AUDIENCE
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The UK Creative Immersive Landscape 2020:

Business Models in Transition

This report is a result of research conducted by Digital Catapult on behalf of UK Research and Innovation (UKRI), in collaboration with the Audience of the Future Demonstrator programme.

UKRI's Audience of the Future programme is funding industry-led consortia in the creative sector to create new immersive experiences.

The Industrial Strategy Challenge Fund brings together the UK's world-leading research with business to meet the major industrial and societal challenges of our time. Part of the government's £4.7 billion increase in research and development, it provides funding and support to UK businesses and researchers. It plays a central role in the Government's modern Industrial Strategy. It is run by UK Research and Innovation, which comprises the Research Councils, Innovate UK and Research England.

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Foreword

The UK's creative industries are global leaders and the growth of this sector over the last five years has made it even more central to the country's economy.

But a recent DCMS Select Committee inquiry into the impact of COVID-19 suggests that the pandemic poses 'the biggest threat to the UK's cultural infrastructure, institutions and workforce in a generation'. Digital technologies such as augmented, virtual and mixed reality were already enabling new companies to tell new stories in entirely new ways and to transform existing production processes and therefore contribute to that growth. But in the face of this massive challenge, they have also taken on a new role as they indicate new routes to revenue, recovery and growth for the creative industries.

The UK Creative Immersive Landscape 2020: Business Models in Transition report, supported by the Audience of the Future programme, looks to understand where opportunities for growth lie, and what the biggest obstacles to making commercial revenue are.

One of the report's key findings is that many immersive creators do not yet have the tools or connections to move towards revenue-driven models, and many remain in a cycle of perpetual experimentation and R&D, with small immersive producers hoping to generate enough income through grant and client-funded projects to fund their work. This, coupled with the ever changing hardware and software landscape, and a lack of support systems around distribution opportunities, means that it was already difficult for creative immersive businesses to find pathways to scale, even before we hit COVID.

Yet, immersive producers are hugely resilient. The four case studies explored in this report - Limina Immersive, Megaverse, No Ghost and Playlines, are some of the best-in-kind British immersive companies. They have all demonstrated the agility and perseverance of companies in this sector in the face of the many challenges posed by the pandemic, with each finding new models and opportunities. So, too, have the four Audience of the Future Demonstrators, all of which set out to make content suitable for an entirely different world back in 2018, but have each successfully pivoted to a digital distribution model.

As the world begins to emerge from the pandemic into an unknown future, we hope that the tools in this report will be a useful resource for immersive content producers. The approaches explored here will, we hope, be a great guide for companies to build and refine successful operational models, overcome commercialisation challenges and rethink their business logic to create more sustainable paths to revenue.

The report concludes with a consideration of what that future may look like, and it suggests three potential scenarios. We invite readers to ponder, challenge and respond with your own views as UKRI and Digital Catapult together continue to find new ways to help sustain and grow the creative industries including its immersive companies both for the UK and for global markets.

Professor Andrew Chitty
UKRI Challenge Director for the Audience of the Future and Creative Industries Clusters Challenge

Dr Jeremy Silver
Chief Executive Officer,
Digital Catapult

Executive summary

This research into the market of creative immersive productions in the UK was conducted as part of the Audience of the Future Demonstrator programme in 2020.

The goal was to understand where the biggest obstacles lie in making creative immersive productions commercially viable and scalable, whether location-based or digitally distributed. The results paint a holistic picture of the creative immersive landscape in 2020: the opportunities and the challenges that immersive producers within the creative industries face when they pursue projects from initial conception to launch.

Small immersive producers operate on the premise that initial grant or client-funded projects will eventually generate enough profit to invest into building their own IP. This ambition is motivated by creative aspirations first, profit second.

Immersive innovators are driven by a belief that the technologies they are focusing on are transformational. They believe that immersive technologies (for example augmented reality, virtual reality, projection technologies) open up opportunities to create unique experiences and ways of creating content or services. Therefore, their business models are in constant flux, because the technologies that enable this new creative space are not mature.

Creative immersive teams' skill sets do not necessarily include thinking about distribution opportunities in a revenue-driven manner, or carrying out business development to solve distribution issues. Companies with projects that originally aimed for location-based distribution do not necessarily have the resources or contacts to enable them to pivot to digital platforms.

The report concludes that most immersive companies in the creative domain remain in perpetual R&D, unable to catapult from explorative prototyping and proprietary technology development to sustainability and growth, despite initial funding support.

To foster forward-looking thinking in the creative immersive space, accessible tools for development are needed. The research answers the need by introducing business model innovation tools, aimed at helping creative producers to rethink their business logic.

The report concludes with three future scenarios for the creative immersive landscape. The scenarios are meant to inspire discussion about the possible future directions for the market, and how UK companies can collaborate in creating the future rather than reacting to it.

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Introduction

CREATIVE IMMERSIVE PRODUCTIONS, AUDIENCE OF THE FUTURE, AND COVID-19

This research was conducted as part of the Audience of the Future Demonstrator programme in 2020, with the COVID-19 pandemic as a backdrop. The goal has been to understand where the biggest obstacles lie in making creative immersive productions commercially viable and scalable, whether location-based or digitally distributed. What prevents creators of mixed reality theatre and augmented reality content, or virtual reality storytellers and documentarists from generating revenue from their productions?

Immersive technologies, such as augmented reality, virtual reality, projection displays and haptics have increasingly diverse applications in the enterprise market. 'Creative immersive productions' refers to creative industry projects that are aimed at attracting consumers through the arts, culture, and entertainment. Companies developing content creation or production tools for immersive productions also fall into this category.

Immersive experiences that leverage the latest technology include several existing formats: 'virtual art'[1], familiar from media art installations; 'immersive theatre'; and 'digital out-of-home immersive entertainment'[2], such as escape rooms and 'experience centres'[3] that bring heritage or science subjects to life in entertaining and engaging ways.

This research seeks to discover and introduce tools for thought that will help current and future creative entrepreneurs in the immersive space to thrive. This report presents a view of the creative immersive landscape for readers invested in its success - whether they are practitioners, researchers, commissioners, investors, or policy-makers - and engage them in a dialogue on the future direction of the space.

Research by StoryFutures Academy indicates that most companies operating in the creative immersive production space are small: "73% of companies creating audience-facing immersive experiences have between 1 and 10 employees. Immerse UK also estimates that, by turnover, over 30% of companies are either pre-revenue or derive less than £50,000 in company turnover from the sector."[4] This research, therefore, focuses on small companies.

Digital Catapult's previous research on behalf of UKRI, published as 'Audience of the Future, The immersive audience journey', discussed ways of thinking about immersive audiences more holistically when planning and executing a production. It concluded that a more focused understanding of the target audience is key to the success of future immersive productions, and that success might not be qualified in terms of massive mainstream breakthroughs, but rather as more comprehensive reach and engagement with niche audiences that are both intensely interested in the work and large enough to be commercially viable. This research picks up from this conclusion, exploring the challenges in reaching commercial viability, and ways in which a company might scale up from that point to becoming a sustainable business.

Arts Council England and Digital Catapult have reported that over half the immersive production companies in the first cohort of the CreativeXR programme (2017-18) had increased turnover, and that several of them had been able to develop new business models. Other types of business growth had come from "uses of technology, new artistic/ creative approaches and business improvements."[5] This report broadens the scope, looking at how such developments are undertaken and how the wider UK immersive creative community can achieve similar goals. However, due to the COVID-19 pandemic, supporting immersive creators' recovery towards sustainability in the UK is likely to be the primary goal for 2021 and beyond.

Introduction

Based on the audience insight research and ongoing engagement with immersive creative producers, this study began with a number of hypotheses.

– Creative immersive producers often gain initial traction through the work they showcase, but are struggling to scale up from there

– Creative immersive producers are finding it hard to convincingly explain to funding parties the value of the medium they work with, and this leads to challenging partnership and/or contract negotiations with sponsors and venues

– Creative immersive producers have an interest in creating their own intellectual property, but rarely manage to allocate time or resources to this activity, instead undertaking contract work to generate income

– Creative immersive producers are driven by creative aspirations, project by project, and revenue generation is secondary to the primary incentive of sustaining and growing their business

– Creative immersive producers are struggling to take learnings from one project to the next, and consequently are not able to improve their ways of working in a systematic and deliberate fashion

– Creative immersive producers seek funding and audience awareness in a business environment that reinforces project-based nature of their work, moving from one commission or grant to the next

This report will show that most of these hypotheses are valid. It determines the reasons why, and what types of intervention - in the form of practical tools for thought - can be introduced to address these issues.

RESEARCH QUESTIONS

Getting to the heart of each hypothesis requires asking the right questions. The questions asked in this research explore four topics, each targeting a specific aspect of operating a business in the immersive creative space.

1. **Revenue:** How do immersive producers approach generating revenue? What do their cost structures and revenue streams consist of? What are their growth strategies?

2. **Creative business models:** What types of creative goals are immersive producers aiming for, and how do they reconcile them with budgets and revenue expectations? How do their creative approaches influence their choice of business models and technology?

