



# Dream

A live, online performance  
set in a virtual midsummer forest

**Building a consortium model  
across sectoral divides**

# Overview

Interviewee:

Sarah Ellis, director of digital development, Royal Shakespeare Company

[www.audienceofthefuture.live/dream](http://www.audienceofthefuture.live/dream)

The RSC's real-time digital production *Dream* (12–20 March 2021) is an ambitious and ongoing collaboration across a consortium of 14 partners spanning arts and creative technology sectors. The project was made possible as part of the Audience of the Future demonstrator initiative supported by the government's Industrial Strategy Challenge Fund, delivered by UK Research and Innovation (UKRI).

This case study considers the specific challenges of convening a cross-disciplinary, cross-sector consortium and offers some initial guidance around building effective research and development (R&D) units for prototyping future-facing live audience experiences. It also provides an introduction to creative and technical aspects of delivering live performance using emerging technologies.

# Project context

*Dream* is an immersive live performance streamed online in March 2021, realised following three years of research and development led by the RSC, in collaboration with Manchester International Festival, Marshmallow Laser Feast and the Philharmonia Orchestra. William Shakespeare's *A Midsummer Night's Dream* is the starting point for the work.

The performance used cutting-edge technology drawn from the worlds of film visual effects (specifically motion capture) and video game development (using Unreal Engine) to enable actors' real-time movements to be tracked onto a digital avatar depicted within a full three-dimensional environment. The technology enabled the actors to generate improvised sonic elements through gestural commands while also permitting a degree of audience interaction.

The goal of the project was to explore how emerging real-time imaging technologies may generate new modes of live performance and audience experience. *Dream* was originally scheduled to open as a hybrid in-person and remote digital experience in spring of 2020. Due to the pandemic, the project underwent a significant pivot to fully digital, with the intention that this approach may also open a pathway to expanding audience engagement and longer-term sectoral resilience.

*Dream* ran for 10 performances online and was accessed via a custom web address with no requirement for audience members to have a VR headset or other similar display technology. Start times were staggered across the run of the show to accommodate key international time zones, in order to further widen access. The total run time was approximately 50 minutes, including a post-show scene tour and Q&A.

# ***Dream* trailers**

(Click to play)



**RSC trailer**



**Marshmallow Laser Feast trailer**

# Convening the consortium

A highly diverse consortium of skills and expertise was required to undertake a creative project of this nature. The approach to convening the necessary cohort of collaborators fell outside the standard arts sector model, which tends to draw upon partners from within the sector rather than looking to build a complex cross-sectoral network of diverse skills.

Extended beyond the RSC's existing network, the consortium expertise spanned digital art, gaming, film production (XR), live streaming and media psychology. A challenge when approaching funding in this space can exist around arts organisations competing among themselves. Ellis therefore looked to develop a model for cross-sectoral collaboration, which would help to avoid any particular hierarchy across the project participants.

The resulting consortium structure helped to amplify a sense of shared leadership, with participants flexibly contributing at key moments, depending on the relevance of their core competencies in delivering specific project milestones. This enabled dynamic and agile engagement throughout the R&D process, across a collective of different working practices. An environment and culture of collaboration and communication was also established horizontally across the consortium.

# Key learnings

- **Ensuring sufficient time is allotted to consortium building is crucial. The initial process of briefing and vetting potential partners may take longer than expected.**
- **Having a clear sense of the requirements from each company or partner from the outset helps to achieve a balance of skills across a consortium.**
- **Allowing partners to lean in and out at relevant moments can reduce bottlenecks around decision-making. Different voices will become more relevant at different stages of the R&D and production processes.**
- **The most effective way to validate the value (and need) of potential input from partners is through reference to their work. Knowing they have done something similar before or have at least been active in a similar practice can help streamline and accelerate the R&D process.**
- **When working across sectors with commercial partners it can be valuable to liaise with those who will be involved with actual project delivery within the company, i.e. beyond the business development lead. This helps to ensure project participants are clear on objectives and passionate about participating.**

# Audience research

As part of the core R&D, the *Dream* consortium undertook two phases of audience research around audience sentiment during the pandemic and its impact on expectations and needs for digital content. An internal advisory board was established within the consortium, drawing on relevant skill sets from its participants. In addition, external research was commissioned from i2 Media and Nesta to give a robust perspective across audience opinion.

