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Live events, digital technologies, and data-driven innovation

Lasting impacts from the pandemic pivot to digital

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LIVE EVENTS, DIGITAL TECHNOLOGIES, AND DATA-DRIVEN INNOVATION

Lasting impacts from the pandemic pivot to digital

Vikki Jones and Chris Elsden

Abstract

This chapter will consider the extent to which the 'pivot to digital' reported in the cultural and live events sector during COVID-19 lockdowns has brought about lasting impacts on in-person, digital, and hybrid live events. Through case studies, it will explore methods for research in this space that can sensitively explore digital and data literacies in both cultural production and consumption, in the context of broader economic, social, and cultural challenges around inequities in the sector. By considering possible and preferable futures for the development of online and hybrid programmes towards new modalities of experience beyond the pandemic, the chapter will argue that these digital adaptations and transformations – which consuming culture during COVID-19 accelerated – are part of a bigger conversation about data, platforms, digital media, and modes of performing liveness.

Introduction

While the global COVID-19 pandemic impacted all subsectors of the creative industries, live cultural events were particularly affected through cancellations and curtailments brought about by successive lockdowns in 2020 and 2021. The pandemic and lockdowns, which began in the UK in March 2020, brought about rapid shifts in cultural programmes, performances, festivals, and events. As we continue to emerge from COVID restrictions, live cultural events may be presenting more like pre-pandemic experiences than expected, but research and cultural programming are continuing to explore which legacies of digital and online programmes can and should be retained to support

innovation, continued development of new technologies for performance, and access to events for audiences.

This chapter will particularly focus on the following research and reports conducted during emergence from the pandemic in the Edinburgh and southeast Scotland region: Creative Informatics' project looking at experiences from the online Edinburgh Festival Fringe in 2020, which undertook research with Fringe artists and producers as strict lockdowns were in place and when those working in the events sector were most drawn to new approaches and experimentation (https://creativeinformatics.org/research/learning-from-the-2020-edinburgh-festival-fringe/); The *Future Culture Edinburgh* symposium in 2021 (Jones and Cunningham, 2022), which explored attitudes to increased awareness of inequities in Edinburgh's cultural sector and ideas through which to address them; and Creative Informatics' 2022 Creative Horizon 3 project looking at how digital technologies and data-driven innovation can support equitable and sustainable festival futures, which produced the fictional, speculative cultural magazine *FestForward*, set in summer 2030 (https://www.festforward.org). These projects captured both a sense of fatigue with the restrictions that were placed on production and consumption of cultural events during successive lockdowns, and an atmosphere of hope and excitement at the prospect of the return of more familiar frameworks and formats of live activity. In the rush of cultural workers and audiences towards traditionally held views of the value of 'liveness', ways of making and consuming culture that arose or became more developed during the pandemic – particularly work involving digital technologies, platforms, and data-driven approaches – were put to one side.

However, this chapter will argue that these digital adaptations and transformations – which consuming culture during COVID-19 accelerated – are part of a bigger conversation about the role of data, platforms, digital media, and modes of performing liveness as we look beyond the pandemic. It will consider the extent to which the 'pivot to digital' (Walmsley et al., 2022), initiated and accelerated through 2020 and 2021, has brought about lasting impacts on in-person, digital and hybrid live events. Supported by case studies and the expanded *FestForward* case study which supplements the text, it will consider methods for research in this space that can sensitively explore digital and data literacies in both cultural production and consumption. It will consider the role of research as a catalyst for exploring digital and data-driven futures for live events and appetite for, and literacies and resilience of, continued development of online and hybrid programming for co-creation of new modalities of experience. In addition, it will explore the evolving role of physical places, cities, or designated spaces as hosts of live experiences – particularly in the context of Edinburgh and southeast Scotland's festivals – and the potential of a relationship between online, offline, and hybrid programming as both an opportunity and a challenge in empowering the cultural sector and its audiences.

COVID-19 and the cultural sector's 'pivot to digital'

From March 2020, when in-person cultural events were suddenly no longer possible due to lockdown restrictions, and for much of 2021, cultural organisations in the UK and many other countries around the world embarked on what has been termed a "pivot to digital" (Walmsley et al., 2022). In 2022, the Centre for Cultural Value (CCV), based in Leeds, UK, published the *Culture in Crisis*[1] report, based on research about cultural organisations' outputs and audiences during the pandemic. The report found that cultural organisations, particularly those that were already literate in digital ways of working, were able to quickly adapt their offer to audiences through producing and delivering digital and online rather than live events. This is shown to have been embraced by existing audiences and policymakers as an example of the creativity of the cultural sector and its vital role in offering positive reasons for the public to stay at home (Bakhshi and Fazio, 2020). Yet, with a broader and longer-term lens, the 'pivot to digital' is shown by the CCV report to have had little impact in terms of extending digital practice to other cultural organisations or in reaching new audiences:

> Those who had previously invested in digital data practices and technologies were better prepared to realise new digital and hybrid forms of engagement than those who lacked the capacity to embrace digital strategies to engage communities in their programmes and collections, beyond their institutional walls. Audiences who were already highly engaged found new, digital ways of enjoying the arts and cultural content; those who were less interested pre-pandemic remained so in 2020.
>
> *(Walmsley et al., 2022, p. 5)*

In addition, regarding any longer-term impact of digital adaptations related to COVID-19, and on the value of digital as part of the sector's engagement with audiences going forward, the report states that:

> digital distribution is not the great equaliser or diversifier that much of the sector was hoping it was or even claiming it to be.
>
> *(Walmsley et al., 2022, p. 68)*

However, this is not to say that there are no recommendations here for continuing digital production and audience development strategies. This is partly, as the *Culture in Crisis* report acknowledges, because this is often the requirement of cultural policymakers (Walmsley et al., 2022). However, it also suggests that targeted experimentation with digital technologies and content as part of a 'hybrid' strategy of bringing audiences gently back to live experiences and could be part of a long-term strategy of engagement with audiences through which "Digital innovation can make a positive difference"

(Walmsley et al., 2022, p. 68). This positive difference could relate to maintaining the economic value of the UK performance and events sector, but also in considering its social value. The report recommends a longer-term approach to considering how the UK's cultural sector might recover from the pandemic that includes a 'pivot to purpose', which is identified by the Centre for Cultural Value as a "general strategic shift" (Walmsley et al., 2022, p. 64) towards a recalibration of cultural value for workforces and audiences, and the cultivation of a values-led culture through which to enact that recovery.

