼ Bluman's MASS at The Bath House



Artists are seeking greater access to audiences before, during and after live music and want to give them ways to contribute to change the direction and outcomes of live music, with or without the use of technology. Artists want to build enduring artist-audience relationships throughout a recurring cycle of interactive audience participation, exercising a greater degree of control than they have at present to build continuity with audiences.

Audience contributions can help build continuity across the fan engagement cycle and should be used to provide audiences with a greater sense of participation and responsibility. Rather than being treated as passive devices for documentation, artists and technologists can turn audience devices into active parts of the performance, enabling participation, expression, and co-creation. In this way, audiences become active contributors to the performance itself.

The artist Feist has incorporated audience participation into her live shows by moving through the crowd while cameras captured both performer and audience members in real time. Images drawn from audience devices and belongings are projected during the performance, inviting attendees to share what they value. This approach to audience participation transforms the live event into a shared creative space, where audience input shapes the visual and emotional texture of the performance, and extend the creative limits of live music.

Artists reported that they would like greater access to audiences before, during and after performances, to open further creative possibilities and develop continuity with audiences. A chat room, as Fred Deakin (producer, performer, creative technologist and researcher) points out, is a 'classic' example of collaborative audience engagement, where real-time audience input can help direct the course of a show; the openness of audiences to working with

technology means that ‘if you had a situation where you can actually delegate tasks within the show to people around the world, that is pretty exciting.’ Other artists and creative technologists note that audiences can add to and respond to performances via simple apps, creating a two-way interaction for live events, ‘like being immersed in a music video’ where audiences can have different experiences each time (Ben Winstone, creative technologist, artist, Octopus Immersive). Audiences are given the capacity to act as cultural and moral agents through participation say researchers [Lopes Ramos et al, 2020], accepting the role of actively engaged contributors.

Shared experiences are central to the development of active audience participation within live music. While technological innovation can enhance performances, it can also risk diminishing the collective, social dimensions that define live experience. The success of ABBA Voyage shows how immersive technology is designed to retain a shared sense of presence, despite this clearly being a carefully crafted illusion, allowing audiences to experience this kind of innovation together. In grassroots live music there remains scope for designing shared audience experiences that strengthen audience connection, supporting more collaborative forms of audience engagement and socially grounded forms of live music.

There are several ways to mitigate the potential distancing effect of technologies, especially where artists have a stake in the platforms used to deliver performances, and where they can encourage direct two-way exchange. Mike Shinoda from Linkin Park offered to produce his audience’s music live on Twitch (#ShinodaProduceMe) with fans there helping to find the right vocalists.



► Bluman’s MASS performance at The Bath House

Personalised Live

Adaptive and responsive audience experiences across physical and digital environments

▼ Townhouses perform at Strange Brew



The personalisation of engagement is sought by many, who also want to provide audiences with opportunities for active participation. Personalisation enhances the fan engagement cycle through a range of strategies including the gamification of parts of the live music experience, the addition of virtual elements to performances, and the application of responsible AI to the running of events and tours.

There are multiple stages at which personalised experiences are possible for audiences across the fan engagement cycle:

‘[We can] use technology even before the show started, add interactive elements, incentivise and gamify things you can collect along the way when the show’s happening, all the virtual things that go around that show, which you can interact with, which you can personalise’ (Pete Kirtley, CEO, songwriter and producer, Level33).

New technology can develop forms of enhanced accessibility that can personalise experiences for different audience members. For those with hearing impairments creative solutions are possible, perhaps computationally generating sign language for disabled audience members. Other artists envision how technology could translate and display lyrics with the help of AI, making the consumption of live music individualised and enhancing accessibility (Miss Yankey, performer and songwriter). The personalisation of virtual or hybrid live music experiences are felt by audiences across the fan engagement cycle, so that it feels like ‘the musician looked at you during the performance, just you, and so when you buy a ticket for you and your partner and put out a message for them, you come away thinking, ‘it really felt like I was there’’ (Ben Winstone, creative technologist, artist, Octopus Immersive).

Audience Insight

Audience development through ethical data, interaction and engagement systems

▼ Audience at technical rehearsals at Royal Holloway's Future Studio



Artists seek closer relationships with audiences through access to audience data and new models for ticketing, while others seek a more direct day-to-day relationship with audiences, developing and deepening the emotional connection between artists and audiences. This emotional connection is an unchanging aspect of live music, despite the continually evolving nature of live music and technology (James Sandom, UK Founder, Red Light Entertainment). Sandom describes what the future of audience development and audience continuity might look like:

‘I do think [we need] the use of AI or other technologies to bring live experience in a more immersive form that involves performance and projection and engagement right through-the-spine of a front-to-back experience for a ticket holder, that is exciting. I look at a world of possibilities where your engagement can be in your phone, it can be in anything. It can be from the moment you transact to the moment you leave the venue. In that process, there are so many ways of using technology to make ticket holders feel permanently engaged, more loyal, more likely to transact left and right, return, revisit the catalogue, stream the catalogue, buy deluxe unique merch... building brand loyalty. The routes to do that are becoming increasingly present’ (James Sandom, UK Founder, Red Light Entertainment)

Effective audience development is understood as a coordinated effort across artists, promoters, and venues, supported by improved access to audience data and more integrated communication strategies. This includes the ability to engage audiences directly, not only at the point of ticket purchase, but throughout the full fan engagement cycle—before, during, and after live performances.

Developing these more continuous relationships enables artists and their collaborators to build sustained connections with audiences, moving beyond transactional interactions toward

longer-term engagement. At the same time, careful and transparent management of audience data is paramount, ensuring that practices remain compliant with GDPR and aligned with audience expectations around privacy and trust. Audience development is not limited to expanding reach, but involves deepening relationships through ongoing, data-informed engagement that supports both artistic and commercial sustainability within live music.

There is scope for new approaches to managing and marketing the IP 'brand' of artists, moving beyond the existing use of social media. Social media and saturated markets mean that pathways to touring, recording and promoting are no longer as lucrative or predictable for many artists:

'It's all so noisy, so noisy. We need anything that can create a continuum between the experiences of getting a new record, making a video, because they spit it all into social media and it just gets swallowed up in a minute. So, I'm looking for something that'll connect the dots' (Matthew Hawn, Managing Director for Compass, Map & Key).

In seeking to join these dots, many artists struggle with the demand to maintain a responsive social media presence and the need for continual self-promotion in an extremely crowded marketplace. Some artists find that unless they are picked up by a Spotify algorithm it is very unlikely that many people will hear their music. Even when artists are placed on such playlists, data silos exist across multiple platforms (e.g., Spotify, social media) and intermediaries such as Ticketmaster. This makes it difficult for artists and for those that work with or represent them, to gain access to fan data and obtain a holistic view of audiences. Under-utilisation of, and a lack of granularity within the data may prevent artists from fully developing and targeting their audiences, limiting their ability to tailor performances and plan tours effectively.

Many artists expressed an interest in adjusting their shows based on audience response. Some artists acknowledge that while data can provide valuable insights, it is equally important to act intuitively when making creative and business decisions and not be hampered by too much data or the necessity to follow it too closely. Likewise, a sole focus on maximising revenue extraction from fans through data-driven strategies could be detrimental to the originality and spontaneity of live music at grassroots level. A potential approach is to focus on creativity and connection, perhaps developing new formats for genres like electronic music acts to be promoted and given places to perform, which might be lacking at grassroots level.

▼ Bluman's MASS performance at The Bath House



“

I would like there to be a way of connecting with my audience that transcends social media because social media can just be so depressing and anxiety-inducing and take away from the creative flow

Shivum Sharma, DJ and musician

Inclusive Access

Technologies that reduce barriers to participation in live music experiences

“

The sad reality is that the people who can't afford to work for nothing, or who lose money on projects, just leave the space

Ed Seed, musician and performer

Virtual and hybrid live music performances are a good way to build confidence and accessibility for new audiences, whilst enabling discovery of new musical experiences. Technology enabled participation can also provide an opportunity for audiences to sample the artists performing GMVs before going in person and can provide another avenue to support artists dealing with career progression challenges.

Virtual performances can build confidence in people who have not visited GMVs before. 'A virtual gig is going to really work in your favour' by supporting the joint aim of affordability and inclusive access (Kelly Betts, Head of BBC Introducing, BBC). 'If you can't come to this show in person, you can pay four or five quid and watch it online' says Ed Townend, former Technical Manager & Promoter, The Moon. Live music will also have an 'afterlife', since 'there'll be an opportunity to see these bands play forever,' increasing access to live music for people who cannot attend in person or who may have disabilities (Allan Scorer, GMV director, The Little Buildings).

Nightlife can feel unsafe or unwelcoming for women and marginalised groups, including the LGBTQ+ community, while transgender individuals may face exclusion and negative experiences related to ID checks and gendered language. Other spaces may not adequately consider neurodiversity or sensory sensitivities. There is also lack of any standardised code to represent the type and safety of spaces such as GMVs. Technology could provide a route to communicate accessibility factors to audiences.

'Clubs are not for everyone. In fact, the noisy and dark space with flashing lights can be a very hostile environment to many people' (Richard Lemarchand, game designer, educator, and DJ).

The PRS Foundation manages several programmes which help artists from disadvantaged backgrounds, as well as Women Hit Makers, and the Power Up program working with black artists and black management. These are designed to support artists who 'wouldn't really have the same opportunities as other people because of the endemic inequity and prejudices in society' (Nitin Sawhney, composer and performer). Nitin Sawhney highlights the importance of a level playing field for performers:

'My main thing is being able to reach audiences as an equal to anybody else, because it's been an internal struggle to do that as somebody who is marginalised by virtue of my ethnic origins.'

In addition to the diversity of audiences, respondents also pointed to performer diversity as a sore point, indicating that performers from disadvantaged backgrounds face additional difficulties in progressing their careers:

'The real worry about the future of music is it's getting more and more elite... there are loads of people out there who don't have any of that support, who would also be equally talented, or even more so, and they're not getting a fair crack of the whip' (Elaine McGinty, GMV director, The Fiery Bird).

With new technologies, active audience participation, personalisation and access to data via distributed cooperation networks is possible (as described in the following sections of this report). New models of virtual and hybrid performance support the continued richness and growth of the sector by combating the conditions faced by artists dealing with the challenges of career progression.

Case Study 1

MEGAVERSE

Where

The Bath House, London

Saturday 7 March 2026

Audience, Afternoon: 97 Evening: 145



Who

Megaverse are a Bristol-based 'interactive studio that uses digital innovation to develop bespoke immersive experiences' inspired by and working across theatre, film, gaming, storytelling and the visual arts. Projects have included an immersive VR production of Frankenstein for the National Youth Theatre, and Game Changers for UKRI, a free-to-play two-part live action narrative game designed to spark collective action and conversations about our climate crisis.

<https://www.megaverse.co>

Townhouses are a high energy indie rock band forged in Bristol's DIY scene and now based in London. Blending classic rock, indie sleaze, and psychedelia, they have built a reputation for electric live shows across the UK and Europe. On the night they were supported by

Paper Crowns.