3. **Technology:** Which technologies are immersive producers harnessing for their creative aspirations? What does it take in terms of skill sets and resources to use these technologies?

4. **Distribution:** How are immersive productions made accessible to the public? What types of partnership, collaboration, and business development are needed to be able to take an immersive production to audiences?

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The findings under each topic inform the following goals:

– categorising immersive productions via a comprehensive sample

– analysing business models through case studies of immersive creative practice

– identifying what (if anything) distinguishes immersive business models from other sectors in the creative industry

– applying the latest, research-based business model innovation tools to the particular challenges faced by immersive producers in the creative space

The resulting report paints a holistic picture of the creative immersive landscape in 2020: the opportunities and the challenges that immersive producers within the creative industries face when they pursue projects from initial conception to launch. This involves many choices: how to leverage a specific, under-developed technology to fulfil creative aspirations; determining and acquiring the skill sets required to produce and run a project; how the project is to be funded; how it should be distributed; and identifying the revenue streams and expectations.

While many of these challenges are not unique to immersive, the (im)maturity and adoption levels of the associated set of technologies are. Immersive productions are made possible by their producers harnessing specific advanced technologies to fulfil their creative vision, such as AR and VR, which create a sense of presence and embodiment. This capability also makes enterprise applications for training and visualisation particularly powerful. It is the impact and engagement that immersive technologies deliver that make them something to be embraced, not just the fact that they are new and shiny. This report looks at how technology choices influence revenue generation and business models.

METHODOLOGY

To gain a longitudinal view into the challenges, the study followed four UK startups from March 2020 to September 2020. Three of the four were starting projects that targeted location-based distribution, ranging from department stores to galleries.

Documenting trajectories towards launch would enable identification of the most pressing challenges and solutions, and this timeframe was felt to be the most representative of an immersive company's ability to reach an inflection point where generating revenue from their creative work would become possible.

The conclusions of the research suggest conditions that both predate the pandemic and are results of it. The emergence of the pandemic forced both the startups and this research to pivot. While the companies had to re-evaluate their business models, the study sample was expanded, in case any or all of the original four (Limina Immersive, Megaverse, No Ghost, Playlines) could not pursue their original projects.

The application window for CreativeXR, the innovation programme run by Digital Catapult with Arts Council England, coincided with the study timeframe. The sample was therefore expanded to include the applications for the 2020-21 cohort, and analysis of the funded projects from the first two years of the programme. The aim was to tease out trends and signals indicating how companies applying to take part were presenting their business logic and objectives alongside their creative concepts.

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The research was conducted with the case study companies according to the original plan. After initial individual interviews with company representatives around company business goals and the current projects, a webinar was held for joint discussion in April 2020. To observe the technological challenges, workshops for the Audience of the Future Demonstrators were held in collaboration with a game engine software provider. The output was a better understanding of the most pressing issues that characterise software development for large-scale augmented reality projects in 2020.

In June 2020, a second round of interviews was held, to see how the startup projects had progressed. This was followed by a round-table discussion in September 2020 with the case study companies, representatives from the Audience of the Future Demonstrators and immersive entrepreneurs with experience in the topic. Throughout the study period, research included attending talks, festivals, and webinars related to immersive and the creative industries.

REPORT STRUCTURE

The diagram on the next page illustrates the research process and how it is documented in this report, which includes the broader questions of technology, distribution, and business models as well as individual examples and company stories.

The next chapter summarises the case study company stories of 2020, introduces trends evident in the CreativeXR cohorts, and discusses what the creative immersive landscape looks like in light of these findings. It then takes a deeper dive into the reasons behind the conclusions and starts building the ground for practical tools with which to tackle the challenges.

Introduction

THEMES			
REVENUE GENERATION	PRODUCTION TECHNOLOGIES AND EXPERIENCE DESIGN	CREATIVE BUSINESS MODELS	DISTRIBUTION METHODS AND CHANNELS

LONGITUDINAL CASE STUDIES ACROSS SIX MONTHS (BUSINESS MODEL INNOVATION IN PRACTICE)			
Limina Immersive	Megaverse	No Ghost	Playlines

ANALYSIS (DESK RESEARCH AND ANALYSIS OF THE DATA)		
Academic research on creative business models	Demonstrator technology workshops	CreativeXR projects across three cohorts

SYNTHESIS
"Immersive production matrix"

CASE STUDY (BUSINESS MODEL INNOVATION IN PRACTICE)
Demonstrator case study: Dinosaurs and Robots

PRACTICAL OUTPUTS	
"Immersive production matrix"	
Business model innovation tools	Future scenarios creative immersive industries

Creative meets immersive: the state of the market, trends and company stories

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Creative meets immersive: the state of the market, trends and company stories

"As new experiences are formed, creators are encouraged to form their business models not just around covering their own costs, but also juggling audience sizes and expectations properly.

"Only through careful consideration of these factors will mass audience adoption occur for even the most unique immersive experiences."[6]

2020 Immersive Entertainment
Industry Annual Report

This quotation echoes the themes that previous research, 'The Immersive Audience Journey', set in motion, and that this study builds on.

"Many newcomers to the immersive entertainment industry seek creative success first and foremost, as the industry is drawing artists of all kinds. Yet as these artists find the value in transforming their art into a living, there still exist widespread struggles across the newer segments of the industry to establish scalable, sustainable business models."[7]

The necessity of innovating and co-operating in order to cope with the coronavirus pandemic has characterised the year 2020. For location-based entertainment (LBE) venues and festivals, the situation has been especially challenging, exacerbated by the lack of established distribution channels for immersive content beyond the games domain.[8]

Sarah Wolozin from the MIT Open Documentary Lab interviewed documentarists, artists, and curators in the immersive space on their ways of sustaining their business and adapting to pandemic restrictions. She cites, for example, VR documentarists on how securing funds to plan a distribution strategy is key for sustainability. Often, immersive studios need to handle distribution and exhibition themselves, whereas in more established cultural sectors producers can rely on existing infrastructure. Producers in the UK, Europe and Canada have been able to bid for government funding for these activities and tag along with research projects to fund technology research and development, for example, whereas in the US this has not generally been the case. Between funding cycles, an immersive studio's survival has generally depended on contract work or licensing technology solutions developed in previous projects.

Creative meets immersive: the state of the market, trends and company stories

Wolozin concludes with five sustainability factors: investment from government and foundations, generating content sales through technology platforms, a network of exhibition and distribution spaces, support for artists, and the immersive creator's success in responding to COVID -19[9]. This international research gives this UK study international context. If, for instance, public funding opportunities in the UK have been more plentiful than those overseas, does this reflect in the progress that creative immersive companies have been able to make in this country?

FROM THE FRONTLINE: COMPANY AND DEMONSTRATOR STORIES

This section introduces the case study companies that took part in the research and summarises how they were able to pursue their business, despite the pandemic in 2020. The Visitor Experience Demonstrator from the Audience of the Future programme is used as an example of a large-scale project that faced the sudden need to change direction, pivoting from location-based experiences to mobile and digital distribution.

These stories introduce the challenges and opportunities present in the UK market over recent years, and provide context further on in this report when addressing the question of what is particular to business models in the creative immersive space.

Creative meets immersive: the state of the market, trends and company stories

LIMINA IMMERSIVE

Limina Immersive was founded by BAFTA-winning Catherine Allen in 2016, with the goal of bringing creative VR to a broader audience demographic. Between 2016 and 2020, the Limina team delivered over 160 different VR experiences to more than 15,000 people in their proprietary VR theatre screening format.

While mainly taking their VR theatres to UK locations, the team also toured internationally, with destinations including Paris, Madrid, Adelaide, Melbourne and Dublin. Venues ranged from theatres to high-end department stores, and included its own six-month venue in Bristol. The goal for the live screening format was to find a commercially viable formula for mainstream VR adoption. This involved synchronised small group viewings with significant customer focus and attention to duty of care. VR became part of a night out by bringing a themed and mood-boosting immersive experience to an existing space that audiences were already familiar with.

Alongside the screenings, Limina conducts audience research to understand what it is that audience members want from VR content, and how they feel about the medium and the way it is screened. Limina has run focus groups with hundreds of audience members and surveyed thousands of individuals. Clients have included The British Council, the BBC, The Academy of Motion Picture Arts and Sciences, and various local government departments.

When COVID-19 hit in 2020, Limina Immersive had just returned from touring Australia and was in the process of running tailored VR screenings in collaboration with Harvey Nichols department stores. Limina's activity paused in April, but the company resurfaced with funding and a pivoted business model in June. The focus is still bringing creative emerging technology to non-early adopters, but without relying on physical public-facing venues. Limina now uses its extensive audience insight to provide both consultancy and production. One key piece of IP in development is a wellbeing experience, developed in collaboration with NHS Arden and GEM.

MEGAVERSE

Megaverse has worked at the intersection of arts, gaming, and film since 2018. Its focus is on user agency, interactivity and audience participation. Megaverse used initial funding from Arts Council England for R&D on how to combine live actors, volumetric capture technology, real-time game engines and VR.