For Edinburgh and southeast Scotland, the impact of the COVID-19 pandemic was felt on the cultural sector, festivals, and events both directly and indirectly through their relationship with the city's also badly affected tourism infrastructure. This is particularly notable in Edinburgh, where destination marketing for the city's cultural status often leans heavily into its framing as the "world's leading festival city."[2] In a study of arts festivals in South Australia, which was contemporaneous to the *Culture in Crisis* report, Ruth Rentschler and Boram Lee identify this link between cultural destination tourism and live events and state that:

> There is now incentive for the industries [tourism and events] to work together.
>
> *(2021, p. 45)*

They identify three areas of transformation in South Australia's arts festivals sector: from an international to a local focus, from competition to collaboration, and a shift towards digital. In considering the values-led perspective put forward by the *Culture in Crisis* report through the lens of a pivot to purpose, Rentschler and Lee are somewhat more pragmatic, stressing the importance of being aware of the relationship between the "conceptual" and the "empirical" in studying the impact of COVID-19 on the arts (2021, p. 38) and of "flexibility" (p. 49) in considering the qualities we now look for in a festival and a cultural destination as we move away from the pandemic. The case studies included here document a renewed sense of purpose towards addressing inequities in access to the cultural sector and the potential role of digital technologies and data-driven innovation to help with that process.

This chapter builds on these ideas by exploring this concept of a digital shift during the COVID-19 pandemic and beyond, looking specifically at the perceived and recorded impacts of a 'pivot to digital' and its effects as cultural events and performances have returned. It incorporates experiences of cultural sector workforces and audiences in the production and consumption of live events mediated by digital technologies and data. While the following case studies are all situated in the Edinburgh and southeast Scotland region, the findings from this collected research speak to experiences from the wider lens of the UK's cultural sector, as well as to the implications of

digital approaches to accessing 'Edinburgh' as an imagined cultural destination from outside the city.

Case studies

Learning from the 2020 Edinburgh Festival Fringe

In June 2021, researchers from Creative Informatics published a report[3] based on a study of the experiences of Fringe participants in 2020. The research recorded the remarkable circumstances that made an in-person Edinburgh Festival Fringe impossible in 2020. It reflected on responses through digital technologies from artists, producers, and venues and sought to begin to identify longer-term shifts that might come about in the performing arts and events sector.

The research documented a broad public response to Fringe events that were (and were not) able to take place online in 2020 and interviewed performers, writers, producers, and promoters about the specific challenges they faced. The project identified three broad areas of recommendations for future exploration and development: for performers, for festivals and venues, and for researchers and designers around opportunities to harness the rituals associated with the experience of attending an in-person performance and ways to consider new forms of liveness through digitally mediated cultural production and consumption.

Future Culture Edinburgh

Future Culture Edinburgh[4] was a one-off symposium event, developed and delivered by University of Edinburgh researcher Vikki Jones with freelance creative and cultural commentator Morvern Cunningham, which took place at Edinburgh's Leith Theatre on 1 September 2021. The event and a report of its findings[5] explored a participatory framework based on action research and reflection-in-action principles (Schön, 1983) through which stakeholders – with a focus on traditionally underrepresented voices – could imagine possible and preferable futures for the city's cultural sector.

The event included presentations by a diverse group of speakers including artists, writers, cultural leaders, and researchers, alongside workshop activities. These were designed to encourage participants to begin to identify the values, actions, and collaborations through which collective action towards a more equitable sector might be enacted. In late 2021, when the region had been able to produce live, albeit restricted, events, the programme for this event required sensitivity to the mood of the sector at the time. There was a sense that post-pandemic futures were very much uncertain and that the precarity of work in the sector had both unified those who were struggling and

exposed and exacerbated inequities of access to careers in the city's cultural ecosystem.

FestForward Magazine (see also following case study)

In 2022, Creative Informatics undertook a Creative Horizon project,[6] which asked how digital technologies, data-driven innovation, and online platforms for performance can support equitable and sustainable futures for festivals in Edinburgh and southeast Scotland in 2030. Working in partnership with Glasgow-based futures design researchers Andthen,[7] the project interviewed people working in and supporting the region's festivals, which informed the design and delivery of a series of participatory futures workshops.

Participants were invited to become speculative 'journalists' for *FestForward Magazine*, Scotland's leading cultural publication in a fictional 2030. They responded to imagined 'provotypes' – low-fidelity cultural artefacts that frame and prompt the envisioning of a scenario – of possible digital futures by writing magazine article headlines. These headlines were developed by the research team to produce a print and digital summer 2030 edition of *FestForward*.[8] The magazine has been used by researchers, policymakers, and cultural and festival organisations as a creative way to stimulate conversations about possible and preferable digital futures and ways to develop equitable and sustainable approaches to digital and data-driven technologies at, with, and through festivals.

Digital, hybridity, and liveness in live performance

Research conducted with Edinburgh Festival Fringe participants in 2020, and interviews with festival workers in Edinburgh and southeast Scotland in 2021–22, document broad perceptions of the value of digital technologies and data-driven innovation for cultural events and performances. In 2020, the cost of producing 'quality' digital content and performances with high production values, compounded by restricted access to such services and the loss of revenue from not being able to perform in person, left many Fringe artists and producers feeling unable to compete with large organisations able to release high budget recordings of lavish performances, such as London's National Theatre.[9] However, many Fringe participants also embraced the challenge of a 'pivot to digital' and spoke positively of the opportunity to explore new ways of creating and distributing their work and building more direct relationships with their audiences. Researchers observed cultural workers becoming more strategic 'content creators' – engaging in online economies and striking a balance between distributing live and recorded content across various platforms (Elsden et al., 2022).