<https://www.instagram.com/reel/DVWmApViNdD/>

Strange Brew's eclectic programming and professionalism have made it a cornerstone of Bristol's contemporary underground scene. Acts that have played Strange Brew include: Djanjo Django, Last Dinner Party, Black Country New Road, The Horrors and Reggie Watts.

<https://www.strangebrewbristol.com/info>

Case Study 1

What the audience saw

Large-scale LED screen visuals were driven by real-time audio from the band, the visuals linked to their instruments and their movements. The visuals were seen by both the in-person and online audience, who influenced these remotely, creating a dynamic three-way relationship.

The LED screen in the venue was synchronised with the online visuals generated in real-time, in response to audio from the band, as well as depth-camera movement in the venue, plus data from the audience engaging with the performance online.

Built around a set from Townhouses, the MegaStage technological platform was designed to integrate audience participation directly into the experience, while recognising that different audiences in-venue or online may want different ways to engage with live music. It is also capable of delivering immersive 360-degree video to the online audience.

Audience members:

“I really like the fact that there were people that weren’t here and I can enjoy what they were enjoying”

“A lot of grassroots artists don’t get that production, it’s really nice to see on the scene”

What the audience said

Joy and excitement, high enjoyment of the interactive elements, plus a recognition of the hybrid format as overcoming barriers to accessing the performance. In-person attendees found the experience ‘unique’ and ‘futuristic’ with a strong sense of connection felt due to the visuals and the hybridised nature of the in-person and virtual performance. All but one person wanted to see the experience online after seeing it in-person.

The online audience, while smaller, had a strong sense of feeling present in the venue (62% of these people felt the interactive elements made them feel more involved in the performance). The online audience also enjoyed their sense of connection with the band, who read out their comments and responded to their ‘flame’ reactions during the gig. Several noted that this made them feel seen and included. Online respondents also mentioned that an online gig that allowed live interaction with the band was new to them.

What’s needed next

Megaverse’s prototype system is intended for use by independent GMVs, operated by existing technicians and crew using familiar workflows, in the same way lighting or sound would be traditionally employed. The long-term costs of running the technology would need to be covered by an affordable ownership model and sit within an ecosystem that offered both support and access to funding and regional live music innovation testbeds and skills networks.

What this shows

The event tested two areas of research, first by offering the audience an opportunity to influence the outcome of the show through **Audience Participation**– a key design principle of our research (**Insight #1: Live is Transforming**).

The event also tested design principles in our second theme (**Insight #2: Access to Technology**), making the show available to both in-person and online audiences, and trialling a **Hybrid Performance** ©, using affordable technologies easy to set up and run **Portable Production** design.

“

Being able to interact online was a novel experience – made up for not actually being there in the live audience

“

He read through our comments! They shouted me out, very cool!

Rosella
band is amaz
course!



Insight #2: Access to Technology

New and emerging technologies have a fundamental role to play in shifting and extending the reach of live music performed in GMVs. Many of those we spoke to agreed that these technologies will help change the way live music is made and experienced.

New and emerging technologies have a fundamental role to play in shifting and extending the reach of live music performed in GMVs. Many we spoke to agreed that these technologies will help change the way live music is made. There is a real need for democratised access to this technology, they said, ensuring affordability, usability and the reduction of financial and creative risk for artists and others.

The primary challenge is to help artists and others to build and maintain a strong sense of connection between artists and fans. A central counterargument encountered in our interviews and in some public discourse around new technologies is that these technologies may, under certain conditions, hollow out rather than sustain grassroots culture. This concern reflects the possibility that virtual formats could displace, rather than extend, in-person experience. This is a risk which we acknowledge, suggesting that this may be mitigated by the cooperative and artist-controlled models we advocate in later sections of this report. The policy and funding interventions discussed at the conclusion of this report may therefore be seen as offering a set of structural safeguards against any risk that in-person attendance could be undermined by attendance at virtualised performances.

The evidence suggests a more complex dynamic is at work. Hybrid and virtual formats are best understood as supplementary to in-person performances, while they also have a unique capacity to extend access to grassroots music for new audiences and can also enhance audience engagement in novel and potentially transformative ways. In this sense, virtual formats should be seen as augmenting rather than replacing the primacy of physical attendance. As can be seen in our case studies, audience responses note the novelty and accessibility of hybrid formats precisely because they are different, not because they can in any way replicate liveness.

However, this complementary relationship between in-person attendance at a gig and attendance via a virtual format is not fixed. As we have seen, live is transforming, and this relationship between the real and the virtual depends on a set of conditions, including: 1. whether economic incentives favour virtual over physical formats; 2. the degree of control exercised by platform intermediaries in shaping virtual formats; 3. the strength of social infrastructures that supports in-person attendance, or the erosion of these, as seen since the COVID pandemic; and 4. the extent to which creative practices can adapt to virtual constraints and adopt these as supplementary.



 **YAMAHA**

Fender

Artists Design Worlds

◀ Previous page, Townhouses perform at Strange Brew

Persistent digital environments across platforms, digital spaces where artists extend their live worlds and audience relationships

Artists want to invite fans deeper into their creative worlds and maintain a connection with them there – during performances and over time. Blending these artist worlds with live, digital, gamified, and immersive elements is a way to extend the fan engagement cycle in new and creative ways. The excitement and novelty of experiencing a favourite artists' music translated into a different performance medium cannot be underestimated:

'Marshmello did the first ever Roblox concert, and my now-sixteen-year-old, who would've been 10 or so, it blew his mind: 'How does this DJ character invade my gaming space and create this experience?'" (James Sandom, UK Founder, Red Light Management).

There are many ways that augmented live music can differ significantly from in-person performances. Artists can encourage interactions with an audience, engage with user-generated content (UGC) in their worldbuilding, and allow audiences to play dynamic roles within game-like creative environments: 'in-between a game and a performance, the audience can just jump around inside the

world and still have interaction with the performer' (An-Ting Chang, multidisciplinary artist and former artistic director/CEO of Kakilang, formerly Chinese Arts Now).

Artists we spoke to describe how they have crafted bespoke worlds tailored for specific events and 'spun up' as immersive environments, deliberately blurring the lines between gaming, live music, and immersive interaction in engaging and creative ways. The fluid exchange made possible by these technologies enables attendees to access a live feed in a two-way and perhaps gamified interaction, so that, for instance: 'people going into the game can see what's happening in the real world, and people at the real-world event can see what's happening in the game-world' (Roman Rappak, musician and producer, Ristband). Bespoke artist worlds can carry strong narratives originating from the artist, enabling their storytelling to unfold over many platforms, including artist-owned systems.

While artists may see the creative potential for virtual, online worlds there is also a strong sense of ambivalence, for many, about the muted, distanced and remote nature of audience experiences within such environments. Wreckage Systems is a generative live music stream broadcasting 24/7 on YouTube, part of the 65daysofstatic technological and creative sphere, and one that is 'playing into the worldbuilding of some other virtual space' (Paul Wolinski, keyboard player, 65daysofstatic). This infinitely generating parallel world is also a critique of online virtual worlds, 'a lament about the alienation that comes with online broadcasts in place of real-world, human connection, a sarcastic response to the pressures placed on musicians to churn out endless 'content' and 'experiences' to drive 'engagement'" says Wolinski.

Hybrid Performance

Integrated physical and virtual live experiences operating simultaneously

▼ Townhouses in technical rehearsal at Royal Holloway's Future Studio



Immersive and real-time game engine technologies can extend live music performances beyond the walls of GMVs, connecting shows with audiences remotely, in a seamless blend of physical and digital. When harnessed, technologies are a vehicle to connect artists with their audiences directly, and remotely, at scale and at different stages of the fan engagement life cycle, a powerful combination for live music.

Hybridisation might include events at which a privileged or differentiated kind of access to artists is gained, livestreaming to a large remote audience, showing performers from backstage before they give a live performance to a smaller audience in-person. Will Page, music industry economist, pointed towards one example of hybridisation on Twitch: the guitar rehearsals by well-known artists Matthew Heafy from heavy metal band Trivium, who described how his income from Twitch was roughly equal to that from music streaming, despite his audience on Twitch being, at that time, a little over a tenth of the size of their music streaming audience: 'I'm happy to say Twitch has become a second job. When I'm at home I make significantly more from Twitch streaming than I do with Trivium... I'm able to make money doing what I should be doing off tour, staying conditioned, practicing, and being ready for a tour at any given moment, it's amazing and we really have a supportive community' [Page, 2021].

This enables engagement at scale and gives artists another potential income stream. Hybrid experiences push towards the democratisation of access technologies, allowing artists to connect to dispersed audiences.

One opportunity area is the technical capacity of livestreaming to connect diverse and geographically distributed audiences and make them feel welcome in a shared space: 'Nowadays it's all about communities of interest, that can be geographically far away but able

to connect’— this might be virtually in connection with music they have a positive relation to, or at hybrid events that they may not be able to attend otherwise, due to the location or to responsibilities (Elaine McGinty, GMV director, The Fiery Bird). This type of live music performance requires new ways of understanding audience engagement, tracking ‘digital embodiment’ produced, for instance, by live streaming [Hill et al, 2020]. The interviews also reflect changes in audience behaviour since the COVID-19 pandemic, and recognised the need to design inclusivity into performances, including virtual and hybrid performances which need to be especially ‘welcoming, safe, and accommodating’ to help retain and grow audiences [Whittaker and Wagner, 2025].

Artists and industry practitioners are envisioning hybrid live music experiences that extend beyond the physical boundaries of GMVs, blending real and virtual environments in seamless ways. These might include the development of immersive, three-dimensional spaces in which audiences can experience live music performances via an augmented reality environment, and, ideally, without reliance on personal devices. Such imaginings point toward a possible future in which live music is experienced both in shared physical settings and through distributed, spatially rich formats that retain presence and co-location. Hybridisation is not simply about access, but about reconfiguring the relationship between audience, performer, and environment—creating new forms of engagement that expand the possibilities of live music while maintaining its core experiential qualities.

Some describe this as a kind of ‘bridge between the digital and the physical worlds, witnessing a live gig holographically’ and experiencing connection and co-presence (Ben Dawson, former Founding Team MelodyVR, Innovation Director Napster & CEO Immersiv.es). Another type of hybrid event is the ‘type of silent-disco experience; the artist may not even be there, but you’re all wearing headphones in a certain location’ (Matthew Hawn, Managing Director for Compass, Map & Key).

Interviewees also discussed how best to address younger audiences and work creatively with technologies at the intersection of music and gaming. Metaverse-based music events, such as those hosted on Fortnite and replayed on Roblox in some cases, prompted our interviewees to discuss how best to give hybrid audiences both collective and individual ability to act. User-generated content and joint worldbuilding have become prominent within digital and social gaming environments, with music playing a key role in driving engagement. There is clearly audience appetite for these forms of interaction, particularly among younger audiences who are already accustomed to navigating and contributing to shared digital spaces.