After working on projects with the National Youth Theatre and Sheffield Children's Hospital, Megaverse started developing Rory Mullarkey's play 'Flood' into an immersive version. Flood was Megaverse's flagship project during 2019, aiming to set the company on a trajectory towards establishing itself in the immersive theatre space with a sustainable, location-based business model.

In 2020, after completing a Flood prototype with the CreativeXR funding, Megaverse gained initial traction and multiple opportunities to showcase the work internationally (from Adelaide Fringe to SXSW and CannesXR). Designed as a location-based, multi-user VR experience, Flood was put on hold as the pandemic emerged, to await funding decisions. Megaverse had to shift focus to other projects, both immersive and mobile. Flood remains the main ambition, and the Megaverse team has started exploring the potential for a digitally distributed version. Meanwhile, it has pursued other, digitally distributed projects in VR, smartphone apps and immersive production tools.

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NO GHOST

No Ghost is an immersive studio founded by professionals from the visual effects industry. Their aim was to bring to VR the visual and storytelling quality that is associated with feature animation, and to break out of the constraints of visual effects work by embracing interactivity.

In 2019, the studio enjoyed an increase in the number of VR and AR projects commissioned. This gave No Ghost confidence in the growth of the VR consumer market, and in combination with creating its own IP as a major business objective, 'Madrid Noir' emerged as the flagship project for the company. With traction from a self-funded prologue of the Madrid Noir experience, No Ghost secured production funding from CreativeXR, Oculus and an Epic Games' Megagrant.

No Ghost has since entered into co-production with film distribution company Atlas V. The team was already working in distributed fashion when the pandemic hit, and therefore did not suffer major setbacks. Instead, it channelled funding from planned promotional activities (such as festival visits) into recruitment. Madrid Noir is on track for release in the Oculus store in February 2021.

PLAYLINES

Playlines is a London-based immersive AR studio and consultancy. Playlines combines cutting-edge AR technology with real-world live performances and immersive storytelling insight. Playlines' aim is to help shape the future of immersive AR by creating ambient layers of narrative, culture and adventure in ordinary places.

In 2019, Playlines developed 'CONSEQUENCES', an immersive site-specific AR rap experience, with lyrics and performance by UK rapper Harry Shotta, and with groundbreaking spatial audio-based immersive AR powered by Bose. 'CONSEQUENCES' was a finalist for the FoST prize and part of the Official Selection, Raindance 2019.

In early 2020, Playlines secured a residency at the National Gallery X to create a companion AR app that would enhance gallery visits and explore non-zero-sum information design in AR or 'multi-channel curation'. Due to the pandemic, the project pivoted towards an innovative AR user interface through which users can superimpose National Gallery masterpieces onto the walls of their own home. The beta version of the app was nearing completion in September 2020, and discussions about future development stages were planned.

Meanwhile, Playlines was commissioned to power an AR arts festival in Central London in October. Playlines' longer-term goal of creating more original-IP site-specific projects has been put on hold during the COVID-19 pandemic. Playlines has always worked in a distributed and versatile fashion and that has enabled the company to pivot and continue operations, despite the lack of audience for location-based projects in 2020.

BUSINESS MODEL INNOVATION IN A LARGE IMMERSIVE PROJECT: DINOSAURS AND ROBOTS

The Visitor Experience Demonstrator in the Audience of the Future programme - a consortium consisting of the Natural History Museum, the Science Museum Group, University of Exeter, Almeida Theatre, and Factory 42 - set out to create a number of immersive experiences around dinosaurs and robots, themes close to the participating museums. The location-based experiences were planned for the museums themselves, as well as pop-up units for shopping centres and similar venues. The experiences were initially designed to take place in custom-built physical installations, using the Magic Leap mixed reality headset for playful multi-user experiences. The intent was to subsequently commercialise the experiences as ticketed offerings.

Before the UK coronavirus lockdown in March 2020, the concept was tested at the Natural History Museum with partners and stakeholders, and a public test run of 'Dimension X: Dinosaurs & Robots Experience' took place at the intu Metrocentre shopping centre in Gateshead. Test results were positive, but the project had to be put on hold shortly afterwards due to COVID-19 restrictions.

As it became evident that the pandemic's impact would be long-lasting, the Demonstrator pivoted to AR, with the aim of leveraging the themes for educational, family-friendly smartphone applications. The change in platform introduced not only completely different technical implementation and user experience design requirements but also fundamental changes to the business model. It necessitated a change from location-based visitor experiences at world-renowned institutions to at-home mobile entertainment, facing competition with thousands of similar applications in the edutainment space.

The consortium's production studio, Factory 42, led the establishment of a new division, F42 Kids, to operate the launch and future development of the applications. At the time of writing in October 2020, 'My Dino Mission' AR and 'My Robot Mission' AR had both recently launched at the Apple and Google app stores. From technical and creative aspects, the pivot was a substantial and costly effort in a short amount of time (April to September) but its ultimate success can only be evaluated later, once there is data about how the apps have reached the target audience and how users have engaged with the content.

Creative meets immersive: the state of the market, trends and company stories

2020: THE YEAR OF PIVOTS TO DIGITAL

These stories are not exhaustive but they are representative: most immersive companies operating in the location-based context have had to pivot to online and/or change their offering. Among these has been Darkfield, whose audio-based experiences in physical containers have transformed into 'Darkfield Radio' on a mobile app. Similar pivots have become commonplace: the Venice Biennale showcased a host of immersive experiences in their virtual-only incarnations during September 2020. The British Film Institute's London Film Festival had an LFF Expanded section dedicated to immersive in October 2020, and The Raindance Film Festival's selection did the same in November. The 'Beyond' conference will include an Immersive Futures Lab, and CreativeXR's third year output will be showcased on a virtual platform in December 2020.

It is clear that the creative immersive landscape has changed in 2020, but to understand the nature of the change requires an understanding of its state in preceding years, which is provided in the next section.

The creative immersive landscape

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The creative immersive landscape

Immersive productions emerge from combinations of creative aspirations, technology choices and distribution opportunities.

Creative and practical aspects of these combinations influence project scope and budget requirements, as well as shaping target audiences and defining break-even points and revenue expectations - all of which coalesce into how a creative immersive company's business model is configured.

This section unpicks the interdependencies between these elements to create a discussion tool and an analysis framework, while identifying trends in creative immersive over recent years.

THE MATRIX OF TECHNOLOGIES, DISTRIBUTION CHANNELS AND USER EXPERIENCES

By engaging with the case study companies, Audience of the Future Demonstrators and CreativeXR productions, this study has resulted in a matrix that enables anyone to look closely at an immersive production and categorise the variable choices in technologies, distribution channels and nature of the audience experience. This provides insight into which factors are trending and which are subsiding.

Creative projects have a tendency to change direction in the course of development. Prototyping and audience testing can either validate or negate early assumptions and intuitions about creative vision or proposed technological and distribution solutions. Often, the resulting change in production trajectory is left undocumented, which can inhibit future development of the field with learnings and experiences remaining only as tacit knowledge among individual teams.

The challenge is at what point of development the analysis is made. For example, if carried out on the basis of funding applications, analysis shows the creative aspirations of producers in the field, but the project's output is not fully validated - at this stage there are too many unknowns for business model considerations. If carried out based on the production live phase resulting from several iterations, the analysis paints a picture of choices that are feasible for facilitating real-world delivery.

Analysing a broader sample over time should yield insight into what types of productions have a tendency to go past the prototype phase. Because ambitious immersive productions can be paused for a host of reasons, casting a longitudinal view into the development of the field is important, and the analysis cannot claim to be conclusive. The matrix is therefore a starting point for evaluating choices, so that the more time-consuming success factors and delays in impact can be identified.

The creative immersive landscape

IMMERSIVE PRODUCTION MATRIX

DISTRIBUTION	TECHNOLOGY	USER EXPERIENCE
PHYSICAL GOODS	PHYSICAL SET/STAGE	SIGHT
DESKTOP APPLICATION	360 VIDEO	SOUND
BROWSER	SPATIAL AUDIO	TOUCH
SMARTPHONE	AUGMENTED REALITY	VESTIBULAR
AUDIO HEADSET	VIRTUAL REALITY	PROPRIOCEPTION
HEAD-MOUNTED DISPLAY	MIXED REALITY	TASTE
LBE: TRAVELLING SETUP	HAPTIC TECHNOLOGY	SMELL
LBE: GALLERY/THEATRE	PROJECTION TECHNOLOGY	
LBE: DEDICATED VENUE	5G	
LBE: SHOPPING CENTRE	AI	
LBE: OUTDOORS	MOTION CAPTURE	
	OBJECT TRACKING	
	VOLUMETRIC CAPTURE	
	OTHER PROPRIETARY TECHNOLOGY	

The matrix can be used to look at any immersive production and break down its elements according to the categories in each of the three dimensions. If and when the production under analysis employs a combination of solutions in each dimension, they should be evaluated in terms of primary, secondary, and tertiary solutions (if applicable). This is the methodology we employed with the CreativeXR projects.