Speaking to those working in and around festivals about their experiences of digital programmes during the pandemic and exploring their hopes and expectations for digital festival futures (the work that led to the creation of *FestForward Magazine*; see case study), participants reported positive responses from both existing and some new audiences to digital programmes in 2020. These findings built on the research conducted with Edinburgh Festival Fringe participants in 2020, when the focus was more on the nature and immediate effects of digital adaptation. However, by 2021–22, these events were becoming situated in the broader trajectory of returning to a more 'normal' model of festival delivery. In these later interviews there was a strong sense that for many cultural organisations working with small teams and small budgets, there were challenges involved in resourcing and supporting digital programmes beyond the digital marketing activities that were already embedded pre-pandemic. Creative Horizon Project participants also reflected on and reported a broader sense within the sector that in the rush to get back to 'normal' live performances, the appetite for any lasting adoption of digital adaptations had been put to one side.

During COVID-19 restrictions, the term 'hybrid' – loosely describing events and activities that incorporate both online and in-person elements – became widely used not just to describe public performances and events but for private meetings and as a term to define adaptations to our working lives. For cultural events and performances, notions of hybridity and experimentation during lockdowns took digital and online performance beyond the recording and subsequent online distribution of a live performance in a cultural venue (Elsden et al., 2022). If lockdown restrictions brought about hybrid cultural events by necessity, what comes next is the consideration of what hybrid-by-design might look like. How might ideas and contexts of hybridity, of multiple access points to events both in-person and online, synchronously and asynchronously, develop? What is the appetite for doing this work from the perspectives of both those who make, and those who consume, cultural events? Recent work by researcher and writer Katie Hawthorne explores contested definitions of liveness in performance, set against liveness viewed in the context of digital media. Through these two lenses, Hawthorne develops three key terms – digital distribution, digital mediation, and digital location – to describe ideas of liveness. Digital distribution centres on documentation and sharing of performance, digital mediation places digital tools in between interactions between audiences and performers, and digital location is applies to performances that happen in a digital rather than physical space (Hawthorne, 2022). These definitions begin the process of understanding the conditions through which digital liveness might grow and develop post-pandemic.

At *Future Culture Edinburgh* in September 2021 (Jones and Cunningham, 2022), workshop activities found that digital technologies and events were

not a key focus for developing more equitable cultural structures amongst participants. In conducting the preliminary research interviews for further work envisioning digital and data-driven festival futures in late 2021-early 2022, Creative Informatics researchers encountered mixed feelings among those working in and around festivals in the region about the potential for future development of digital and hybrid events and approaches. Some felt excited by the accelerated adoption of technologies in both the production and consumption of cultural events and were actively working to continue to develop their practice in this area. These participants ranged from festival organisers who saw opportunities in digital development and online practice in areas of equity of access and audience development to those whose work focused on developing digital and online performances and platforms for supporting and distributing them. Others were much more focused on a return to pre-pandemic models, particularly if their organisations or practice had not previously included much allocation of resource for digital work beyond seasonal marketing support. Across this spectrum of experience, many participants noted that the economic case for investing in digital technologies as part of live event programmes was difficult to make in the immediate aftermath of COVID-19 restrictions and has become more so in the face of global economic challenges.

As well as the need for a financial case for digital and data-driven live event programming, the concept of 'liveness' and the notion of shared experiences, rituals, and codes (Piccio et al., 2022; Elsden et al., 2022) that accompany attending a festival event or performance were key points of discussion both in the height of lockdown restrictions in 2020 and thereafter. In conducting research into experiences of the 2020 Edinburgh Festival Fringe, Creative Informatics researchers recommended a focus for future development for online and digital festivals by preserving opportunities for social interaction with and amongst festival audiences in a situation where digital access might be seen to impede or fragment a sense of collective audience experience. Liveness, they found, was captured in "an immediate and tangible chemistry between the audience and the actors on stage" (Piccio et al., 2022, p. 5) which cannot be entirely replicated in events that take place across times and spaces, mediated by multiple platforms and devices. In this sense, online events at the 2020 Edinburgh Festival Fringe were very often felt to be lacking through the absence of a recreation of an in-person audience's "full experience journey" (Piccio et al., 2022, p. 9). As such, the idea of 'liveness' itself also became ritualised as the expectation of performances and live events that would be the most difficult for any digital representation to meet.

Digital and data literacies in live events and festivals

Where digital adaptations came about because of the cancellation of live versions of events, it is easy to understand why these could be viewed as 'less

than' a live, face-to-face experience. But, as already noted, where these adaptations were the only option for already engaged cultural audiences, they were supported, even if they did not necessarily fulfil the promise of reaching large numbers of new audiences (Walmsley et al., 2022). However, as intersecting conditions and definitions of digital liveness (Hawthorne, 2022) show, the influence of digital technologies over live performances and events is more complicated than a live/digital binary. Before, during, and since COVID-19 restrictions, liveness and the audience experience that surrounds it have been mediated, moderated, and enhanced by digital technologies.

When the first COVID-19 lockdown was announced, programmes like the National Theatre's NT Live[10] – which screens optimised, high-quality recordings of live theatre performances in cinemas – had a pre-existing model that could be adapted for at-home viewing during the pandemic. Those Edinburgh Festival Fringe artists interviewed by Creative Informatics researchers in 2020, however, had no such archive or material and often no access to recording equipment that might produce engaging recordings of full-length performances. Instead, the research found that artists looked to other ways to generate value from live online performances and recordings and their distribution, and began to develop new skills and literacies to approach that work (Elsden et al., 2022). For those artists, rather than attempting to compete with whole event recordings that were able to create an experience very close to in-person liveness – or at least one that could compete with the production values of familiar streaming services – they experimented with technologies, formats, and platforms for performance that went beyond replicating liveness towards creating new modalities of digital experience. In doing so, these forms of online content did not set out to devalue live performance but to explore new forms of liveness within the parameters of their artforms, digital skills, and access to online audiences.