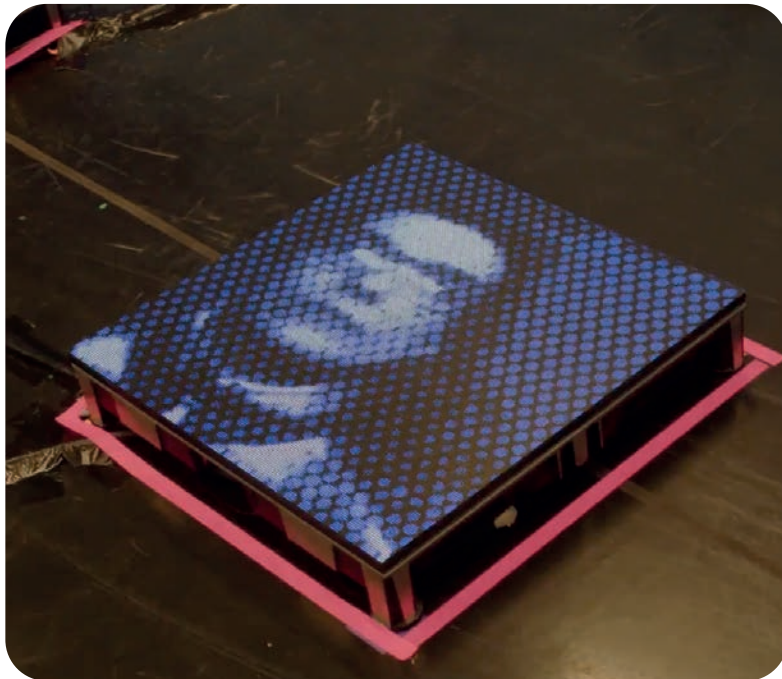
Within these contexts, hybrid live music experiences can align with existing behaviours and expectations, integrating performance into environments where audiences actively shape and inhabit the experience. Rather than requiring audiences to adapt to new formats, hybridisation can build on familiar modes of interaction, embedding live music within socially networked contexts where their active involvement is encouraged. There is potential for hybrid performance technologies to create shared social experiences that extend beyond the physical venue, enabling new forms of collective engagement that are native to both live music and digital culture.



Augmented Venues

Digitally enhanced GMVs using immersive and responsive systems

▼ An interactive floor panel at Bluman's MASS performance



Interactive tools can enhance the physical spaces of performance with 'virtual layers' adapted for each show and in response to audience feedback. These virtual layers also provide an opportunity for interactions between audiences and the digital 'twins' of artists or with digitally 're-skinned' GMVs, at the intersection between music and gaming.

Virtual performers need to provide audiences with “a true sense of uniqueness” and the feeling of “proximity to the talent”, the primary motivation of the fan says David Stubbs, music journalist and author. Promotor Simon Moran describes the challenge for the application of virtual technologies to live music: 'It's about being there... the actual gathering of people together and enjoying something at the same time that is unique is—even from the Roman ages—in human nature' (Managing Director, SJM Concerts/Academy Music Group). Virtual performances bring with them a range of unusual and thought-provoking interaction design challenges and creative possibilities. At a Fortnite concert in 2020 later reshown on Roblox in 2025:

'Everyone can be standing right next to Travis Scott as he sings... even if there's half a million people there, it might look to me that there's only a hundred or a thousand people there and that I'm at the front—because everyone is at the front. The reason that virtual space is interesting and exciting is because... the physical distance between us has been collapsed so that now it appears that we're in the same space' (Richard Lemarchand, game designer, educator, and DJ).

At one virtual music event in Fortnite an interviewee reported that 'it was exciting to know that you were all there experiencing the same moment at the same time... [and] to see an avatar of deadmau5 get up and play a few records live' (Crispin Hunt, songwriter, performer, PRS). As cost barriers to these technologies continue to be lowered,

there will be further opportunities to experiment with the freedoms afforded by virtuality: 'I always dreamed of running something completely technological, and where I actually was a hugely diminished part of it' (Ben Garrett, singer, songwriter and producer), a type of performance that becomes possible once the technology begins to pay for itself. For larger events, virtuality offers scenarios for a vast scaling up of the artist-fan relationship:

'A stadium is limited by having 20,000 seats, but if suddenly you can sell tickets to the world at the same gig and they can just join in virtually from their living room, that's a massive market. Now you're doing a gig to all your fans, it doesn't matter where they are' (Nathan McCree, composer and performer).

Recent research, informed by experimentation with delivering virtual performance formats, has highlighted the challenges and complexities of staging virtual live music from both an organisational and creative perspective [Whittaker, 2023]. Other research affirms that virtual live music 'has a role in the future for reaching new audiences' [Haferkorn et al, 2021b, p.52]. As these formats develop, questions about how to enhance levels of audience interaction and establish shared emotional experience will come into focus [Haferkorn et al, 2021a].

Adding virtual layers to GMVs might use augmented or extended reality (AR/XR) technologies to transcend the structural limitations of physical venues, crafting unique and variable virtual environments. The 're-skinning' of spaces into iconic GMVs would empower cultural 'time travel' and reimagine live music through audience-driven dynamics said one GMV: 'We could turn it into CBGBs from New York City' manipulating the associated visuals based on the movements of the audience, adding a dimension of audience feedback and participation (Allan Scorer, GMV director, The Little

Buildings). Creatively layering visuals and sound in this way can enhance the immersive experience for audiences, where the venue characteristics become a 'malleable' and interactive element of the performance, ensuring that a virtual performance is distinctively different from an in-person one. For example, 'Damian Marley could be literally giving you a listening session of his album while sitting in [a virtual version of] his father Bob Marley's studio' and bringing the experience to life in an entirely new and unique way (Yaw Owusu, Creative Consultant).

The creative possibilities do not end there, since virtual performances provide a new perspective on the fan engagement cycle, linking different technologies together to extend artist worlds across platforms and collaborative networks. The experience of a virtual performance can be made available at different points in the fan engagement cycle, generating keepsakes and artefacts for fans. Some wonder if technological innovation can disrupt the merchandising of live music at grassroots, allowing audiences to relive and reshare these mementos, capturing in 3D, and shared post-performance. Artist development teams, creative technologists, sectoral bodies, and many others are all actively considering these questions.

Responsible AI

Responsible AI systems supporting creativity, accessibility and artist rights

The sector has an opportunity to re-imagine how audiences can connect with artists more directly, and responsible AI should be one facet of this in the future, with assistive AI and humans-in-the-loop. If properly managed, responsible AI may help run live music events, managing any virtual or augmented reality (AR) elements added to performances by artists for remote and hybrid audiences to experience. AI may help to devise and implement innovative business models to create a more sustainable live music sector through distributed and cooperative mechanisms placing collective benefit above individual profit.

There are serious concerns about AI in connection with artist rights and generatively produced music, raising ‘urgent questions about originality, authenticity, creator livelihoods, and the broader impact of automation’ [Drury, 2025]. Despite this, we found that some artists and many others remain open to working with it and are exploring a range of creative and business possibilities. Artists are regarded as early adopters of AI in the creative industries, helping to define what best practice looks like:

‘It’s artists that will take the technologies to their full potential, the artists exploring AI now are the ones that will probably push AI forward’ (David Martin, CEO, Featured Artists Coalition).

The relationship between artist and audience can be ‘playfully’ explored by combining responsible AI with experimental forms of virtual performance. This might include AI models used to manage virtual layers in performances: ‘taking data from where people are, what they’re interacting with’ to decide on live music visuals (Ben Winstone, creative technologist, artist, Octopus Immersive). Or it could be responsible AI used as a means of giving fans personalised interactions with digital ‘twins’ of artists, during performances, and pre- and post-performance. In this case responsiveness should be built into live experiences, where the artist-audience relationship might feel like it alternates between that of being the ‘conductor’ and the ‘conducted’.

There could be a role for responsible AI to manage not only rights and responsible data usage but also to deal with the complexities of applying business models and receiving artists income from multiple income streams. AI could regulate audience access to events ‘in the virtual post-live-performance—it’s time-stamped, you can only do it for a week and then it becomes archived’ (Nathan Dearden, composer). Responsible AI may be used ‘to customise content so that it’s speaking to an individual user’ without changing the core identity of the performance (Ben Dawson, former Founding Team MelodyVR, Innovation Director Napster & CEO Immersives). Or AI may be used to create visible differences in variations of live music: ‘You can see something adapt’ in real time (Ed Townend, former Technical Manager & Promoter, The Moon). The widening of access to affordable AI tools for consumers and musicians has certain benefits, ‘except there needs to be the educational jump’ to go with this—promoting a general awareness of risks and responsible use (ethics) that goes with this wider use, says Townend.

During the pre-performance phase, automated AI-based systems might promote events, by creating for example “a virtual pirate radio station which would play music, shout out the event,” extending the reach of an artist world or IP into the ‘pre’ or promotion phase of the fan engagement cycle (Ben Dawson, former Founding Team MelodyVR, Innovation Director Napster & CEO Immersives). The blurring of the distinction between ‘pre’ and ‘post’ in music production may induce artists to find a better creative balance between assistive and generative uses of AI in the live music sector.

Each new AI model brings new possibilities for AI in the live music sector, and yet there is some way to go before the effective and safe application of responsible AI is realised in this fast-moving landscape: “There will be a to-and-fro symbiotic relationship with technology in the future” says musician and composer Nitin Sawhney, a relationship that will be heightened as AI begins to very accurately emulate the articulations and dynamics of actual performers. AI tools are useful in the early stage of composition, he continues, “we are living in a time when that mocking up is becoming more and more impressive to the point where it is indistinguishable from live and recorded performance.” Artists recognise that there is great potential for “playfulness across AI and virtuality” especially in grassroots live music, while at the same time being wary of the fact that artist rights and artist IP may not be fully respected by all, resulting in the lack of fair rewards for artists in particular (Pete Kirtley, CEO, songwriter, producer, Level33).

One sectoral body we spoke to related that some music labels were “urging all artists to sign over their name and likeness rights to create avatars of themselves,” recommending that artists, labels and publishers be “very usage-and-time-specific” about image and

likenesses (Annabella Coldrick, CEO, Music Managers Forum). Artists, according to these interviewees, should have the right to withdraw from label ownership of artist image rights and not be forced to sign these over in perpetuity, as has been the case with many contracts in recent decades. As CoSTAR National Lab’s Time to ACCT Report describes [CoSTAR, 2025], generative representations of performers, and the image and likeness rights of artists associated with these, is a highly contested area, and requires clear policy and regulation in line with personal data GDPR guidelines.