The creative immersive landscape

TRENDS IN THREE YEARS OF CREATIVE PROTOTYPES

Employing the matrix, the CreativeXR-funded projects were analysed across three dimensions: technology, distribution, and user experience.

Any creative immersive production can be mapped onto the matrix based on choices, and combinations of them, along the three dimensions. The more space a production occupies across the three-dimensional space, the more complex it is as a creative, technical, and economical undertaking. For example, mapping the world's most ambitious immersive production in location-based entertainment (LBE), Disney's 'Star Wars: The Galaxy's Edge' theme park in Florida, illustrates the complexity of executing such a project - not just technically, but from an operational and business model point of view, including the provision of services such as hospitality, security, and technology by its staff.

Looking at smaller productions using the matrix will bring up discussion points about required skill sets, partnerships, technology development, distribution formats, the limits of immersive user experiences, the multisensory spaces required to fulfil a creative vision, and more.

THE TECHNOLOGY DIMENSION: THE TREND TO INTERACTIVE, EMBODIED EXPERIENCES

As the chart on page 23 shows, the primary technology choice for creative immersive productions has been VR, and the spatial audio it enables, in combination with a physical set. Projects employing either smartphone AR or 360° video have been the second most common, followed by technologies such as object tracking, motion and volumetric capture, and projection displays. Projects often employed a combination of technologies to deliver the desired experience.

The movement from linear and largely passive (three degrees of freedom, '3DoF') experiences to more embodied ones ('6DoF') did not radically increase over three years, which aligns with how consumer technology (especially VR headsets) has developed. The more embodied the experience, the more powerfully it communicates the unique capabilities of the technology for experience design.

Many of the 2020 projects that still choose technologies such as 360° video do so not only because of broader distribution and accessibility considerations, but also because of the creator's background. Producers and companies with backgrounds in film narrative tend to gravitate towards less interactive projects and associated technologies, while makers coming from games or installation art backgrounds are more likely to strive towards fully interactive, software development-driven projects.

The promise of 5G as an enabling technology for more seamless delivery of immersive content and applications only entered the picture in the 2020 cohort. Increasingly, there is also evidence of producers trying to harness the power of AI for their projects.

The creative immersive landscape

	YEAR 1	YEAR 2	YEAR 3

PHYSICAL SET

360 VIDEO

SPATIAL AUDIO

AUGMENTED REALITY

VIRTUAL REALITY

MIXED REALITY

HAPTIC TECHNOLOGY

PROJECTION TECHNOLOGY

5G

AI

OTHER PROPRIETARY TECHNOLOGY

MOTION CAPTURE

OBJECT TRACKING

VOLUMETRIC CAPTURE

0   10   20   30   40

NUMBER OF PROJECTS EMPLOYING THE TECHNOLOGY
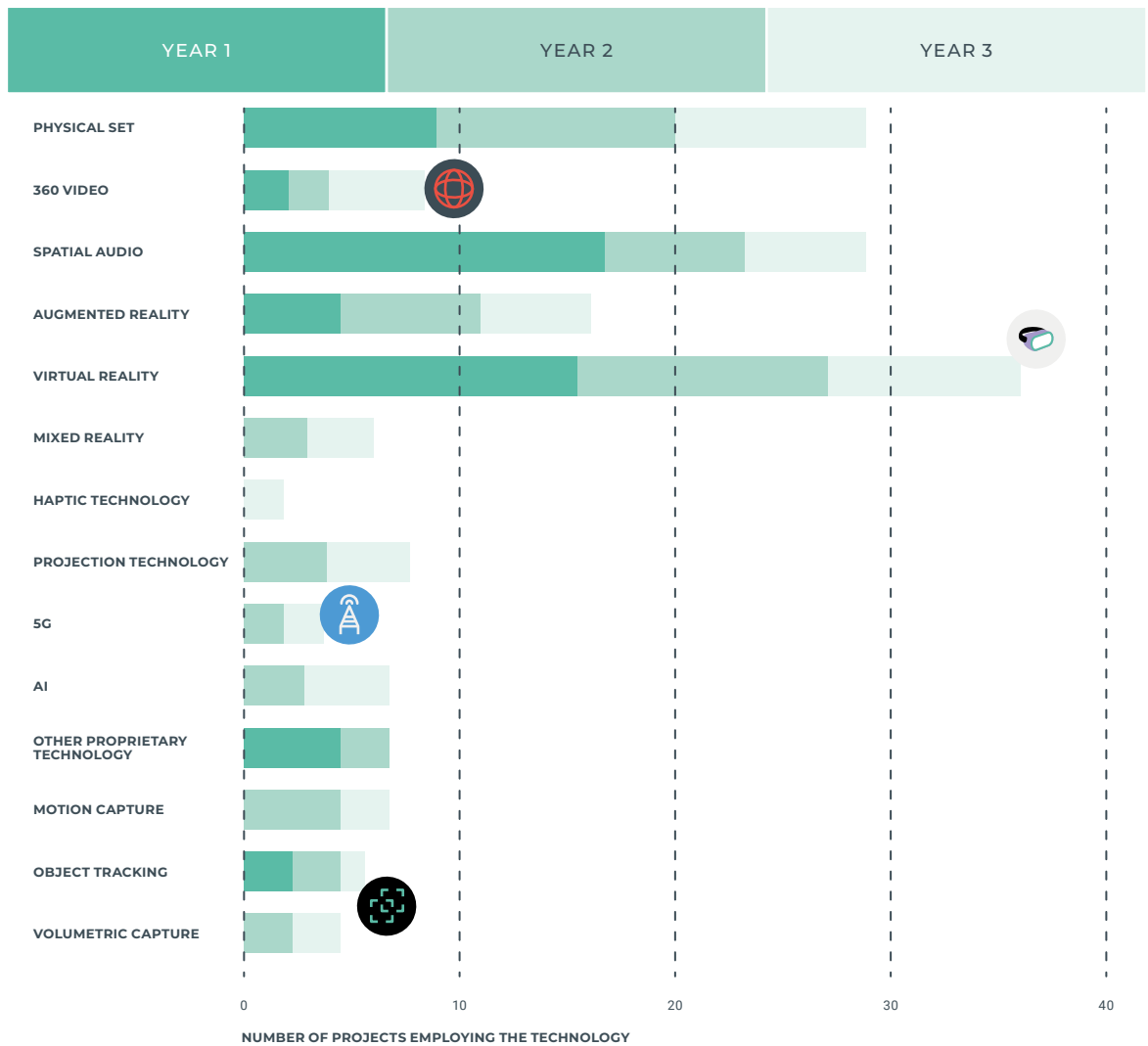
Three years of CreativeXR from the perspective of technology choices. Most projects employed a combination of technologies.

The creative immersive landscape

	YEAR 1	YEAR 2	YEAR 3

Chart categories (top to bottom):
- LBE: OUTDOORS
- LBE: GALLERY/THEATRE
- LBE: CUSTOMISED VENUE
- LBE: SHOPPING CENTRE
- LBE: TRAVELLING SETUP
- PHYSICAL GOODS
- HEAD-MOUNTED DISPLAY
- AUDIO HEADSET
- SMARTPHONE
- BROWSER
- DESKTOP APPLICATION

X-axis: 0, 10, 20, 30, 40, 50

NUMBER OF PROJECTS EMPLOYING THE DISTRIBUTION SOLUTION
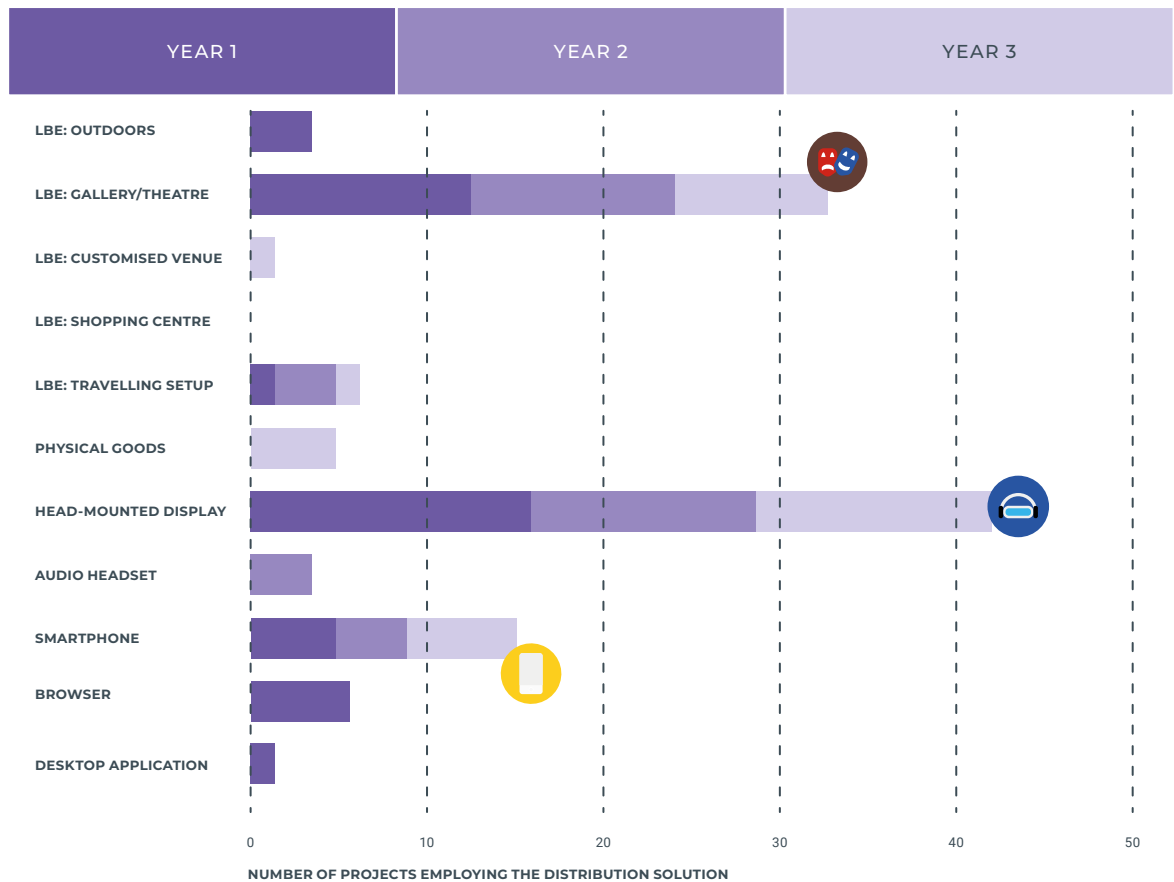
The combination of head-mounted displays in a physical venue was the most common distribution choice.