The rapid growth of some previously little-known platforms – perhaps most notably the video calling and streaming platform Zoom – provided new performance opportunities. Rather than exposing artists and producers to brand new digital tools, skills, and formats, the pandemic could be seen as having forced a recalibration of the perceived value of digital experiences within the broader context of producing and consuming live events. The mediation of liveness through digital platforms was happening prepandemic – from the targeted audience interactions that are enacted through digital marketing and social media (Miles, 2018; Noehrer et al., 2021), and reaching new and broader audiences (The Audience Agency, 2019; DCMS, 2018) to box offices, ticketing, and access to reviews by audiences as well as by critics. At a general level, what happened in 2020 and 2021 was that the impact of the pandemic accelerated, or shifted, the configuration and value of digital approaches, rather than brought them about (DDCMS and AHRC, 2021), at least within those organisations with pre-existing skills and digital presence best placed to make that shift (Walmsley et al., 2022). This is not

just the case for audience reception of live events, but for the cultural work-forces that produce, market, and deliver them too.

The findings from Creative Informatics' 2020 research show how quickly adaptations and new forms of digital work were created in response to the cancellation of the Edinburgh Festival Fringe. Another piece of Creative Informatics' research, Improvbot,[11] demonstrates how those working in and around the festivals sector who had the resources to do so were able to use the time afforded by the cancellation to explore pre-existing projects play-fully and in ways that would not have happened during a 'normal' festival run (Terras et al., 2021). This practice-based digital research project used 28 million words of text from Edinburgh Festival Fringe show listings from 2011 to 2019 to train an AI neural network to produce AI-generated event listings for a fictional virtual festival of performance and comedy. Multiple listings were posted daily on Twitter throughout what would have been the dates of the 2020 Fringe. And, each evening, the University of Edinburgh Theatre Company's improvisation group – the Improverts[12] – responded to some of the listings to create a one-off Fringe cabaret performance, hosted online. While deliberately designed to bring some lightness to the unease of our collective experience of COVID-19 lockdowns and the exposed precarity of artists who were no longer able to present their work at the Fringe that accompanied it, Improvbot also surfaced challenges around tensions between human creativity and artificial intelligence in creative work that have grown and developed since 2020. In creating an AI-generated festival, happening in and led by machines, Improvbot was also impactful through its highlighting of the material parts of the 2020 Fringe that were not happening that year – performances, but also the printed Fringe brochure, as noted by a review in The Stage whose writer experienced:

> unexpected nostalgia for leafing through the last-minute word salads con-tained within the pages of the Fringe brochure. After all, the perfect storm of virus transmission and technological advances leaves us wondering whether we'll ever see that publication again.
>
> *(Pollock, 2020)*

The sense of a recalibration of relationships between the digital and the live during the pandemic was very much at the heart of the development of the research questions and themes that informed the speculative, participatory futuring methods (Kozubaev et al., 2020; Ramos et al., 2019) of the research that became *FestForward Magazine* (see case study). This project sought to bring together research into digital responses to the pandemic and the focus on inequities of access to cultural jobs and experiences that the pause of live events during lockdowns brought about. By asking participants working in the cultural events and festivals sector to envision digital and data-driven

festival futures in 2030, the goal was to explore possible and preferable futures without dwelling too long in the complexities and challenges of the present. But a near-future scenario also gave space for reflection on what had passed. To explore and envision these digital futures, Creative Informatics researchers identified four themes through which to develop participatory work with the live events and festivals sector. These were the uses and value of data from and for festivals, artists, performances, and audiences; cultural work and platform labour – considering the shifting mediations of live and digital both on stage and off; producing and experiencing live performance; and new creative transactions – exploring alternative payment and distribution models for live events mediated through digital technologies.

The case study accompanying this chapter explains the process of conducting the participatory research that produced *FestForward Magazine*. But these themes were employed first by the research team to produce a series of speculative artefacts called 'provotypes'. These were used in participatory sessions with festivals sector workers to evoke possible futures around digital technologies and data and their potential role in equitable and sustainable festival futures. At online and in-person workshops organised according to these themes, the provotypes acted as prompts to frame discussions and activities where participants became *FestForward* journalists and wrote headlines about their responses to the near-future scenario provided. Through participatory futuring and speculative design methods (Kozubaev et al., 2020), the provotypes successfully supported positive conversations about possible and preferable futures that were also sensitive to the complex economic, social, political, and cultural challenges the sector had faced.

By bringing ideas of equitable and sustainable festival futures together with digital technologies and data-driven innovation, the research sought to explore new framings and perspectives on the ongoing and developing role of data, platforms, digital media, and modes of performing liveness for festivals and cultural events. In 2021, when live events began to return to the Edinburgh and southeast Scotland region, local research at the time, including *Future Culture Edinburgh* (Jones and Cunningham, 2022), indicated that exploring and imagining these ideas and actionable futures was difficult and complex. Furthermore, when challenges were identified, they were often interconnected with external policies and practices making them hard to address unilaterally. This was extenuated by the contemporary landscape of social and economic precarity and inequities of access to careers in the cultural sector (Brook et al., 2020) that the pandemic had further exposed and that could understandably make cultural organisations, artists, and producers more risk averse. In addition, some of the lack of interest in and focus on seemingly positive developments brought about through digital developments could be quickly surpassed by a reported need for in-person human connection through festivals and events.[13] A nostalgic take on the need for,

and specificities of, liveness was also found to have led to an outright rejection of forms and formats of festival production and distribution that might deviate from the opportunity to return to 'normal.'