At least one artist we interviewed strongly objected to the use of AI in any context. Paul Wolinski warns that Silicon-valley AI tools foreclose truly creative possibilities: “The use of AI at any level of live music culture can only hollow it out... AI cannot create anything new, only endlessly regurgitate what was made in the past” says Wolinski (Paul Wolinski, keyboard player, 65daysofstatic). He makes the case for “opposing unnecessary technological interventions and pushing back against AI-based tech being injected into grassroots venues” and he warns against widespread “AI boosterism built on hypotheticals about what AI might someday be able to do, somehow ethically, and presumably sustainably.” From this perspective, the irresponsible and unquestioning use of AI could potentially worsen the day-to-day pressures on grassroots music venues, impacting on their struggle for survival, with automation and generative AI leading to the de-skilling of musicians, visual artists and programmers—a future scenario that must be actively resisted.

“

Everybody wants to feel like they’ve got a backstage pass and closer to the artist, but the artist can’t cope with doing that for every single person. So enable a digital avatar, or personality AI, which they train themselves, data protected and ring-fenced

Pete Kirtley, CEO, songwriter, producer,

Portable Production

Scalable and modular live production systems for grassroots touring and venues



▲ The Sonalux Spatializer SLX

Artists need affordable, portable, scalable and adaptable technology that works in widely varying GMVs. Artists can respond to spaces in a deeper and more site-specific way if given the opportunity to set up well in advance and would also benefit from channels to communicate with technical front-of-house support staff during performances.

Prior access to the performance space and to the full technical specification and other information is often a significant challenge for artists and their teams. The design of the physical space poses another challenge: 'Sometimes, I find the venues I'm playing in don't have the in-built equipment for the audience to engage in audio-visual work in a really immersive way' (Zubin Kanga, performer, composer and researcher). At smaller grassroots venues the performer is more or less 'part of the audience, you get up and play your set, and then you can sit back and enjoy other people's performances' says Kanga. The huge variation in GMV circumstances and infrastructure needs to be accommodated by flexible set-up processes and early access to spaces allowing artists to respond and adapt:

'A modern tour demands a modular philosophy. You need to design for the entire campaign, crafting a show that can scale up or down without ever losing its core identity' (Ed Warren, production designer, Next Level Lights).

James Sandom, UK Founder, Red Light Management, refers to Kendrick Lamar as a prime example of this: 'I saw him three times in only about four months and the show was drastically different every time, and that is amazing.' Such flexibility requires the portability of modular technologies. The goal, said interviewees, would be to 'pack it up and bring it on an airplane, and set it up in 30 minutes, alongside soundcheck, and tear it down after your show' (Roman Rappak, musician and producer, Ristband). Zubin Kanga agrees: future technology for an intervention in a grassroots music venue could be flat-packed, or ideally 'fit it in a suitcase.'

For artists, increased access to technology implies easier planning and set up in performance spaces hardwired for a variety of technologies, and many younger acts in particular would find this supportive. Enhanced Internet and 5G networking infrastructure, for example, supports the coordination of visuals and sound across multiple display surfaces, as already is seen in some clubbing spaces. The effective planning and logistics of touring establishes creative bridges between the digital and the physical worlds: 3D scans of spaces can lead to digital twins of venues given to performers before events, to familiarise and model new ways for their fans to engage with virtual performances and physical spaces. With such twins, affordable and accessible real-time game engine modelling can be used to explore the full potential of multidimensional spatial sound in grassroots venues, devising new ways to access live music.

Case Study 2

SONALUX

Where

District, Liverpool
Thursday 12 March 2026
Audience: 30-40 in-person



Who

Sonalux is a Liverpool-based music technology company focused on supporting innovative immersive sound and light design for live performance. They design and build their own hardware and software, with expertise in audio engineering, creative technology, and live music. Their work is always hands-on and rooted in how music is made and experienced in live environments.

<https://sonalux.co.uk/spatializerslx/>

District is an independent GMV in Liverpool situated in the heart of the Baltic Triangle, District is a vibrant multi-purpose venue, playing host to gigs, club nights, screenings, talks and more. District is home to some of Liverpool's most popular and eclectic music nights, including Boss, Positive Vibration and EAT ME + Preach, and hosts festivals such as Liverpool Sound City, and Baltic Weekender.

https://www.facebook.com/DistrictLPool/?locale=en_GB

Jack Joy is an active performer across the Liverpool's live music scene, exploring a distinctive combination of queer music and jazz, drawing inspiration for his compositions from artists as diverse as Björk and Sufjan Stevens.

<https://www.instagram.com/jackjoy27/?hl=en>

Case Study 2

What the audience saw

8 Colours was a live performance featuring composer, pianist & singer Jack Joy, positioned at the centre of the GMV District, with sound delivered through eight spatialised speakers, synchronised with a designed lighting environment. This field of sound and colour was managed through the proprietary technology provided by Sonalux.

Drawing inspiration from the original eight-colour Pride flag (now widely recognised in six colours), the event reclaims the full spectrum, with each colour represented as a distinct musical and emotional theme. As sound travelled around the room and light responded in dialogue with this, the experience built towards a chromatic audio-spatial crescendo where all colours co-mingled.

The Sonalux Spatializer SLX spatial audio hardware tool is the core piece of technology, distributing sound through 8 speakers, controlled by a joystick. It can take up to 20 inputs simultaneously (USB + SD card + Line In), and comprises a sequencer, SD card reader, and simultaneous light (DMX) control, allowing artists to improvise spatial audio and visuals with the audience standing in the zone where 360-degree sound and lights can be experienced best.

What the audience said

The most common emotions were excitement and calm, joy and delight, with uplifting, warm and easy-going feelings showing strong satisfaction with the performance. Audience members especially enjoyed the immersive qualities of the sound experience: 'There was one part of the sound where it just whooshed past you, through the speakers, that really impressed us.'

The quality of the experience was highly praised, although a small number of listeners at the edges of the space did say that they were unable to hear as clearly as when in the centre of the space.

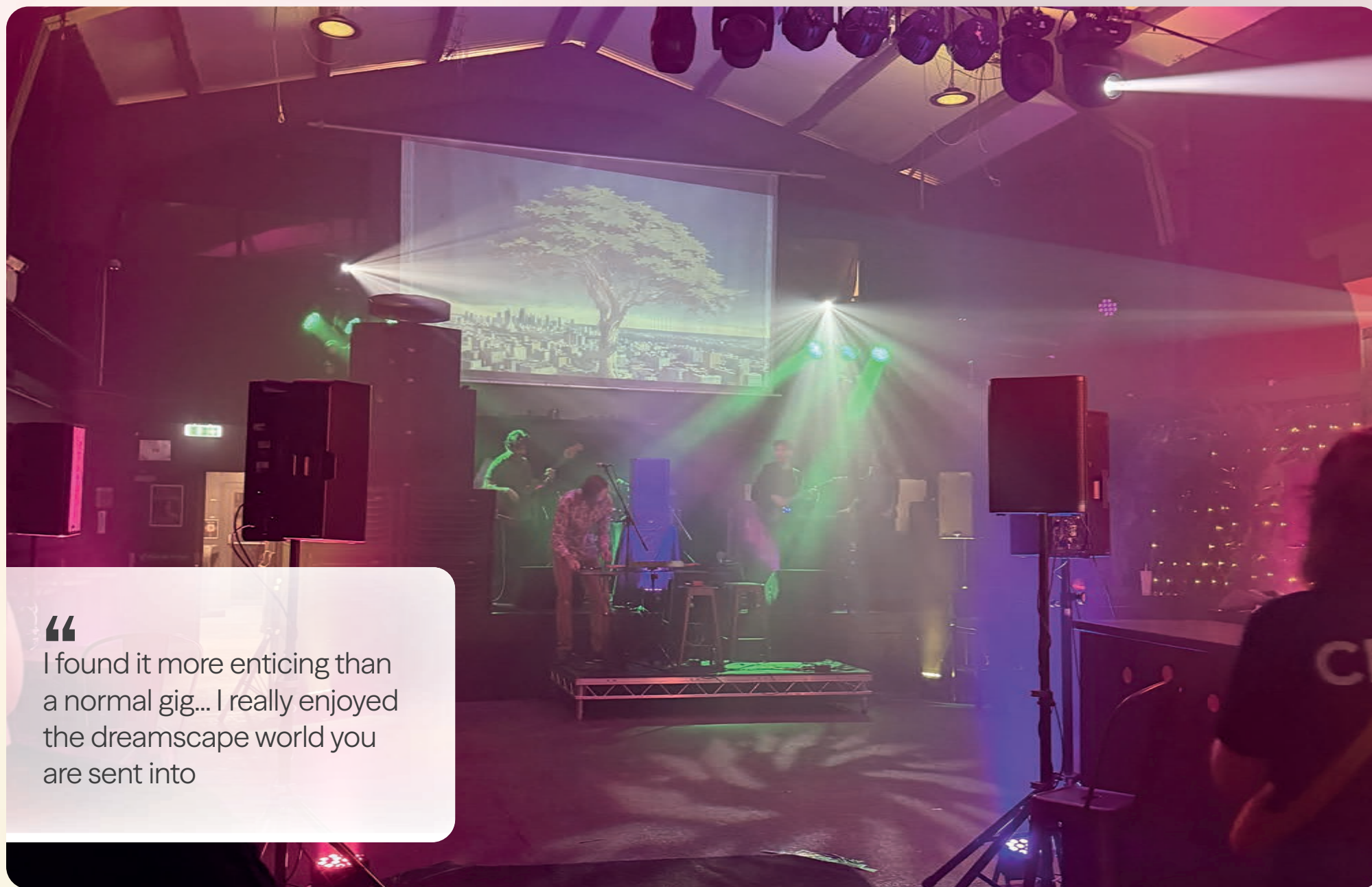
What's needed next

Sonalux's experimentation with spatial audio significantly changed the way live music was made and experienced for this audience, and the affordability and portability of the technology needed for this project mitigated against any financial and creative risk for artists and others involved in the staging of the show and without the need for specialist technical support or significant infrastructural changes to be made in the venue— illustrating the significance of portable production technologies.

What this shows

The premise of the event was to trial new and affordable spatial audio technology in a live music setting, creating a one-off spatial immersive performance, a realisation of our research **Insight #2: Access to Technology**. The aim was to test installation and calibration requirements, and to assess ease of use for the performers working in collaboration with Sonalux **Portable Production**.





“

I found it more enticing than a normal gig... I really enjoyed the dreamscape world you are sent into

► Ian Costabile, Co-Founder, Sonalux

The idea of bringing this all together into a small box, something that you can connect easily and that's quite affordable, was groundbreaking

Insight #3: An Equitable Ecosystem

Benefits from the live music industry predominantly flow to major players—labels, ticketing monopolies and technology giants—whilst smaller players such as GMVs and emerging artists struggle for survival.

A healthier ecosystem demands a fairer distribution of value between artists, venues, platforms, promoters and others. In this respect, GMVs have a vital role to play as live public R&D testbeds for innovative equitable technology-led solutions in the sector.