Key learnings include:

1. Audiences sought a sense of togetherness through performance experiences.
2. Experiencing a performance live was vital for audiences.
3. Audience concerns around digital inequity were expressed, including issues of access to relevant technology at home to experience a virtual performance.

Taking these learnings to the creative team, it was vital to recognise that there would be no active audience base without access to VR headsets to deliver the experience. Given *Dream* as a VR immersive work had a target of reaching 100,000 audience members, it was necessary to reassess how the full experience might be delivered in a web browser.

From a social and cultural standpoint, Ellis also outlined the importance of ensuring that traditional cultural silos and biases, which have evolved over time to form barriers to access, were not replicated or reinforced through the project.

The audience needed to be able to access the full experience as opposed to a diluted version, in a way that would extend reach, in order to validate the creative opportunity of taking the technology beyond its predominant B2B deployment.

# Evolving ways of working

Ellis points to several transferrable learnings arising out of the R&D process across the lifecycle of the *Dream* project.

- Building cross-sector consortiums may help to alleviate pressures of competition between arts organisations, while amplifying the rich opportunities of collectively developing technologies, skills and their application.
- Key generational shifts powered by digital collaboration have fundamentally redirected the creator economy towards a form of pluralism and collectivism, and away from traditional notions of a single creative vision.
- When considering resilience and ensuring future audiences, an ongoing commitment to organisational progressivism that sees digital technology and related skill sets as imperative to growth is critical.
- Networks within regions are vital as they help to build decentralised cultural capital and expertise. Smaller scale regional organisations tend towards a high degree of localised expertise but often struggle to engage with larger funding mechanisms. A diverse and dynamic model of skills and expertise growth across regional networks may help alleviate this challenge.
- Higher education institutions (HEIs) have a vital role to play in adding academic and theoretical rigour to the R&D process. HEIs and academics can also deliver highest-value input (ensuring research output) at the conceptual or project framework stages, foregrounding audience research and interests. This can help balance any particular creative presumptions or structural biases that may otherwise be unwittingly built into the production process.



## Creative process

The following sections outline some of the key project development stages, spanning motion capture, environmental assets and build using Unreal Engine, and virtual production techniques.



# Project development

(Click to play)



# Environmental assets



Textural detail of natural objects within the environment



Detail of leaves and overhead forest canopy



Object textures and lighting detail within the forest

# Motion capture to output process

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1



The performer is filmed using a Vicon motion capture rig that records movement datapoints across the body. In this case, blending motion capture with virtual production techniques ensures that, as the camera moves in relation to the performer, the environmental backdrop moves in parallax and perspective to ensure realistic synchronisation of camera eyeline to performer to setting.

2



The performer's movement data is mapped in real time to a three-dimensional model/avatar within Unreal Engine. In effect, the performer is controlling or 'puppeting' the wireframe of the computer model through their performance, giving an unprecedented level of realism and spontaneity to the movement of the digital model.

3



The model is rendered in real time with the movement data and tracked into the three-dimensional environment within Unreal Engine. This is the output the audience experiences as the live visual during the *Dream* performance.

# Virtual production using Unreal Engine

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**FEATURE HIGHLIGHT**

**“Really good R&D allows you to strategise for a future that’s not yet known by putting real-world applications out there to build towards it.”**

Sarah Ellis, executive producer, *Dream* at RSC

## **Credits:**

Epic Games  
Royal Shakespeare Company  
Intel  
Magic Leap  
University of Portsmouth  
Goldsmiths, University of London

## **Funding partner**

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