In interviewing participants to inform the process of making *FestForward*, barriers to continuing to develop work on digital, online, and hybrid events programmes very often included high costs and difficulties in monetising these events, as well as a lack of resources, skills, and literacies to fund digital cultural work that went beyond digital and social media marketing. As a result of the challenges of economic, structural, and skills support, across the spectrum of organisations, funders, and artists, the research found a directly and indirectly reported lack of appetite for further development. But with our lives and our consumption of culture continuing to become more and more mediated by and through digital technologies and platforms, part of the mood that *FestForward* captured was also about a bigger conversation about the role of technologies, platforms, and data in cultural production and consumption more broadly, and how to develop new funding and business models that extend further than just generating economic value and revenues from culture and creative work. This near futures focus allowed the project to explore not only how these technologies help to produce and mediate festivals and events but the idea of a festival itself as a platform through which to think about, develop, and promote ideas of agency, equity, sustainability, and power in making and accessing these events (Mair and Smith, 2021) and to make a case for the development of economic, social, and cultural conditions through which to build a connection between digital technologies and data for broadening and deepening access.

Exploring place in the context of digital and hybrid events

As already noted, the city of Edinburgh as a cultural destination is synonymous with arts festivals, particularly those that take place during the city centre in August, when the Edinburgh Festival Fringe is just one of a group represented by the strategic organisation, Festivals Edinburgh, that includes the Edinburgh International Festival, Edinburgh Art Festival, Edinburgh International Film Festival, Edinburgh International Book Festival, and the Royal Edinburgh Military Tattoo.[14] In August, Edinburgh becomes a city which can be 'done', a 'Festival' which creates a public-facing collective of what is in fact several independent cultural organisations. This imagined 'Edinburgh' fulfils a particular function for festival audiences – those who live in the city and its visitors – but also for the city and its year-round cultural life and infrastructure, with its 'world-leading' tag line also generating impacts for tourism and for other festivals in the region that are not able to, or do not want to, operate on that register or at that scale and who work to different models that they feel best serve their region and audiences. 2022 figures produced by Festivals Edinburgh report 3.2 million festival attendances,

generated by 700,000 attendees,[15] while the city's population was recorded as just over 526,000 in the same year.[16]

The Edinburgh cultural imaginary, as we have termed it, generates economic value for the city – its economic impact was recorded in 2015 as being £280 million for Edinburgh and £313 million for Scotland and updated in 2022 as £407 million for Edinburgh and £367 million for Scotland.[17] But the city as a cultural destination is also connected to the year-round social, political, and cultural values of the place. In fact, the post-war founding of many of Edinburgh festivals, alongside the 1946 founding of the Scottish Tourist Board, put culture at the heart of the UK's post-war recovery through the chance to focus on our value and values while also positioning culture as an "economic tool" (Bartie, 2013, p. 2). Festivals are very much embedded in the structures of the Edinburgh imaginary, and in the city's modern cultural and architectural history, so it is easy to see how the disruption and cancellation of live events in Edinburgh specifically were extremely unsettling for those working in the city's cultural sector. Attempts made by festivals in 2020, in Edinburgh and in the rest of the region, can be seen – as supported by Creative Informatics' Fringe 2020 research – as responses that experiment with ideas of digital placemaking, festivals as platforms (in both their online and in-person programmes), and the opportunities for multiple points of access that digital and online presentations can bring, including the potential for exploring digital modalities as means of generating economic benefits for the city.

Despite some calls for a swift return to pre-pandemic 'normality', research in the Edinburgh and southeast Scotland region as we emerged from lockdown restrictions, including the case study research incorporated here, began to explore the relationship between notions of place and digital technologies, skills, and datasets. These findings broadly correspond with Rentschler and Lee's three themes for transformations of arts festival places in South Australia – the balance between local and international focus, the need for multi-organisation collaboration, and a shift towards digital approaches (Rentschler and Lee, 2021). The report from *Future Culture Edinburgh* (Jones and Cunningham, 2022) found tensions around the balance between Edinburgh's international outlook and reputation as a cultural destination and the city's cultural relationships with its residents and communities. This may in part be a reaction to the adaptations made by some cultural organisations during lockdowns, where their work was adapted to direct support for their immediate communities, including digital support (Jones et al., 2020),[18] as well as concerns around environmental sustainability impacts of bringing international artists to Scotland. While the Festivals Edinburgh[19] cultural destination umbrella signals collaboration between some of the city's festivals, the provotypes and imaginaries developed through Creative Informatics' Creative Horizon research puts forward futures-focused developments that might further embed shared working between festivals in Edinburgh and

further afield. From the envisioning of a Scottish Festivals Data Cooperative and the creation of a new job of a data custodian for festivals to a festivals currency that rewards support for local creative and experience economies, *FestForward Magazine* begins what could become a lasting exploration of ways in which digital placemaking can support and enhance new constructions of cultural places that incorporate both physical and digital environments and platforms and social, cultural, and economic benefits.

Envisioning equitable and sustainable digital futures for cultural industries

All the case study research projects included in this chapter have, in diverse ways, explored both present and future concerns in the sustainability of live events and festivals. As such, we can start to think about how the envisioning of possible and preferable futures can play a role in developing equitable and sustainable cultural sector infrastructures and ecosystems, with an increased focus on digital technologies – in Edinburgh and southeast Scotland, the UK, and further afield.

In 2020, Creative Informatics' research with Edinburgh Festival Fringe artists and producers showed that the speed and necessity of the 'pivot to digital' they had undertaken had challenged assumptions about digital approaches and live performance; encouraged experimentation; and changed, if only temporarily, the expectations and access points for both artists and audiences. The research made recommendations for artists in areas such as: continuing to develop digital stagecraft and ideas of liveness that capture a sense of being present in a social space, using recorded content strategically to expand the impact of recorded work; continuing to explore new approaches to ticketing and monetisation of digital performance; and recognising the potential of digital performance for access and inclusion; as well as for more sustainable approaches to international collaborations and touring. For festivals, in-person venues, and organisations, the research recommendations overlapped with those made for artists, but also included adapting organisational structures to accommodate digital roles and responsibilities, supporting audiences to navigate online content, supporting diverse forms of performance and performance content, and considering new forms of value of live events that learn from the issues of scarcity and liveness which 2020's Fringe programmes began to explore.