While ticketing fees soar and live music costs escalate [Osborne, 2024], artists continue to receive fractions of pennies for their works played on streaming platforms. In the current situation, each participant seeks to maximise returns, gaining a bigger piece of the pie, often (sometimes unknowingly) at the expense of others. To the detriment of the whole space some of these intermediaries (platforms, promoters, and industry professionals) are benefitting from the lack of reward experienced by other contributors to the system. Yet artists carry on finding new ways to operate, driven by their love of making music, even when barriers to success appear insurmountable.

Many people working in grassroots music experience financial instability through multiple compounding factors [MVT, 2024; Zhang & Negus, 2021]. Gig economy payment structures remain inconsistent, hampering fair compensation for artists and crews [Baker, 2019]. GMVs requiring security payments for last-minute cancellation coverage adds extra financial pressure on artists and promoters. High costs spanning pre-

production through post-event logistics further erode profitability, making live music an unstable source of income.

Without guaranteed regular income, creative professionals struggle to balance income generation and promotion with creative development time. While intensive touring is common practice, the escalating costs of touring, without proportional ticket price increases, creates unsustainable economics [DCMS, 2024b]. Artists are often being asked to bear production costs, while other value network actors transfer financial risks taken, creating unsustainable economic pressure throughout the grassroots music sector. 'Most people make a loss on performing live, they do it for the joy of it and with the intention that it's going to be a stepping stone to greater things' says Crispin Hunt (songwriter, performer, PRS). Crispin Hunt suggests that the under-investment and precarity felt by GMVs has been a systemic failure:

'The music industry now needs to reckon with itself and stop romanticising the grottness of many small venues. The industry... should be investing in grassroots venues. They are the primary schools of the business. The work of Music Venues Trust and the new Live Fund is a brilliant step in the right direction, but more needs to be done to protect the talent pipeline' (Crispin Hunt, songwriter, performer, PRS).



▲ Barney Kass/MASS, performance at The Bath House

Reduced income opportunities were a consistent concern and anxiety across the sector, particularly in relation to the imbalance between streaming revenues and live performance income. For many artists, recorded music generates minimal financial return, reinforcing the importance of live music as a primary site of value creation. In some cases, the disparity is so pronounced that direct, in-person performance can yield greater income than extended periods of digital streaming.

This imbalance points to structural inequalities within the wider music ecosystem, where value is disproportionately captured by platforms and intermediaries rather than those creating and performing the work. As a result, artists are frequently required to diversify income streams while absorbing a greater share of the financial risk.

Digital distribution platforms, whilst offering broader reach, provide minimal financial returns. Artists are faced with stark trade-offs between platform reach and monetisation potential [Antal, 2022a, 2022b]. Current streaming models display a fundamental unfairness that becomes apparent when artists earn miniscule amounts despite their extensive creative investment, forcing many to consider performing live as their primary source of income at the very time when that revenue

stream simultaneously faces considerable threats [Hesmondhalgh et al, 2021].

The powerful joint forces of Live Nation and Ticketmaster are a potential monopoly in need of regulation, said former assistant attorney-general for the antitrust division of the US Department of Justice regarding a still current legal case [USDC, 2024]: 'This is a deliberate plan by Live Nation to take a core monopoly in ticketing and flank it with other powerful businesses to create a self-protecting ecosystem... Fans are unhappy, venues are unhappy, and the market is stagnant' [FT, 2025]. Live Nation in turn rejects this characterisation and points instead to 'everything that is actually responsible for higher ticket prices, from increasing production costs to artist popularity, to 24/7 online ticket scalping that reveals the public's willingness to pay far more than primary tickets cost' [FT, 2025].

From the perspective of a GMV looking at big-scale technological live music productions, such as The Sphere in Las Vegas and at major stadiums, the landscape may appear top-heavy ('lop-sided'), weighted against the smaller players. Nick Stewart, GMV director at Sneaky Pete's in Edinburgh told us, 'it's funny that ABBA have got a song called The Winner Takes It All'.

▼ Audience-based LED visuals at Bluman's MASS performance



This mirrors a growing sentiment in the sector and beyond, echoed by the cultural and tech commentator and novelist Cory Doctorow, who argues that 'giving a creative worker extra rights to bargain with is like giving your bullied kid more lunch money... When an artist is being devoured by rapacious monopolies, does it matter how they divvy up the meal?' [Doctorow, 2026].

There is a significant gap at the grassroots level for applied creative technologies:

It's a cruel irony that, at a time where small venues are closing down, there's a real excitement about venues that you can only play if you are a massive artist. Well, where's the indie version of that? Where's the punk Sniffin' Glue magazine, or the Factory Records equivalent? (Roman Rappak, musician and producer, Ristband).

While rising operational costs and shifting industry dynamics force GMVs to close, gaps in the talent development pipeline threaten the long-term health of live music and opportunities for emerging artists to build their careers. The disappearance of mid-tier venues (500-2,000 capacity) particularly impacts the heart of the UK music scene [DCMS, 2024b] affecting the careers and creative development of artists.



Cooperative Networks

Shared systems for collaboration, distribution and direct exchange

◀ Previous page, the 'Ten Streets' in Liverpool

▼ The audience at Bluman's MASS performance



A more direct exchange between artists and fans may be enabled by various strategies, including distributed cooperation, shared platforms and tools, interactive ticketing, gamified experiences, digital wearables and artist-led ecosystems. By putting syndicated and cooperative models forward the whole sector would be strengthened to the benefit of all.

Career development and progression for artists is challenging, and the ability of cultural organisations to sustain themselves remains a precarious affair. Financial stability is the primary impediment for artists, prompting a growing number to consider innovative equitable solutions that will acknowledge the interests of all parties.

Within this broad vision, streaming platforms can contribute to live music development, and established venues can mentor emerging spaces, and successful artists can reinvest in grassroots infrastructure. This can foster a more resilient and sustainable live music environment, ensuring long-term cultural vitality.

Many interviewees would like to see 'a lot more direct connection between artists and fans' (Sam Griffiths, performer, composer, The Howl and The Hum). Direct connection across the fan engagement cycle, would allow artists to own more of the live music experience, using 'a common set of tools that don't require artists to go to someone else's platform' (Matthew Hawn, Managing Director for Compass, Map & Key). Introducing a distributed cooperation model offers one option to the grassroots sector:

'If we could establish a mobilised, cooperative network— a system where venues operate in concert to book tours directly— the industry would see a radical shift in efficiency. It's about moving toward a collective infrastructure that optimises both logistics and budgets from the ground up' (Ed Warren, production designer, Next Level Lights).

These and other strategies would strengthen the entire co-operation network, encouraging thriving and highly interconnected value network actors through a multitude of smaller interactions across the system. This mode of collaboration helps to rebalance the sector and counteract the current domination of monolithic entities within it.

A move away from dependence on the larger businesses and corporates would also make 'venues more democratic, less reliant on shareholders, people who don't know anything or care about what's actually going on in those venues' (Sally Oakenfold, GMV director, The Hope & Ruin). Matthew Hawn, Managing Director for Compass, Map & Key, continues a similar theme, asking how trust is best built for fans while building up the fan engagement cycle and business models: 'How do you tap the tribalism of fans, their pride, their connection? You do it the way Taylor Swift did, put up a marketplace, trade bracelets, give them a space to do this', and this need not be directly part of the live music performance. Working outside of the large corporates, the goal is to 'let them meet each other in a safe place... that can be powerful for an artist—that's what builds communities and longevity' says Matthew Hawn. In this scenario, GMV closures can be prevented by strengthening long-term economic sustainability of the grassroots sector. Shared spaces of exchange and co-owned platforms can also support and encourage diverse programming and maximise operational hours, creating environments where live music is able to flourish.

A distributed and decentralised approach to developing live music has the added benefit of supporting communities of interest. Recent attempts have been made to incorporate 'placeness' into live music streaming, sometimes in unusual contexts, such as local community shops or small businesses, a practice researchers term 'platforming' [Mouillot, 2022].

Distributed cooperation technologies can help smaller venues to design hyper-local innovative uses of their spaces, through strategic pop-up events, existing-space partnerships and hybrid performances. Innovative distributed solutions can also help with authentication, payment and reward. The availability of affordable, user-friendly technology employed in hybrid virtual-physical formats creates a precedent and an incentive for larger corporations and platforms to align with more location-based real-time experiences at the grassroots level [Zhang and Negus, 2021].

Touring system strain is relieved by spreading the costs through cooperation networks and finding economies of scale. Artists and other value contributors must decide on how best to balance their interests individually, rather than as part of a collective or community of interest. They are sometimes told by record labels, 'You'll need to finance it yourself' says the CEO of one sectoral body:

'I've seen lots of artists just decide not to go because they don't want to spend £50,000 of their own money to do a tour that might bring them a few more fans— so they have to really weigh up what they're going to get from touring' (Gaby Cartwright, Head of Partnerships, LIVE).

If direct exchange and collaboration is to help to rebalance grassroots live music, a shift in the design of the user experience would be required, moving away from the 'niche' philosophy of decentralised platforms such as Decentraland where live music events have been hosted. Wider access to platforms such as these can help create value through gamified interactions, digital wearables, and by adding scarcity mechanisms. This will ensure that 'artists can maintain greater control' says Pete Kirtley.

“

There needs to be a more equitable way in which musicians, music record labels, get better money and then that money would then trickle back down to people who are servicing those sectors

Chris Allen, CEO, Light Surgeons

Distributed Ticketing

Integrated physical and virtual ticketing ecosystems

▼ One of Studio Tonto's Telesync portals in situ, Liverpool



Selling live music to virtual audiences alongside in-person attendees can support GMVs and artists and widen access. It also helps venues to reach new audiences [Montoro-Pins et al, 2023]. Distributed hybrid performances combine virtual and in-person tickets to bolster struggling GMVs, a mechanism that can help rectify current power imbalances between the smaller and larger players. Distributed approaches also allow audiences to connect with artists interactively at different stages of the fan engagement cycle.

Grassroots music competes with major events for audiences possessing limited discretionary spending during a cost-of-living crisis. Our interviewees reported a trend for fans to prioritise buying tickets for expensive headline acts in larger venues over the discovery of artists playing in smaller venues. 'Music discovery through algorithmic playlist... really weakens that connection between music being heard and a ticket being bought' (Ed Seed, musician and performer). This tends to concentrate audience attention and spending on established artists. Digital barriers, algorithmic ticketing systems, touts [LIVE, 2023] and exploitative service fees further diminish access to live music for many.

Current ticketing technology very often creates systemic frustrations without meaningful innovation. Dynamic pricing models appear particularly problematic, and there is significant scope for improvement in ticketing across the board. Ticketing can be a frustrating space for many fans, who now reject the practice of automated bots and dynamic pricing of tickets. The ticketing platform Dice was cited as a good starting point to think about future formats for widening access to grassroots live music, and as an example of how music discovery and the artist-fan connection can best be supported by technology, linking this with enhancing the rewards for artists. 'Dice was providing me context, providing me discovery, providing lots of good stuff' (Matthew Hawn, Managing Director for Compass, Map & Key).