THE DISTRIBUTION DIMENSION: THE NEW TREND TOWARDS AT-HOME DELIVERY

Before 2020, delivering immersive content via a head-mounted display in a physical location (as LBE, location-based entertainment), typically a gallery or exhibition space, was the dominant choice. Various LBE projects were building towards a mobile setup that enabled touring.

On the heels of Pokemon Go's success, the first-year cohort (2017-18) included mobile AR location-based projects, but since then AR projects have focused on at-home delivery. Interestingly, the third-year cohort - which started during the pandemic - had projects that included physical items (such as books) as a delivery mechanism or companion to a digital application, so that the experience could be enjoyed at home.

The creative immersive landscape

Almost 30% of the funded projects were targeting location-based delivery. Therefore based on this sample and the company stories, it can be argued that approximately a third of immersive creative productions set for launch in 2020 are likely to have suffered from restrictions to location based-distribution because of COVID-19, and these are likely to remain a problem through 2021 at least.

THE USER EXPERIENCE DIMENSION: THE TREND TOWARDS MULTISENSORY

'Immersive' is an umbrella term for fabricated environments that feel real and responsive to a participant's actions, either through technology or the orchestration of live performers. A producer's creative vision might dictate the need for a particular technology or distribution choice, especially when considering it from an audience point of view (the user experience). Content can influence the form, or vice versa.

USER EXPERIENCE			
SIGHT	SOUND	TOUCH	VESTIBULAR
PROPRIOCEPTION	TASTE	SMELL	
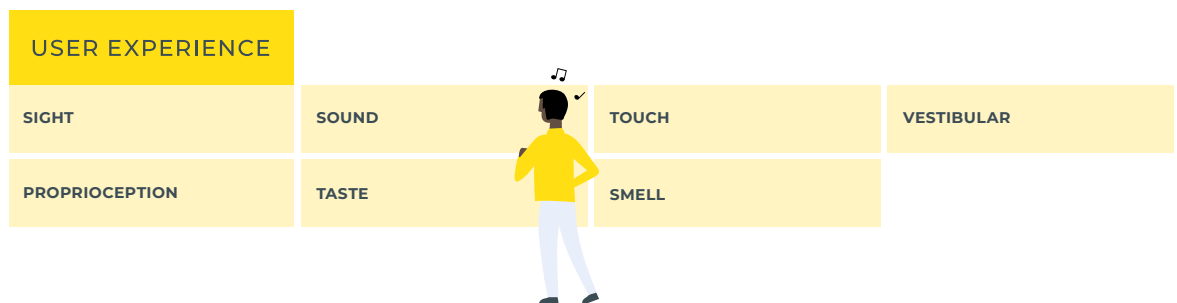
User experiences with immersive technologies are multisensory.

The creative immersive landscape

The matrix on the previous page helps to show how creative aspirations inform the choice of technologies through the resulting user experience and its components. While immersive experiences are by definition multisensory, looking at the nature of the experience the projects were striving for, analysis shows that some sensory experiences appear to be prioritised over others.

Due to the prevalence of VR as a choice of end-user device, sight and sound dominate the user experience characteristics. Most projects addressed vestibular senses (spatial and orientation) through fairly limited head movements, gestures and the virtual touch enabled by standard technologies, such as VR motion controllers.

Some projects aimed at engaging audiences with more physically active roles, addressing the proprioceptive (kinetic) senses (body position and movement) as well. There are a handful of outlying audio-only-based AR experiences, and no projects in the sample attempted to create olfactory or gustatory experiences.

POST-PANDEMIC CONSUMPTION AS AN EXTERNAL TREND

Trends are not only influenced by those involved in production and reception, but also by external events. The pandemic is a major external event that has caused the shift to digital, at-home experiences - making this a trend born of necessity. This has consequences for the viability for distribution channels and the characteristics of user experience. Development and production of at-home multisensory experiences will be hindered by the fact that many 'fringe' immersive technologies - such as scents - do not have any at-home distribution technologies.

Initial findings: revenue, business models, technology, and distribution

Contents

Initial findings: revenue, business models, technology, and distribution

This section summarises observations from the research findings on the four themes: revenue, business models, technology, and distribution.

REVENUE: IN SEARCH OF THE ELUSIVE IP

Small immersive producers operate on the premise that initial grant or client-funded projects will eventually generate enough profit to invest into building their own IP, whether it is creative (a product or service) or a distribution model. This ambition is motivated by creative aspirations first, profit second. Revenue-driven thinking (making a profit from day one of launch) is not a widely adopted strategy or mindset.

"Not every creator in the immersive entertainment industry is up for the challenge of converting artistic ideals into a sound business model."[10]

Brigante and Elger 2020

In terms of audience insights or market research, immersive studios rely on assumptions rather than actual data. This can lead to ineffective marketing, unrealistic expectations, and a superficial understanding of who the paying audience is and what motivates them to pay.

The 'Immersive Audience Journey' report addresses this, and research within the Audience of the Future Demonstrator consortium is producing audience segmentation and methods that address specific requirements for incorporating audience insight into the development of immersive productions.

Initial findings: revenue, business models, technology, and distribution

BUSINESS MODELS: IN PERPETUAL FLUX

Immersive innovators are driven by a belief that the technologies they are focusing on are transformational. They believe that immersive technologies open up opportunities to create unique experiences and/or ways of creating content or services. Therefore their startup business models are in constant flux, because the technologies that enable this new creative space are not mature.

As content producers or distributors, innovators need to constantly explore new solutions to their creative problems, abandoning, adapting and compromising as they go. Practical necessities, such as engaging in co-productions, while potentially deal-breakers for success, can also produce a lot of communication overhead, and may surface differences in culture, priorities and ways of working between the collaborating teams.

TECHNOLOGIES: A MOVING TARGET

Creative immersive productions employ real-time technologies, often pushing the boundaries to achieve their creative goals. This can lead to a skills gap (documented in recent reports[11]) that makes it difficult to establish stable production teams that learn from one project and technology to the next. The learning curve for new technologies also makes it difficult to estimate budgets and schedules, which can lead to ad hoc technology choices that will not carry over to future productions, requiring the learning cycle to begin anew.

DISTRIBUTION: LACK OF SUPPORT SYSTEMS

Creative immersive teams' skill sets do not necessarily include thinking about distribution opportunities in a revenue-driven manner, or carrying out business development to solve distribution issues. Relationship building with platform or venue owners is time-consuming but would provide access to key advantages for revenue generation, such as ticketing and payment systems.

There is still a lack of understanding of immersive experiences that can make it difficult to convince potential partners of the unique aspects that immersive technologies can enable. This leads to innovators exhibiting, where possible, without a strategic approach for seeking the distribution channels that offer the best possibilities for generating revenue or visibility, short and long-term. Companies with projects that originally aimed for location-based distribution do not necessarily have the resources or contacts to enable them to pivot to digital platforms.

Initial findings: revenue, business models, technology, and distribution

TOWARDS INTERDEPENDENCIES BETWEEN BUSINESS MODELS, TECHNOLOGY, AND SUCCESS

Going forward, the research goal is to develop the matrix to facilitate more nuanced thinking around the correlation between choices. For example, it is possible to look at the correlations between a project's genre (the dominant characteristics of subject matter, style, and interaction design) and the technologies and distribution channels that producers have chosen to deliver it. This approach could identify which formats are more successful than others in reaching the market and engaging audiences. The difficulty in communicating the experience and benefits of immersive formats to both commissioners and audiences is commonly mentioned as hindering immersive experience establishment and growth.[12]

In a discussion on how innovation links to performance through the business model, scholars Baden-Fuller and Haefliger state that "an important research agenda for technology strategy scholars is to unpick the interdependencies between business model choice, technology development, and success."[13]

Carrying out such analysis is especially difficult for practitioners who aspire to tame emerging technologies and workflows to serve their creative visions, while translating skills from one domain (such as screen-based linear storytelling) to another (3D, real-time interactive immersive environments). This research will begin unpicking the various interdependencies so that producers can take the results and adapt them to their own creative thinking and business objectives.