In bringing these three case studies together, however, the hybrid symposium event *Future Culture Edinburgh*, which took place in September 2021, shows a somewhat different picture to research in 2020 around digital and online adaptations to live events. When asked to think about parts of Edinburgh's cultural ecosystem that they would like to keep, lose, and change, participants – who were composed mostly of those who worked or had a keen interest in the city's cultural sector – did refer to the potential of digital

technologies and data-driven innovation. But, in a workshop activity looking at areas and ideas for future development, digital adaptations were not central to any of the options the group chose to document and explore. This finding, as the *Future Culture Edinburgh* report (Jones and Cunningham, 2022) suggests, could imply that the link between digital technologies and data and equitable and sustainable futures was not a well-developed connection for the sector at that time. But the report also notes that this lack of connection could be the result of a preoccupation with a return to 'normality' and in-person events after a reduced festivals programme that summer.

In surveying research in this space with lockdowns further behind us, it is easier to see that the lasting impacts and resilience of digital adaptations from 2020 and 2021 remain difficult to determine. As shown in the introduction, some of the imagined promise of digital technologies and programmes for allowing cultural programmes to reach new audiences was not found to have been borne out in audience data. Instead, those that accessed online programmes from established cultural institutions during lockdown were found to be predominantly the same people who had accessed similar activities in-person before the pandemic (Walmsley et al., 2022). In addition, economic challenges for cultural events and venues have meant that many are no longer able to continue to programme synchronous hybrid events or to make time and space for exploring and developing new approaches to platforms for performance, recorded content, or data-driven cultural work. Audience behaviours are also changing, as noted by the Audience Agency's Cultural Participation Monitor,[20] a UK-wide longitudinal survey which began in 2020 and records audiences' views on cultural participation. Findings released in summer 2023 show economic concerns and rising cost of living as being a key driver of declining attendance, which is lower than before the pandemic, but that decision making about attendance was also associated with audience expectations around cultural organisations' public articulation of their social and environmental values. While those surveyed expressed a strong preference for live cultural experiences, this was accompanied by preferences around more relaxed approaches to audience conventions and behaviours, for example, eating, drinking, and taking photographs.[21]

In this context, Creative Informatics' research has shifted its focus and stepped back from immediate challenges to begin to consider how to have complex conversations about digital futures for live events, particularly in the context of economic precarity and known inequities of access to cultural production and consumption. For research participants, these imaginaries acted as hooks on which to hang discussions that incorporate contemporary ideas, opportunities, and challenges while playfully imagining diverse future outcomes. In addition, as a speculative artefact, *FestForward Magazine* continues to act as a tool for discussion and for creatively imagining preferable futures – for those who make and consume live experiences – but also as a

way of sharing their experiences with funders and policymakers with a view to redesigning creative economies to be more equitable and sustainable.

Research commissioned by the Creative Industries Policy and Evidence Centre (PEC)[22] and Bristol (UK)-based UKRI-funded funded project MyWorld[23] entitled *The Networked Shift: A Creative Industries Foresight Study* (Coldicutt et al., 2023) used Bill Sharpe's Three Horizons Model (2019)[24] to explore futures for the UK's creative industries. In this use of the model, Horizon 1 represents 'business as usual' and the way things are done now; Horizon 3 is the path which becomes the long-term replacement for the ways of doing things that were previously the case in Horizon 1. Between these two paths is Horizon 2, which represents the more incremental innovations and things that happen that allow Horizon 1 to be superseded by Horizon 3 (Coldicutt et al., 2023). Through interviews and workshops, Coldicutt et al.'s research identified preoccupations for the UK's creative industries, which were further narrowed to three interconnected 'sticking points' – defined as "clusters of social, economic and technical conditions" (Coldicutt et al., 2023, p. 4) – that can be either enabling or inhibiting change. The first, 'The Opportunity Contradiction', shows that the democratisation of access to production and distribution brought about by digital technologies and platforms is not reflected in the demographics of the creative industries workforce (Brook et al., 2020), which inhibits change through a sense of unresolved tension between the expectation of opportunity and the challenge of initiating that reality. The second explores the impact of automation on the creative industries, including the ethical and human challenges that may arise. The position of the creative industries to meet these challenges and embrace opportunities may vary as a result of social and economic situations, but the impact of hype, and the expectation of speed of development, have the potential to create and reinforce what the research terms a "high tech vs low tech" divide and preoccupation (Coldicutt et al., 2023, p. 12). The third sticking point considers 'Platform Dependency in a Post-Lockdown World' and notes the difficulties of data-driven decision making in a world which is still recalibrating post-pandemic, as well as the frequent disconnect between agile commercial platform businesses' capacity to change and that of the creative industries. When platforms set a different, and faster, pace, this can inhibit sustainable change for creative businesses and may cause them to miss opportunities to address inequities and prioritise sustainability and resilience (Coldicutt et al., 2023).

In examining these three sticking points, Coldicutt et al. capture some of the complexity of the interconnecting social, cultural, economic, and human challenges discussed here in relation to digital technologies and live events. There are notable intersections between these three sticking points and the themes through which Creative Informatics researchers explored digital festival futures in making *FestForward Magazine* – uses and value of

data, producing and experiencing events, cultural work and platform labour, and new creative transactions. In addition, Coldicutt et al. use their findings around this complex network of digital practices with the potential for change or changemaking to propose an additional Horizon 3 for this version of Sharpe's model. This horizon also gives the report its title, *The Networked Shift*, and predicts the growth of new practices through many and varied connections, often informal, that they predict will give rise to a "digital-by-default networked set of practices" (Coldicutt et al., 2023, p. 32) that will bring about digital transformation.