Through innovative approaches to both virtual and physical ticketing a move to distributed models can empower artists economically and culturally. These models have the potential to radically transform business opportunities, enhancing audience reach and sales according to one GMV: 'If we can sell 50 more tickets to an online show, that's game changing' (Allan Scorer, GMV director, The Little Buildings). Some interviewees imagined 'interactive tickets' as a distinct business opportunity, with the potential to change the experience of ticketing from a transactional to a more relational one. Incorporated alongside other merchandising and marketing elements, tickets could facilitate 'next event' offers to increase return engagement.

For the live music entrepreneur designing future events, the advantages of distributed live music performances are many. These include fostering direct artist-fan interactions and presenting exclusive content, via 'activation events, bespoke intimate events for musicians, a fan club might go and see a half-hour set before or after a gig' and experience direct access to artists in a hybridised or virtual way (Ben Winstone, creative technologist, artist, Octopus Immersive). Other advantages of distributed live music performances include lower price points and wider access to proxies of an in-person event, as new forms of playful engagement are devised to attract audiences. This requires intense experimentation with formats to foreground value, and to adapt these to existing touring infrastructures without impacting on the value chain negatively.

Virtual merchandising is an important supplemental source of income which, once developed, has the potential to bring revenue directly to artists and other actors in the network. Innovative strategies around digital collectibles, mementos and proof-of-

attendance could be part of a user experience that 'leaves people with a lasting memory' of a performance (Ben Dawson, former Founding Team MelodyVR, Innovation Director Napster & CEO Immersiv.es). Novel mementos are a crucial anchor point in the fan engagement cycle, a way to create lasting performance 'legacy' and to leverage the history and heritage of specific live music venues. Personalised engagement—recognising birthdays and anniversaries for instance—could be another form of direct contact between artists and fans enabled by responsible AI and other technological mechanisms.



Connection shouldn't be a matter of geography. While the live show is the heart of a campaign, it's only one facet of a much larger conversation. By expanding reach through digital and alternative spaces, fans get the opportunity to inhabit the live experience, regardless of where they are in the world.

Ed Warren, production designer, Next Level Lights

Trust & Transparency

“

I've seen many examples where people have struggled to receive payment for their work, or haven't been paid on time, mainly due to a lack of contracts being put in place

Gaby Cartwright,
Head of Partnerships,
LIVE

Transparency encourages trust and a more equitable and sustainable live music ecosystem. Establishing a culture of transparency through clear systems that track revenue flow can help eliminate unfair payments and improve the affordability of live music:

'It's about how you create a model and a revenue stream that is equitable and transparent and supports the artists and the people making the work, and isn't just another extractive model' (Chris Allen, CEO, Light Surgeons).

Transparency in costs provide a vital step in developing a landscape that promotes equity and fair reward: 'There's not a lot of transparency on how much money is being made from these gigs' says DJ and musician Shivum Sharma. Better comprehension of costs helps mutual understanding to grow:

'The venue will say, 'Well, I'm paying the artist £500', and you'll say, 'But there's five of them, that's 100 pounds each. The train fare down to and from the town was £50 each. By the time they paid for somewhere to sleep, they've lost money, because they had to buy some food as well.' The venues get annoyed when the artists ask for big riders—it's because the artists are losing money on the tours' (Annabella Coldrick, CEO, Music Managers Forum).

Some advocated for 'transparent tours'—where audiences can see the full financial breakdown of live music expenditure and profits. Increased transparency and the availability of information and data also mean that smaller GMVs and emerging artists are empowered in negotiations with larger entities. Others say that 'Pay-What-You-Can' and sliding-scale payment models can help build a culture of loyalty and trust while lowering the price of entry. An affordable or free ticket option for young attendees was also recommended for first-time visitors to festivals, for instance, cultivating a diverse audience base.

Interviewees spoke of inadequate contractual arrangements for many members of the live music community, as observed by researchers [Baker, 2019]. Contracts are often informal or may be structured against artists' interests. This creates an environment where freelancers frequently experience payment delays or non-payment without adequate contractual protection.

'Profit slicing' concerned our respondents, with profits divided many times over to serve the interests of certain actors in the value chain. This is often carried out at the expense of smaller players at the end of the chain, including the makers and producers of live music itself. Transparency and trust networks can help remedy the sense of precarity felt by many. Government regulation of promoters can help address systemic underpayment and ensure fair compensation.

Our interviewees pointed to the wider potential for connecting the interests of audiences with those of grassroots venues through the adoption of a culture of trust and transparency. Some grassroots music venues have explored crowd-sourced options to fund their operations and help them to stay in profit. In one case a spontaneously organised grassroots movement saved the Puzzle Hall in Sowerby Bridge from closure following a successful Kickstarter campaign, and it still operates several years on [Gillon, 2020].

Case Study 3

STUDIO TONTO

Where

Kapsule at The Invisible Wind Factory, Liverpool, with networked portals simultaneously active across Quarry, Arts Bar Baltic, Kazimier Garden and The Brookhouse.
Thursday 26 March 2026
Audience: 50-60 in-person



Who

Studio Tonto is a creative technology studio formed by co-founders of the Liverpool-based GMV Invisible Wind Factory (IWF) with The Kazimier group. They create interdisciplinary work ranging from intimate installations to mass audience spectacles, exploring the potential of creative technology. Their team includes artists, producers, engineers, and specialist makers, with work prototyped and fabricated in-house, producing immersive productions and commissions for international festivals and global brands.

<https://www.studiotonto.com>

Kapsule is a collaboration between The Invisible Wind Factory and Sun Palace Sound System, Kapsule is a club space housing a 4-point high fidelity sound system and a sub-stack powering some of the most iconic clubs in dance music history. Kapsule is located within IWF's current headquarters, a former wind turbine factory in Liverpool's "Ten Streets" area, close to the North Dock and Vauxhall.
https://www.instagram.com/kapsule_club/?hl=en

Those Holy are an electronic Liverpool-based duo working at the intersection of industrial noise and gothic pop. Formed in 2024, Those Holy is the collaborative project of Irish producer Chrissy Connor (aka FEND, formerly of LONESAW) and Welsh producer and singer Lucy Grey (Majia, Dubs Club). They have opened shows for Liturgy, Autumns, Toulouse Low Trax, and Topographies.



Case Study 3

What the audience saw

Those Holy performing to an in-person audience on an immersive 360 stage, and on TeleSync, an interconnected network of portals distributed in several high-footfall areas within Liverpool, with feeds directly into the live event. TeleSync: <https://www.instagram.com/p/DVgtcdtDJxe/>

The central 360° stage places the artists at the centre of the space, surrounded closely by the audience, with large, illuminated speakers, directional overhead lighting and overhead screens all holding the attention of the audience.

The TeleSync interactive portals were specially developed for this project, using in-house Studio Tonto R&D expertise. The portals are custom-built, camera-enabled display nodes running over a live network, dynamically routing audio-visual feeds between sites to connect remote audiences in real time. They act as a digital bridge to the venue experience, with four modes of engagement:

- **Promotion** – Displaying upcoming events
- **Interaction** – Single-user experiences
- **Telepresence** – Connecting distant locations, gamified interactions
- **Broadcast** – Streaming live performances

What the audience said

Joy, excitement, calm were the most frequently felt emotions, using words like “intimate” and “out-of-body” to describe the “experimental” event. Some found that spatial proximity gave them a closer connection to the performers, and even to fellow audience members.

The hybrid systems and the spatial design deepened immersion for the audience, strengthened artist–audience connection, and extended the live performance beyond a single site. There were moments of surprise and playfulness, as attendees looking at the TeleSync portals recognised friends in the other venues. Due to the unfamiliarity of the technology, some initially saw the portals as passive displays, until they were cued by others as to how to use them.

87% of those surveyed praised the visuals and 83% the audio, with the music described as ‘entrancing’ and ‘unique.’ 83% expressed interest in attending more technology-enabled gigs and 96% said they would return to the venue.

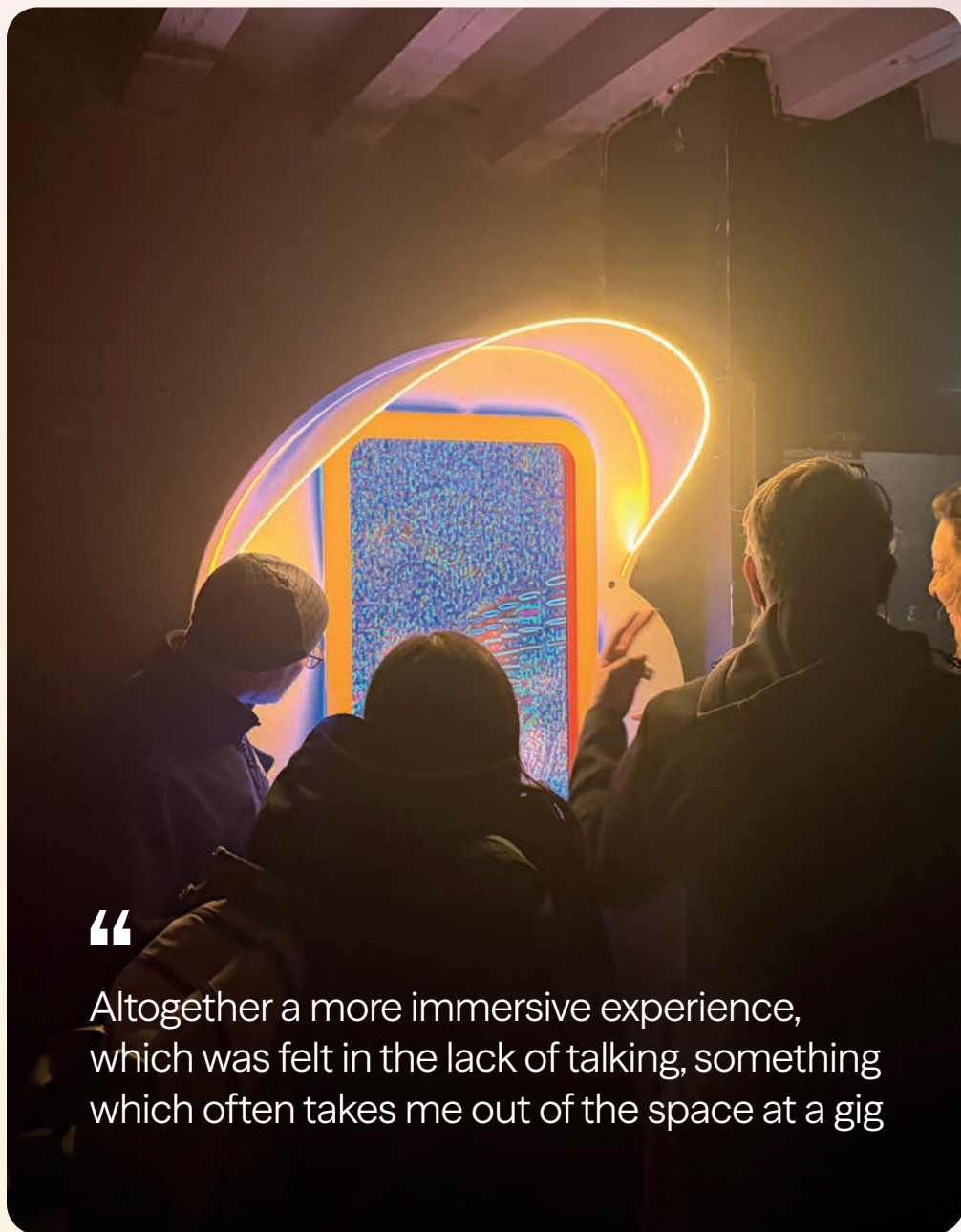
What’s needed next

The portals were an experiment in shared programming across grassroots venues, exploring new ways to enhance audience development and music visibility, prioritising technologies that deepen artist–audience relationships and support fairer value exchange. The approach could be extended to foster activities across the fan engagement cycle—shared platforms and tools, interactive ticketing, gamified experiences, digital wearables, artist-led ecosystems, and syndicated and cooperative business models.