In addition, it should not be assumed that producers who have been building their immersive profile around location-based experiences and their own creative traditions will be content to translate their creative visions into the confines of at-home opportunities. Even if they are, the cost of conversion from one platform and technology to another is not insignificant, and is only likely to be covered if there is budget available, or existing revenue to reinvest in growth through another distribution opportunity. This is echoed in the Immersive Entertainment Industry Report from the US:

"Accessing the mass audience and educating them about immersive work is vital for industry growth. New markets are slowly being created, but they don't always align with the products creators wish to develop. One way companies are finding success is by translating innovative immersive work into existing, known, more traditional business models."[14]

While success criteria do not always need to be directly tied to revenue, they are ultimately what would establish the creative immersive landscape as a viable one for both present and future creators to pursue. It is therefore important to use business models as a tool to start unpicking the interdependencies that can potentially lead to sustainable revenue and growth.

Initial findings: revenue, business models, technology, and distribution

This report does not claim to propose one-size-fits-all recipes for success, yet the approach it follows will help companies in the creative immersive sector to refine their ways of operating. It is hoped that immersive creators and entrepreneurs will be inspired to rethink their business models and become more aware of how the various choices at the intersections of art, culture, and technology will influence their ability to create sustainable blueprints for operation.

The research sample comprises mainly explorative R&D projects and prototypes. Typically, most such projects will not go forward to full production. However, this is a fair reflection of the current immersive landscape, and analysis reveals that technological execution in the creative immersive space is not the main challenge. It is the commercialisation landscape that requires significant effort and versatile skill sets - from contract negotiation to lead generation and business development - that small creative immersive production teams tend to lack.[15]

Business models and creative industries

Contents

Business models and creative industries

The company stories and trends documented in this study testify to the need for constant exploration of how to run a sustainable business in the immersive creative space.

Solutions to revenue, resilience and sustainability challenges should be sought through business model innovation.

This section briefly looks at how business models have been defined and categorised in literature, then moves on to tools that have been developed for startups, scale-ups and small-to-medium sized businesses, to support and stimulate thinking about innovating their business models in a structured way. 'Business model' is used as "a blueprint for the way a business creates and captures value from new services or products"[16] and as a set of related elements that enable the expression of the business logic of a company.[17]

The Business Model Canvas approach introduced by Alex Osterwalder and Yves Pigneur brought the term into broader consciousness in the early 2010s, and its use as a buzzword has been criticised by some. However, a more positive way to look at the concept is to shift attention to how business models get executed in practice. Business models become narratives about how entrepreneurs explore markets by gradually constructing a network of activities and partnerships.[18] The company stories in this report are snapshots of such narratives.

Business models and creative industries

CREATIVE BUSINESS MODEL CATEGORIES

Business models have been categorised in four ways: product, solution, matchmaking, and multi-sided business models.[19] The company stories have shown that product and solution models are common in the immersive space: the immersive producer's value proposition is to tailor solutions to each customer. Alternatively, they sell products or services, where the value proposition becomes transactional: what is being provided to each customer is standardised as a commodity rather than presented as a tailored solution.

While most business models centre around products and services, in the creative industries the solution model has also been commonplace, as commissioned work falls into this category.[20] Matchmaking tends to apply to retail operations, and therefore is not typically prominent in the creative space.

Multi-sided business models relate to platforms that facilitate both business-to-consumer and business-to-business activities, such as attracting audiences (for example, newspaper readers) while selling services (such as newspaper advertising) to other businesses. The value proposition is transactional, based on facilitating exchange. For a multi-sided model to emerge in the creative immersive space, it would require platforms that showcase content and charge for consuming it, and/or provide advertising or sponsorship opportunities.[21]

According to Nicola Searle's study, business models in the creative industries have been relatively stable, but changes in pricing mechanisms and value propositions have seen a shift towards subscription and freemium models.[22]

In this report, business models describe the ways that companies or networks of organisations aim to generate revenue and sustainability. In the context of this research, the revenue comes through the value that companies create for audiences through the immersive productions they deliver.

Business model scholars Baden-Fuller and Haefliger note that business models are also mental models that business actors use to prioritise their actions, and consequently such 'cognitive business models' influence choices, such as technologies. Choices in business models might also determine how profitable a chosen technology becomes.[23]

An example of this dynamic would be if an immersive company decides to make their proprietary software, code or hardware that is part of their productions, open source, and then begins to facilitate community formation around developing the software further, thus letting the community influence the technology's future direction. Choosing to engage with online developer communities and inviting them into the development process would have become a business model choice.

Such two-way connections between technology and business models remain under-studied[24] and their complexity is especially challenging in innovative, emerging technology areas, such as those that creative immersive producers embrace.

Business models and creative industries

WHAT IS PARTICULAR TO CREATIVE IMMERSIVE BUSINESS MODELS?

Creative immersive companies share many traits with others in the creative industry, especially those operating in audio-visual media. However, they are also characterised by a heightened focus on emerging, and therefore possibly risky, technologies; related proprietary research; and development and/or orchestrating complex experiences in physical locations. They operate fundamentally at the intersection of media arts and technology, and audiences perceive their productions as different to more traditional outputs from other creative industries.[25]

Consequently, communicating the distinct nature of immersive experiences is challenging, both to stakeholders and audiences.

In an effort to produce meaningful observations regarding their business models, immersive creative companies need to identify the variables that distinguish their business activities from the rest of the creative industry.

IMMERSIVE IN RELATION TO THE CREATIVE INDUSTRIES		
PARTICULAR TO IMMERSIVE PRODUCTIONS		
Iterative process	3D asset creation	Software development for immersive technology
Virtual production methodologies	Real-time production technologies	Proprietary technology development
Location-based set building around immersive technology set pieces	Fringe technology expertise	Orchestration of experience and production
Duty of care of audience members	Design for presence and multiple senses	'Content diagramming' instead of scriptwriting
	Communicating immersive/multisensory technology value-add	

Business models and creative industries

The following illustrations summarise some of these differences. As an example of how this plays out in practice, these illustrations show Megaverse's Flood production. The left-hand image shows how the production brings live, motion-captured actors into a shared virtual space with audience members, who participate using VR headsets.

On the right, the company has defined its trajectory for scaling the production up to full launch. From the business model point of view, the plan communicates aspects of the cost structure (the actors) and a revenue stream (ticketing) based on a location-based throughput of around 10-12 audience members per hour. While this model is similar to those of theatre and film venues, the experience itself is unique to the immersive domain. The challenges of creative immersive business models lie in combining these two aspects, and in moving from perpetual research and development to exploiting proven commercial potential.

The four high-level business model categories (product, solution, matchmaking, and multi-sided) are not nuanced enough to capture what is happening in the creative immersive space. On the other hand, studies in business model patterns (such as by Weking et al.[26]) go to the other extreme in their granularity, listing multiple micro-level business solutions, out of which only a limited number are relevant to this focus. An approach that enables discussion of the particularity of creative immersive companies challenges is required.
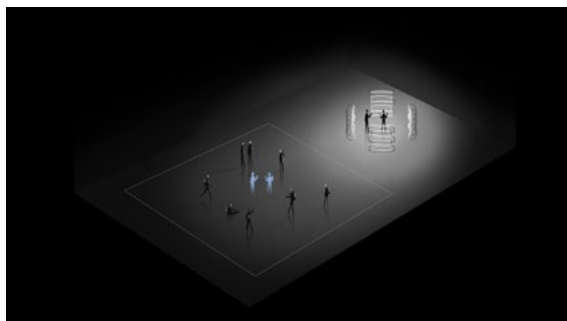
Flood production illustrations by courtesy of Megaverse.

Business models and creative industries

WHO?

Strategic partnership, for example who plays fundamental role in developing form of distinction

FOR WHOM?

Customer interface, for example to whom is the form of distinction being delivered?

WHAT

Value proposition, for example what is the company's form of distinction?

HOW?

Value configuration, for example how does the company build up the form of distinction?

HOW MUCH?

Profit model, for example in what way is the company generating profit from the form of distinction?

HOW TO ANALYSE CREATIVE IMMERSIVE BUSINESS MODELS

Scholars Taran et al[27] provide an ontology of business model configurations that operates at a useful level of abstraction, given the topic. The business model configuration model can be adapted for analysing creative immersive companies, as shown in the above summary illustration.