Again, it is interesting to map findings from *The Networked Shift* against the opportunities and challenges envisioned through Creative Informatics' participatory futuring research, which combined research-led, grassroots-led, and design-led approaches to build scenarios and worlds with and alongside participants to explore how these might look and feel. This work gave rise to several imaginaries across the four research themes outlined previously that support the idea that these networked practices might happen outside of traditional cultural institutions and festivals. The provotypes and magazine headlines created through the project and featured in *FestForward* include several cross-cutting and networked ideas: from a Cultural Platform Labourers' Union and its organised strike action to a Scottish Festivals Data Cooperative; and from a Sustainable Innovation Award-winning festival currency, Fe$toons to responses to the closure of previously dominant online platforms. While designed as fictional examples, the creation of these provotypes are suggestive of what has been termed the moral economy of cultural work (Banks, 2006). In attempting to both study and create the conditions for change, all the research this chapter examines – but particularly the fictionalised 'editorial' role of the research team in *FestForward Magazine* – uses the time and resources afforded to researchers to take the privileged position of undertaking futures-focused work.[25] That is not to say, however, that the perceived precarity and complexity of the situation and challenges of those working in the cultural and festivals sector, as well as the creative industries more broadly, prevents changemaking through the practice of cultural work. Part of the role of research that focuses on the envisioning of possible and preferable futures is that it could be part of the social, cultural, economic, and political approaches that might facilitate the development of the moral economy and bring those imagined futures about. This could take the form of experimenting with new funding structures and business models to support digital and data-driven innovation in live events and cultural industries; supporting networks of creative workers to exchange knowledge and ideas to create and communicate shared value propositions around equity, sustainability, and digital technologies; and making a case for cultural places that learn from the concepts of live events as platforms, digital distribution, and new modalities of presentation and performance to support equitable and sustainable cultural events.

Conclusion

As *The Networked Shift* report points out, the creative industries, and the live cultural events and festivals sector, may not yet be able to make data-driven decisions about changemaking in the aftermath of the COVID-19 pandemic. We do not yet know what, if any, lasting impact the rapid digital transformations enacted by live performers in 2020, as captured by Creative Informatics' work with Edinburgh Festival Fringe participants, will have. The Centre for Cultural Value's *Culture in Crisis* report shows that digital cultural events programmes during lockdown did not attract new audiences, but did open conversations about access to digital cultural experiences for broader demographics than organisations might have been expected to reach before. The ideas captured at *Future Culture Edinburgh* in 2021 are also reflections of continued pandemic uncertainty, alongside a clear appetite for change, but also a nostalgia for 'normality.'

For now, the lasting impact of the cultural sector's pandemic 'pivot to digital' might only be the fact that we know that it happened, and so that it could happen again. But with that knowledge comes a sense of an increased awareness of and interest in digital technologies, data-driven innovation, and hybrid and digital approaches in connection with live events and festivals. As the body of research discussed here shows, there are diverse ways to collaborate with cultural and creative professionals and practitioners to explore possible and preferable, and importantly more equitable and sustainable futures, that have the power to influence decision-making in the present, even with a social, cultural, economic, and political background of continuing challenges and uncertainty. The 'networked shift', the hype of AI, and the continued dominance of commercial digital platforms are all discussion points which are likely to continue to develop new modalities of experience beyond the pandemic. The positioning of these conversations, through the creative industries themselves and through research, in the context of new framings of creative economies – to include moral economies and ethics of care approaches to cultural work – will allow the conversation about the role of data, platforms, digital media, and modes of performing liveness to continue to balance the complexities of equitable and sustainable approaches and programmes with digital innovation.

Notes

1 https://www.culturehive.co.uk/wp-content/uploads/2022/01/Culture_in_Crisis.pdf (Walmsley et al., 2022).
2 https://www.edinburghfestivalcity.com/the-city
3 https://zenodo.org/record/4775363
4 https://efi.ed.ac.uk/future-culture-edinburgh/
5 https://zenodo.org/record/6037499
6 https://creativeinformatics.org/creative-horizon-projects/
7 https://www.studioandthen.com

8 https://www.festforward.org
9 https://www.nationaltheatre.org.uk
10 https://www.ntlive.com
11 https://improvbot.ai with more information about the project in a Creative Informatics research blog from August 2020 at https://creativeinformatics.org/research/improvbot-and-practice-based-digital-research/
12 https://www.bedlamtheatre.co.uk/shows/improverts
13 See for example an article by Edinburgh-based culture writer Arusa Qureshi https://www.timeout.com/news/the-edinburgh-fringe-is-back-but-what-do-the-locals-think-071122, which looks at Edinburgh's perceptions of a return to a larger in person programme in August.
14 https://www.edinburghfestivalcity.com/#festivals
15 https://www.edinburghfestivalcity.com/news/1660-unique-edinburgh-festivals-programmes-strengthen-recovery
16 https://www.edinburgh.gov.uk/downloads/file/30669/edinburgh-by-numbers-2022
17 Taken from key findings from the Executive Summary of Edinburgh Festivals 2015 Impact Study, produced by BOP Consulting and commissioned by Festivals Edinburgh, https://www.edinburghfestivalcity.com/assets/000/001/964/Edinburgh_Festivals_-_2015_Impact_Study_Final_Report_original.pdf?1469537463, p. 1 Updated impact figures from the summary of the 2022 Impact Study, https://www.edinburghfestivalcity.com/assets/000/005/534/Edinburgh_Festivals_Impact_Study__digital__original.pdf?1687855168. This report notes that the "increase in net aggregate economic impact for 2022 was greater for Edinburgh than for Scotland in part because of more spending from Scottish 'staycation' audiences, contributing to larger additionality of audience spending in Edinburgh (82%) than in Scotland (64%)" (p. 2).
18 For an Edinburgh context, see the Edinburgh Culture and Communities Mapping Project's 2021 report, *Art in and Out of Lockdown*, which documents responses to the COVID-19 pandemic from eight Edinburgh-based community arts hubs https://www.edinburghculturalmap.org/research/art-in-out-of-lockdown-report/
19 Festivals Edinburgh is the "strategic umbrella organisation" that supports collaborative promotion of the city's festivals brand to "develop the value" of the festivals. See https://www.edinburghfestivalcity.com/about
20 https://www.theaudienceagency.org/evidence/cultural-participation-monitor
21 https://www.theaudienceagency.org/news/cultural-participation-monitor-findings-summer-2023
22 https://www.pec.ac.uk [Accessed 1 June 2023].
23 https://www.myworld-creates.com/ [Accessed 1 June 2023].
24 https://www.h3uni.org/tutorial/three-horizons/ [Accessed 1 June 2023].
25 See, for example, reflections from the Joseph Rowntree Foundation's Emerging Futures programme, written in April 2022, https://www.jrf.org.uk/blog/building-alternative-futures [Accessed 1 June 2023].