What this shows

The portals delivered performance as a city-wide, real-time event, preserving intimacy but extending reach for both artist and venue. This introduced hybrid presence, linking physically separated audiences through networked connection.

The project fostered collaboration between GMVs, universities, and public institutions (**Insight #3: An Equitable Ecosystem**). The prototype enabled venues to cross-promote, beginning a distributed grassroots network for mutual growth—**Cooperative Networks**. The project was trialled in high-impact areas for easy set up and take down—**Hybrid Performance**, and **Portable Production** (**Insight #2: Access to Technology**).



► Laura Cotter, Producer, Invisible Wind Factory

TeleSync is a series of wormholes that connects venues, almost like an intranet within the city, but at the same time to connect to other spaces... there's a whole wealth of activity, but unless you're tapped into that, it might go past you

Case Study 4

Where

The Bath House, London

Saturday 7 March 2026

Audience, Afternoon: 97 Evening: 145

BLUMAN ASSOCIATES



Who

Bluman Associates/MASS was founded by Pod Bluman (producer) and Barney Kass (creative direction and music production), and builds on their joint strengths in large-scale showcraft, participatory tools, and audience centred design. Dave's viral BRITs 2020 piano performance is a highlight from their extensive work. The MASS event featured Bluman collaborators vocalist Julita Mahrer Vinas and special guest musician Pytko.

<https://blumanassociates.com>

The Bath House in Hackney is an historic Victorian building and independent venue, a symbol of artistic reclamation in East London and as an incubator for local talent it has helped sustain the UK's reputation for boundary-pushing live music.

<https://thebathhouse.co>

Case Study 4

What the audience saw

MASS was a live hyper-interactive musical experience employing a mix of audience interaction and LED screen visuals and spatial audio to create an intense shared experience.

On arrival the audience found themselves in a large stage-less space with a LED screen filling one wall and raised pressure-sensitive interactive tiles arrayed across the floor. Spatial audio and real-time generated visuals move across both the wall and tiles, influenced by the audiences interactions with the tiles and with two centrally placed waist-high towers where infrared sensors detected movements.

MASS was co-developed by Bluman Associates through a spontaneous cooperation network that included partners Disguise (media servers and creative services), Notch (real-time generative graphics), Stage Precision (system integration and live data dashboards), and d&b audiotechnik (immersive spatial audio), along with CoSTAR National Lab audience researchers and creative technologists.

The 'Real Time Audience Measurement Dashboard' (RTAMD) collected anonymised engagement data from audience and performer interactions with the installation, capturing passive data from audience movement using 3D Lidar scanners in real-time. Other tools included Disguise and Notch graphics, Ableton-driven audio and spatial audio via DAB.

What the audience said

MASS was praised for its strong audiovisual qualities and emotional impact, creating an enchanting, otherworldly and emotionally resonant atmosphere. Calm, confusion and joy were emotions most frequently reported. A well-liked element was the large, enveloping visuals, at times showing members of the audience on screen and floor tiles.

Many comments enthused about the 'vibe of interactivity' as an aesthetic model, in a blend of multimedia, performance and audience presence, creating atmosphere and connection, and their interactions with the floor tiles and two infrared sensor towers gave people a sense of active involvement.

Seeing themselves or other audience members on the screen created an immediate sense of engagement with the performance, making them feel as if they were part of the piece, rather than observers of it.

One reported issue was need for more clarity about the cause-and-effect of audience actions: what exactly happens when stepping on a tile or while moving around the sensors and the space?

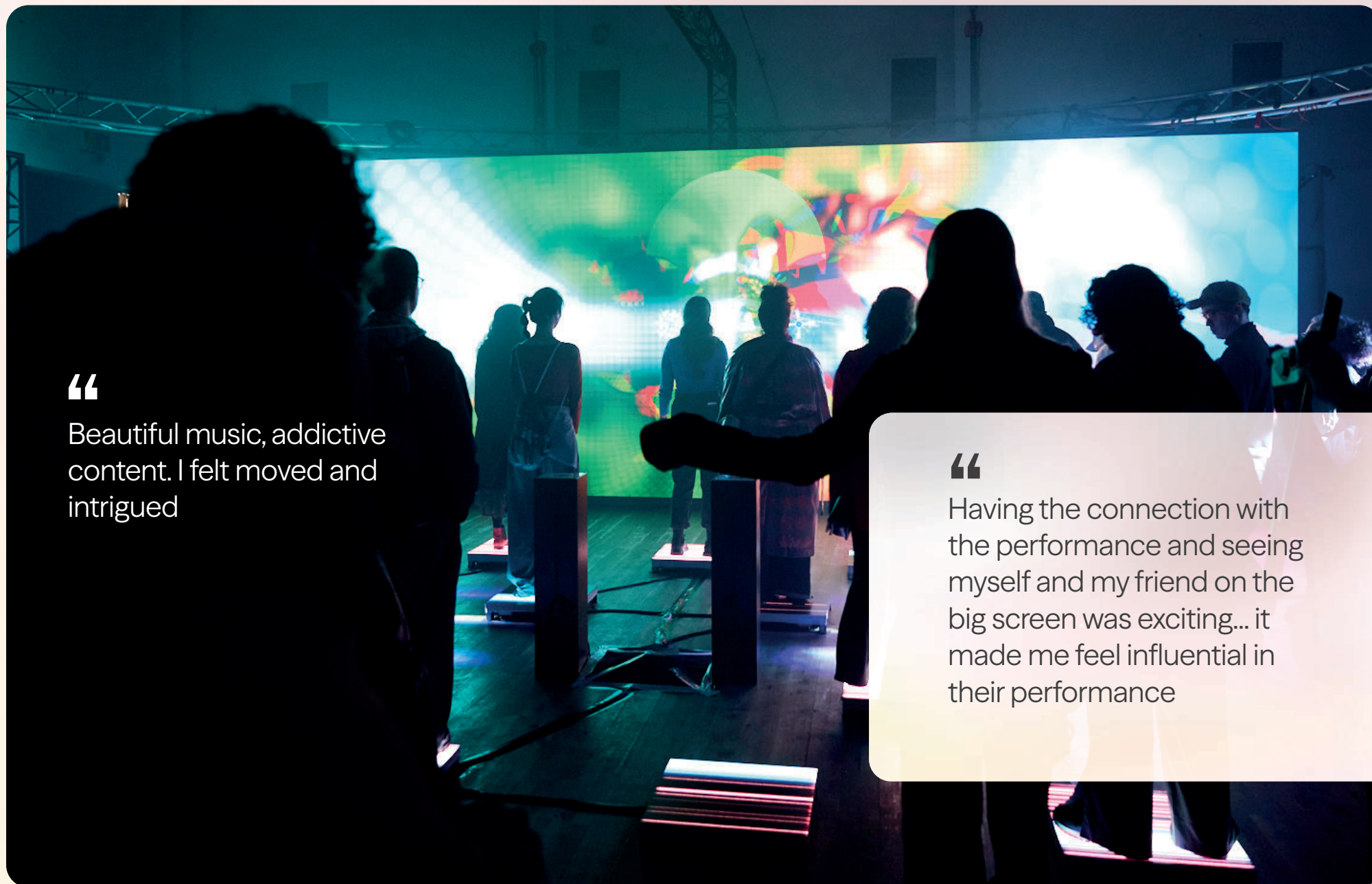
What's needed next

The challenge of giving audiences the ability to help shape and direct the performances of artists is creatively rewarding, a long-term goal which requires a supportive ecosystem prioritising technologies that deepen artist–audience relationships and support fairer value exchange along with a dedicated R&D funding stream, music innovation testbeds and skills networks.

What this shows

MASS adapted existing technology, blurring the traditional distinction between audience and performers, testing the appetite of audiences (**Insight #1: Live is Transforming**). This brought the MASS artists and performers into a more collaborative relationship via **Audience Participation**.

The MASS event tested new technologies unifying the performances of three artists into one overarching delivery (**Insight #2: Access to Technology**) a bespoke multifaceted vision created for this event (**Artist Design Worlds**). The interactive dashboard (RTAMD) also tested the parameters of **Portable Production**.



“

Beautiful music, addictive content. I felt moved and intrigued

“

Having the connection with the performance and seeing myself and my friend on the big screen was exciting... it made me feel influential in their performance

► Pod Bluman, Director, Bluman Associates

The audience have the option of having a five-second video taken of themselves, which is automatically populated into our system and becomes the seed content... This is genuinely research and development in the wild

Audience members at MASS consented to have 5-second videos made for Bluman's visual staging







▲ Audience stickers at Boiler Room in Guildford

Conclusion: What is the Future of Live?

We envision a future where artists perform live music at the grassroots level, expressing their creativity while receiving a fair share of the rewards and maintaining their financial stability.

The wider introduction of enabling technologies, including responsibly designed automated decision-making and responsible AI, can help deliver this vision. We argue that grassroots music venues present a valuable opportunity to develop live R&D testbeds, experimenting in public with ways to enhance the experience of real audiences.

Our case studies provide evidential support for the appetite for such interventions and for their creative and technical viability. The highly portable interventions enjoyed by audiences produced by Megaverse (Case Study 1) and Sonalux (Case

Study 2), for example, both illustrate a set of near-term possibilities and gains for grassroots venues. The Megaverse project demonstrates audience demand for hybrid participation, while Sonalux illustrates the potential for low-cost, high-impact production innovation. Studio Tonto's TeleSync portals (Case Study 3), also highly portable, shows how virtual and hybrid ticketing and cross-promotion can diversify potential revenue streams in the medium term future, as these technologies are further developed and potentially adopted by grassroots ecosystems at scale. Bluman's MASS project (Case Study 4) was an engaging and creative use of new technologies, designed to deepen artist–audience relationships through participation. In the longer term, with further R&D

Economically, the interventions explored in this report operate across three time horizons:

- 1 Immediate cost reductions through portable production
- 2 Medium-term revenue diversification through virtual and hybrid ticketing
- 3 Longer-term future audience development through differentiated and participatory experiences

support and when combined with the strategies used across our case studies, MASS and the other prototypes could prove to be viable ways for the live music ecosystem to explore fair value exchange models.