– What the company does that differentiates them - that is, their value proposition

– To whom they offer the unique differentiation

– How they establish the differentiation in practice

– Who they work with to support the differentiation

– How they are generating profits from the differentiation

Business models and creative industries

Aligning the various aspects that make up a business model for optimal output can be challenging. In studying business models and technological innovation, Baden-Fuller and Haefliger write:

"Different stakeholders perceive different domains as more central or dominant. Technology developers understand the agenda and possibilities for a technology to be used but may miss the implications for monetisation or market demand. On the other hand, marketing experts may hold deep insights into customer behaviour but may not understand what a given technology could be expected to deliver."[28]

This tension is evident in the creative immersive space, and consequently producers with creative and technology backgrounds need to seek partnerships to leverage insights and skill sets that they don't themselves possess. For example, contract expertise is not typically part of an immersive producer's skill set.

The next section looks at how creative immersive companies generally fit the business model configuration model, using the company stories as examples.

Creative immersive companies in context: shifts in business models

Creative immersive companies in context: shifts in business models

Based on this research, the following diagram expands the business model configuration approach in the context of the creative immersive space.

For example:

– their value proposition emerges from producing original immersive experiences using proprietary technology or application of a proven immersive technology. They might specialise in storytelling, performance or visitor experiences and target a specific audience

– they target the at-home audience, audiences visiting the locations where their productions run, or possibly a hybrid of both

– they build distinction by striving for outstanding creative and technological execution, or by developing unique proprietary production technology; they also possibly aim to emerge as thought leaders by showcasing their work or collaborating in research projects and/or disseminating research

– they collaborate with platform owners (such as VR app stores or smartphone app stores) and distribution companies, and seek investment and funding based on their unique value proposition, supported by these collaborations

– they aim at break-even points with commissioned projects, or strive to generate revenue from ticket or app sales or from licensing content that they own or co-own

This diagram shows the opportunity space available for creative immersive producers. It also highlights the particularities of their efforts in comparison to the wider creative industry. Individual companies in the space have obvious similarities, but also meaningful differences in how they position their business within it. These can be identified with this model, and changes in business model can be identified through changes in configuration.

The following diagrams show how the business objectives and projects of the case study companies are configured into this model.

Creative immersive companies in context: shifts in business models

WHAT

Value proposition, for example what is the company's form of distinction?

Unique immersive experience	Specific target audience	Unique application of technology
Content distribution	Storytelling expertise in a new medium	Own intellectual property/R&D
	Unique proprietary technology	

WHO?

Strategic partnership, for example who plays fundamental role in developing form of distinction

- Content owners
- Brands
- Venues
- Investors
- Funders
- Platform owners
- Technology partners

HOW?

Value configuration, for example how does the company build up the form of distinction?

- Collaborating with target audience
- Licensing content
- Outstanding technical execution
- Thought leadership
- Outstanding creative execution
- Engaging in co-production
- Producing immersive experiences for at-home consumption
- Orchestrating location-based public event
- Facilitating access to end-user devices

FOR WHOM?

Customer interface, for example to whom is the form of distinction being delivered?

- At-home audience
- Location-based audience
- Hybrid audience

HOW MUCH?

Profit model, for example in what way is the company generating profit from the form of distinction?

- Revenue share
- App store sales
- Online sales
- Direct on-site sales
- Shared IP
- Project revenue

LIMINA IMMERSIVE
BUSINESS MODEL CONFIGURATION

WHAT

Value proposition, for example what is the company's form of distinction?

Specific target audience

Unique application of technology

Own intellectual property/R&D

Content distribution

Storytelling expertise in a new medium

WHO?

Strategic partnership, for example who plays fundamental role in developing form of distinction?

Content owners

Brands

Venues

Funders

HOW?

Value configuration, for example how does the company build up the form of distinction?

Collaborating with target audience

Licensing content

Thought leadership

Orchestrating location-based public event

Engaging in co-production

FOR WHOM?

Customer interface, for example to whom is the form of distinction being delivered?

At-home audience

Location-based audience

HOW MUCH?

Profit model, for example in what way is the company generating profit from the form of distinction?

Project revenue

Direct on-site sales

LIMINA IMMERSIVE SUMMARY

– Original value proposition in content distribution (VR films) and audience research

– Original business model changes due to shift from content expertise to service delivery

– Shift from location-based audiences and venues to at-home audience

– Shift from ticketing sales to project revenue (commissioned projects and research)

– Amplifying research output to pursue thought leadership

MEGAVERSE
BUSINESS MODEL CONFIGURATION

WHAT

Value proposition, for example what is the company's form of distinction?

Unique immersive experience	Unique application of technology
Storytelling expertise in a new medium	Own intellectual property/R&D

WHO?

Strategic partnership, for example who plays fundamental role in developing form of distinction

Venues

Funders

Technology partners

HOW?

Value configuration, for example how does the company build up the form of distinction?

Engaging in co-production

Producing immersive experiences for at-home consumption

Orchestrating location-based public event

FOR WHOM?

Customer interface, for example to whom is the form of distinction being delivered?

At-home audience

Location-based audience

HOW MUCH?

Profit model, for example in what way is the company generating profit from the form of distinction?

App store sales

Project revenue

Direct on-site sales

MEGAVERSE SUMMARY

– Original objective to commercialise R&D of unique combination of existing technologies for immersive theatre

– Shift from volumetric capture to motion for practical and cost reasons

– Shift from location-based audiences and venues to at-home audience for 2020

– Shift from orchestrating location-based concept to targeting at-home consumption (for now)

– Shift from ticketing sales to project revenue (commissioned projects) and smartphone app revenue

Creative immersive companies in context: shifts in business models

NO GHOST
BUSINESS MODEL CONFIGURATION

WHAT

Value proposition, for example what is the company's form of distinction?

Unique immersive experience	Storytelling expertise in a new medium	Own intellectual property/R&D

WHO?

Strategic partnership, for example who plays fundamental role in developing form of distinction

Funders

Platform owners

HOW?

Value configuration, for example how does the company build up the form of distinction?

Outstanding technical execution

Outstanding creative execution

Engaging in co-production

Producing immersive experiences for at-home consumption

FOR WHOM?

Customer interface, for example to whom is the form of distinction being delivered?

At-home audience

HOW MUCH?

Profit model, for example in what way is the company generating profit from the form of distinction?

Revenue share

App store sales

Project revenue

NO GHOST SUMMARY

– Original value proposition in linear animation and visual effects expertise

– Shift to immersive productions and interactivity

– In general, has maintained business objectives

– Planned promotional investments channelled to production work

– Harnessing production pipeline to release more paid content is key to revenue

– Revenue share with VR platform owners (Oculus store)

Creative immersive companies in context: shifts in business models

PLAYLINES
BUSINESS MODEL CONFIGURATION

WHAT

Value proposition, for example what is the company's form of distinction?

Unique immersive experience	Specific target audience	Unique application of technology
Content distribution	Storytelling expertise in a new medium	Own intellectual property/R&D
Unique proprietary technology		

WHO?

Strategic partnership, for example who plays fundamental role in developing form of distinction

- Brands
- Venues
- Funders
- Technology partners

HOW?

Value configuration, for example how does the company build up the form of distinction?

- Outstanding technical execution
- Outstanding creative execution
- Producing immersive experiences for at-home consumption
- Orchestrating location-based public event

FOR WHOM?

Customer interface, for example to whom is the form of distinction being delivered?

- At-home audience
- Location-based audience

HOW MUCH?

Profit model, for example in what way is the company generating profit from the form of distinction?