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CASE STUDY

Envisioning equitable and sustainable digital festival futures: *FestForward Magazine*

In August 2022, Creative Informatics published the output from its Creative Horizon 3 research project,[1] *FestForward Magazine*, (https://festforward.org) a fictional, speculative cultural magazine, which is envisioned as Scotland's leading cultural publication in 2030. At the heart of the project was the idea that the magazine and the methods used to make it offer a creative and engaging way to start conversations about possible and preferable festival futures – for festivals and those who work with them but also for policymakers, funders, and other academics in this space.

The magazine was developed by Creative Informatics researchers Vikki Jones, Chris Elsden, and Ingi Helgason and designed in partnership with Glasgow-based futures design researchers, Andthen.[2] All the content was based on interviews and workshops with people working in the festivals sector in the Edinburgh and southeast Scotland region, and explored the question of how digital technologies and data-driven innovation might support equitable and sustainable festivals in 2030.

The purpose of the project was to bring together two strands of work from existing Creative Informatics research – looking at ways to imagine equitable and sustainable festivals in the region and around new framings of digital and data-driven festivals and festival economies, particularly in the context of the impact of COVID-19 restrictions on live events.

Revisiting this work allowed the research team to establish four key themes for the project:

- The uses and value of data from and for festivals, artists, performances, and audiences.
- Cultural work and platform labour – considering the shifting mediations of live and digital both on stage and off.
- Producing and experiencing live performance.
- New creative transactions – exploring alternative payment and distribution models for live events mediated through digital technologies.

The research was planned around the idea of participatory futuring – designing spaces and outputs with people working in the sector – and speculative design methods (Kozubaev et al., 2020) – This approach facilitated the creation of speculative 2030 imaginaries of equitable and sustainable festivals and helped with the further development of these themes in the context of understanding participants' near future expectations for digital technologies and data-driven innovation.

The first stage involved semi-structured interviews with people working in the sector. From there, the research team and Andthen developed a series of 'provotypes' – near-future scenarios represented through visual storytelling and artefacts. From these provotypes, the team delivered a series of online and in-person workshops with people working in the festivals sector. On entering the workshop space, participants were given a new job as *FestForward* journalist and, inspired by our themed provotype scenarios, were asked to write headlines inspired by what they had seen and discuss their thoughts, hopes, fears, and challenges with one another. From here, the research team coded the headlines, reflected on the responses, and brought them together to write and design the content in the magazine.

Unsurprisingly, given the rapid developments taking place in creative digital technologies, some of the technologies envisioned in *FestForward* were very much in use within a year of its publication. Most prominently, the imagined AI-powered scriptwriting software – Culture.ai – dated quickly. At the time of writing, creative AI is quickly becoming a developing tool in the creative industries, as reflected in Creative Informatics' AHRC-funded Creative AI Demonstrator project, which explores the potential of AI – the opportunities, as well as the challenges.[3]

Other ideas developed in the magazine align with ongoing public conversations about data – what we are prepared to, or left with little option not to, give away, and the value we receive as a result. Or is there, and could there ever be, an algorithm that could account for the opportunity festivals offer to attend an event that is outside what you might usually choose? What data from other areas of your life would you be comfortable providing to a data-driven system to find it? These remain pertinent questions both for live events and festivals and for society more broadly.

Exploring the opportunities and value of data-driven innovation for the creative industries is at the heart of the Creative Informatics programme, and *FestForward* explores possibilities for the principles and practices of data collection, sharing, and analysis. Through the lens of cultural work, which is one of the key themes of this research, the magazine envisioned the role of an independent Festivals Data Custodian and considered the impact of a collaborative data-driven approach for festivals in the region.

By 2030, *FestForward* imagines, cultural work will become more and more mediated and performed through platforms. The magazine explores a 'day in the life' of a freelance festival platform worker, and a cultural influencer, to highlight the nature of platform work in the festivals and performance sector that, in a contemporary context, is perhaps more closely associated with other digital media. This imaginary extends to a collective response from workers to form the Cultural Platform Labourers Union, which tracks the working time and conditions of its members. Discussion of a planned strike in July and

August 2030 seeks to expose unequal opportunities and access to cultural work in the sector.

As Chapter 10 shows, digital technologies and data do not just support festivals and events, they are also ways to produce, present, and mediate performance. In a contemporary context, festival programmes have begun to return to formats and sizes that resemble pre-pandemic norms, and perhaps some of the expanded notions of the potential of digital and data-driven performances that COVID-19 lockdowns necessitated have been set aside. However, the near future scenarios laid out in *FestForward* imagine a steadier evolution of perceptions of the value of digital and hybrid performances in the run-up to 2030 that bring back more of these experiences, as well as new and nuanced concepts of digital liveness.

Vikki Jones

Case study notes

1 https://creativeinformatics.org/news/creative-horizon-3-envisioning-digital-futures-for-equitable-and-sustainable-festivals-in-2030/
2 https://www.studioandthen.com
3 See https://creativeinformatics.org/creative-ai-demonstrator-project/