Taken together, these findings suggest that R&D should be positioned not as a standalone solution, but as one instrument within a broader policy mix. Financial interventions, regulatory reform, and sectoral support remain essential to addressing the structural challenges identified in Section 1 of this report. Technological innovation and intervention will not solve industry problems on their own, but can lead to real-world opportunities. We have demonstrated, through our case studies, how new forms of collaborative creative economy, supported by funded R&D partnerships, readily enable grassroots venues to trial new audience, performance and revenue technologies in live public settings.

The success of our previous research project StoryTrails, a series of AR walking trails, shows how collaborative R&D can make a real difference for community libraries across the UK [StoryTrails, 2022]. This research evidences that technological

intervention can be beneficial to organisations not traditionally engaged with publicly funded R&D [DCMS, 2024a]. If the grassroots music ecosystem is encouraged by funders and Government to engage in R&D targeting interventions across these three time horizons, this will help rebalance a sector which has a long history of value extraction by dominant players.

In return for a managed and safe exchange of data, fans can be engaged in new and highly creative ways, make new kinds of purchase, and be active contributors within a more transparent and trusted ecosystem. Many thought-provoking examples of audience-artist connection were cited by our interviewees. The performances of Fiest, for example, or the inventive use of Twitch by Mike Shinoda from Linkin Park to produce the music of his fans. We also heard how we could join Damian Marley hosting a listening party from a virtual recreation of his father Bob Marley's studio.

The challenge is to find ways to introduce under-utilised technologies to grassroots spaces, while addressing the economic sustainability issues that threaten the very existence of many of our grassroots venues. Our consultation with the sector

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My experience of playing this circuit over 30, 40 years is that they're often run by heroic, idealistic people who have often taken an old building and enchanted it... involving everything from theatre to wellbeing practices, to small business training, a palace of possibility in the heart of communities that are often tough and post-industrial. If I could wave a magic wand then the human and social and communal benefits of arts performance venues would get their fiscal due

Pat Kane, musician and performer,
Hue and Cry

shows that grassroots music venues, artists and supporters of live music are willing collaborators and often early-adopters of such technologies, a ready source for collaborative solutions. Future sales of virtual tickets to physical grassroots performances could be 'game-changing' for venues and for artists earnings, said one venue, and have a knock-on effect on in-person ticket sales. 'Transparent tours' and ticketing are a way to remedy problems of equity—revealing to audiences the full costs of touring and how profits are sliced. Spotify has published aggregated data on artist earnings, claiming that 'Thanks to streaming, more artists than ever before are generating royalties at every career stage', tripling since 2017 [Spotify, 2025], however the comparison with the CD-era is not like-for-like and never could be. Summarising the current position for artists, UK Music writes: 'While it has never been easier to make and release music, it has never been more difficult for new artists to be heard and for music creators to build careers' [UK Music, 2025].

Building loyal live music communities at grassroots level is fundamental to how the sector will sustain itself. The industry should not follow the 'winner-takes-all' paradigm but instead explore new ways of sharing the stage. Pat Kane summarises these

aspirations, describing the unrecognised efforts of GMVs to help realise many social and economic benefits for communities.

Strengthening interconnections between all actors in the network will require systemic intervention if sustainable live music communities are to be supported effectively [PWC, 2024; Sarafin, 2021]. The democratisation of new technologies is an opportunity to create real value for grassroots artists, venues and others by 'making it cheaper and easier to use... so that more experimentation will happen' (Matthew Hawn, Managing Director for Compass, Map & Key). James Sandom of Red Light Management agrees, 'the artful brain' is the key: 'It's just about giving creative people access to the tools and giving them time to experiment, creating iterative feedback loops, and then off it will go.' This diversity of responses is critical, as Shirley Manson says, 'Support the weird doughs, or all you get is white bread' [Manson, 2025]. Grassroots music venues, under-funded, under-resourced, and previously under-valued in the UK, have been subject to significant challenges in recent years. As we have shown, audience engagement, and the richness and diversity of public life and culture, can be enhanced if grassroots venues can be seen as viable spaces for R&D investment and funding.



▲ Behind the scenes at The Fiery Bird venue, Woking

Appendix: Methodology

Grassroots Music Industry Consultation

CoSTAR National Lab interviewed 66 music industry participants from late-2024 to mid-2025, speaking to artists, venue owners and operators, promoters, and others involved in live music. This was a mix of interviewees designed to reflect the wide range of roles, skills and demographics important to the live music industry, as well as the diversity of the people. Throughout the research, the regional, gender and career stage attributes of participants were monitored to ensure they were as representative of the sector as possible.

We used semi-structured interviews and ensured that participants were briefed about the uses of their data, under an approved CoSTAR National Lab ethics framework (Royal Holloway ethics

approval number REC416). After transcribing the recorded interviews, we used cross-team qualitative data analysis to look for patterns emerging from the data and identified the main themes of central concern and interest– the three themes described in the Executive Summary and developed upon throughout this report. The collaboration between the CoSTAR National Lab Business Futures and Worldbuilding teams was designed to explore how emerging technologies might affect the live music sector in the future. Our research questions were:

- What is involved in planning and delivering live performance, what are the principal challenges and difficulties, and do they affect the audience's experience of live music?

- How do you imagine live performance will evolve in the near-to-medium-term future, and might any of these envisioned futures mitigate current challenges and difficulties?
- How do you see the current value of live performance and how do they see future value changing?

The organisations we identified as important to gaining an indicative picture of the sector included grassroots and major venues, promoters, sectoral bodies, creative technologists, bands, artist collectives, production and lighting designers, and many others, as listed below.

In many cases we consulted with senior representatives of companies and organisations deeply involved with the development of the live music sector. Promoters included C-Suite professionals such as Simon Moran, Managing Director of SJM Concerts/Academy Music Group, Iain Hill (Festival Promoter at Live Nation España SAU) and John Reid (CEO Live Nation Concerts Division EMEA), and James Sandom UK Founder of Red Light Management. Sectoral bodies consulted included David Martin Chief Executive of Featured Artists Coalition, Gaby Cartwright Head

of Partnerships at LIVE and Annabella Coldrick CEO of the Music Managers Forum and others. We also interviewed Crispin Hunt Chair of The Ivor's Academy, formerly of band Longpigs and Director of PRS for Music. We also spoke to Kelly Betts Head of BBC Introducing, and to leading economist of the music industry Will Page from Pivotal Economics.

Senior representatives of creative technology companies were consulted, including Claire Leach former Director of Programmes at Disguise, Matthew Hawn Managing Director for Compass, Map & Key, Ben Winstone of Octopus Immersive, Ed Warren production designer at Next Level Lights working with Mumford & Sons, Four Tet and a host of high profile acts, and with Pete Kirtley CEO of Level33 and Chris Allen CEO of Light Surgeons. We also spoke to entrepreneurs Ben Dawson former Founding Team MelodyVR, Innovation Director Napster & CEO Immersives.

Venues of different sizes were interviewed including the directors of smaller grassroots venues Kinross Backstage, Sneaky Pete's, The Fiery Bird in Woking, The Hope & Ruin in Brighton, The Little Buildings in Newcastle, The Met in Bury,

Manchester and The Moon in Cardiff, as well as the owner of The 100 Club in London.

We also spoke with people working behind-the-scenes in live music in a variety of creative and specialist capacities. These included Barney Kass (artist and creative technologist, Bluman), Ben Garrett aka Fryars (singer, songwriter and producer), David Stubbs (music journalist and author), Jessica Cooling (operations and events manager) and Yaw Owusu (Creative Consultant).

The musicians and performers we spoke to were at different career stages. Pre-eminent among these was Nitin Sawhney, an internationally recognised musician with a leading role at PRS, the national music rights body. Other individual artists and performers included Ed Seed (musician, performer, bass player for Jessie Ware and Dua Lipa), Nathan McCree (composer of music from Tomb Raider), AiiTee (singer-songwriter), Alison Buchanan (opera performer and Artistic Director at Pegasus Opera Company), Miss Yankey (performer and songwriter of hit house music records), Fred Deakin (innovative producer, performer, creative technologist and researcher), Kat Austen (immersive artist and performer), Nathan Dearden (composer), NikNak



(DJ), Rae Morris (musician, performer), Richard Lemarchand (game designer, educator, and DJ), Shivum Sharma (DJ), Tommy Perman (musician and visual artist), Tonia Ko (composer, sound artist and researcher), Will Farmer (film and TV composer) and Zubin Kanga (composer, performer and researcher).

Representatives from bands included Paul Wolinski from 65daysofstatic, Pat Kane from Hue and Cry, Sam Griffiths from The Howl and The Hum, Stuart Braithwaite from Mogwai and Roman Rappak and Anne McKinnon from Ristband; artist collectives and other creative organisations include An-Ting Chang composer and multidisciplinary artist and former artistic director/CEO of Kakilang (formerly Chinese Arts Now), Xandice Armah from Gal Pals, Shiori Usui from Neurodiverse Theatre, Nela Brown from the Female Laptop Orchestra (FLO), SHHE from One Little Independent Records.

Framing for the Open Funding Call

As a follow-on piece of research CoStar National Lab organised a two-day workshop in Stroud, in Gloucestershire, for participants to feed back on the first analysis of the interviews data, and to refine the scope of the upcoming Grassroots

Venues R&D call and help frame it for the industry appropriately. Workshop activities included group work on themes emerging out of the interviews, and looking at possible futures for applied creative technologies in live grassroots music, including describing future use cases and identifying potential beneficiaries.

The 16 attendees included some who had previously been interviewed and others who were invited to give the research additional coverage of the industry where needed. The participants were: Ngaio Anyia, An-Ting Chang, Esi Yankey (Miss Yankey), Fred Deakin, Matthew Hawn, Iain Funnell, Ben Dawson, Ben Winstone, Elaine McGinty, Pete Kirtley, Chris Allen, Rob March, Laura Cotter, David Massey, Tom Wilson, Mike Salmon and Michael Aldag.

Live Performance Audience Insight

CoStar National Lab Inclusive User Futures team worked alongside all four companies selected as part of the Grassroots Venues R&D call. The team supported the development process itself and conducted post-experience audience surveys at each of the live performances.

The team assisted with design research, reviewing literature of mechanisms being tested by the companies, including audience interface preferences in hybrid concert settings.

The Inclusive User Futures team conducted mid-development testing of user journeys during rehearsals, and consulted companies on ways to address emerging feedback from testers.

The post-experience surveys included questions about audience experience and attitudes towards technology-enabled music events, as well as questions on specific aspects of the performance which each of the four companies had aimed to achieve, such as enhancing performer-audience connection.

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