- Direct on-site sales
- Project revenue

PLAYLINES SUMMARY

- Original value proposition of bringing storytelling expertise into the immersive space
- Original tactic to use affordable 'makeshift' technology to explore the viability of AR concepts
- Shift from location-based audiences and venues to at-home audience for 2020
- Shift from orchestrating location-based concept to targeting at-home consumption (for now)
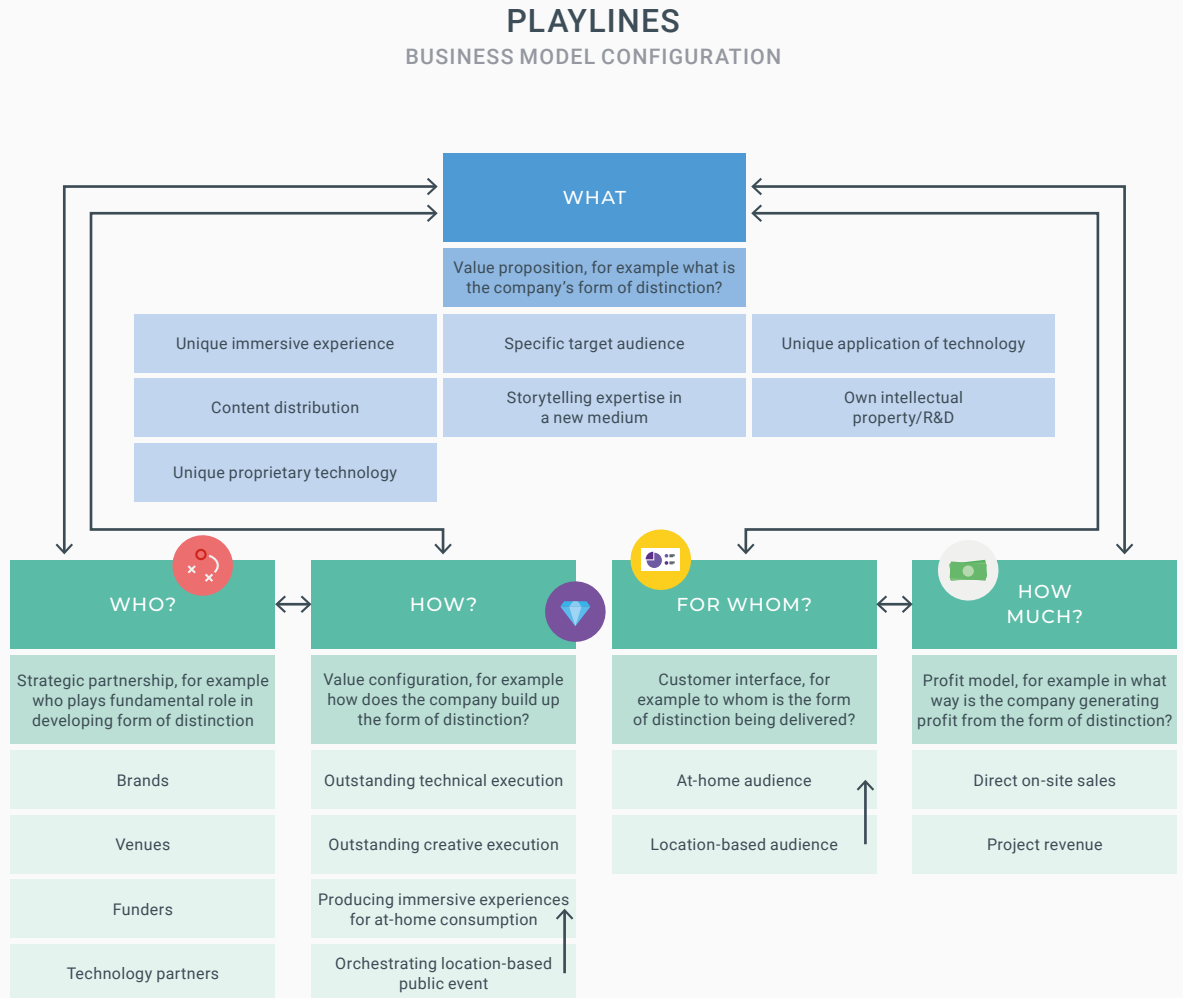- Shift from ticketing sales to project revenue (commissioned projects) and smartphone app revenue

Business model innovation tools: three paths for creative immersive

Contents

Business model innovation tools: three paths for creative immersive

To foster forward-looking thinking in the creative immersive space, accessible tools for thought are needed. This section answers the needs identified by adapting outputs from a European research project around business model innovation tools.[29]

BUSINESS MODEL INNOVATION

Business model innovation has been described as "a process that deliberately changes the core elements of a firm and its business logic"[30] and "the innovation in company's BM that is new to the firm and results in observable changes in the firm's practices towards its customers and partners."[31]

In the face of a global event such as the COVID-19 pandemic, or a disruption in technology or distribution channels, companies might need to acutely change the core elements of their business logic. In the creative immersive ecosystem, this means describing how a single producer or network collaborates on bringing products and services to the market. For example, if an immersive producer starts bundling their offering with other producers' offerings to create a festival package, this is registered as an event of significance in the ecosystem, and a change in offering by the audience.

Business model innovation tools: three paths for creative immersive

Examples of business model innovation are many, ranging from service bundling or unbundling, in- or outsourcing key resources, changes in pricing strategy, and so on.[32] For creative immersive producers, the following are particularly relevant:

– pivoting from product to service provider, striving to create more longevity for the offering by creating services around individual products, based on unique expertise

– attracting new customer groups or defining new markets

– transforming processes and/or products from physical to virtual (such as pivoting from location-based experiences to mobile and online distribution)

– making use of capabilities of cloud computing, 5G, and/ or big data analytics in efforts to improve products and collect audience insights

– collaborating to change from an in-house producer to an orchestrator in a network

– implement changes in revenue and commission models, such as moving from ticketing to a subscription model or other recurring revenue bundle

Research in the business model innovation (BMI) field has identified that to engage startups and small and mid-sized businesses the process needs to be simple.[33] The following section distils some approaches relevant to the creative immersive community.

BMI TOOLSET

While reviewing literature on the topic, a particular research project stood out as the one with most promise for practical application.
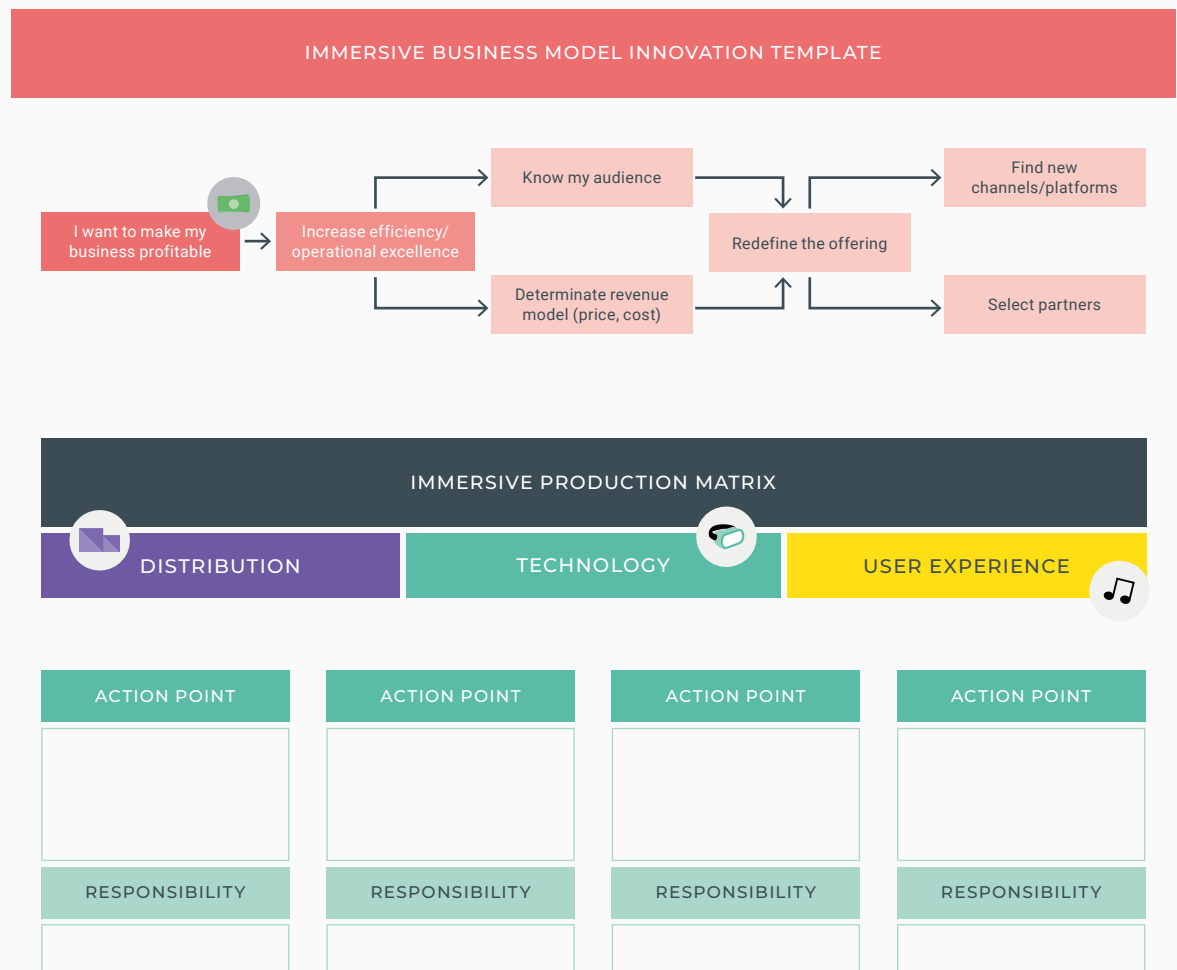
The Envision research project established three paths for clear-cut, actionable business model innovation. These three paths were established by engaging over 60 startups in using their elements and observing which directions they found to be most accessible and purposeful for thinking about solutions to their business challenges. As a result:

"We found three broader categories of paths, two for established firms 1) either want to innovate their BM to become more profitable or 2) to achieve growth. The start-up firms, in turn, are naturally searching for ways 3) to build up their BM. Then, we mapped the tools with the stages on the paths."[34]

These paths, centred around the simple prompt "I want", are presented over the following pages, with examples of potential avenues of exploration for creative immersive producers. The paths have been formulated into templates for practical workshop use, so that thinking about each path phase can yield concrete action points and responsibilities within a team. The immersive production matrix also plays a part in encouraging discussion around the entire possibility space.

The linear nature of these models is designed to make them more accessible as a decision-tree structure. In practice, matters might not play out quite in such a linear fashion, in which case the elements on the paths support prioritisation of time and resources.
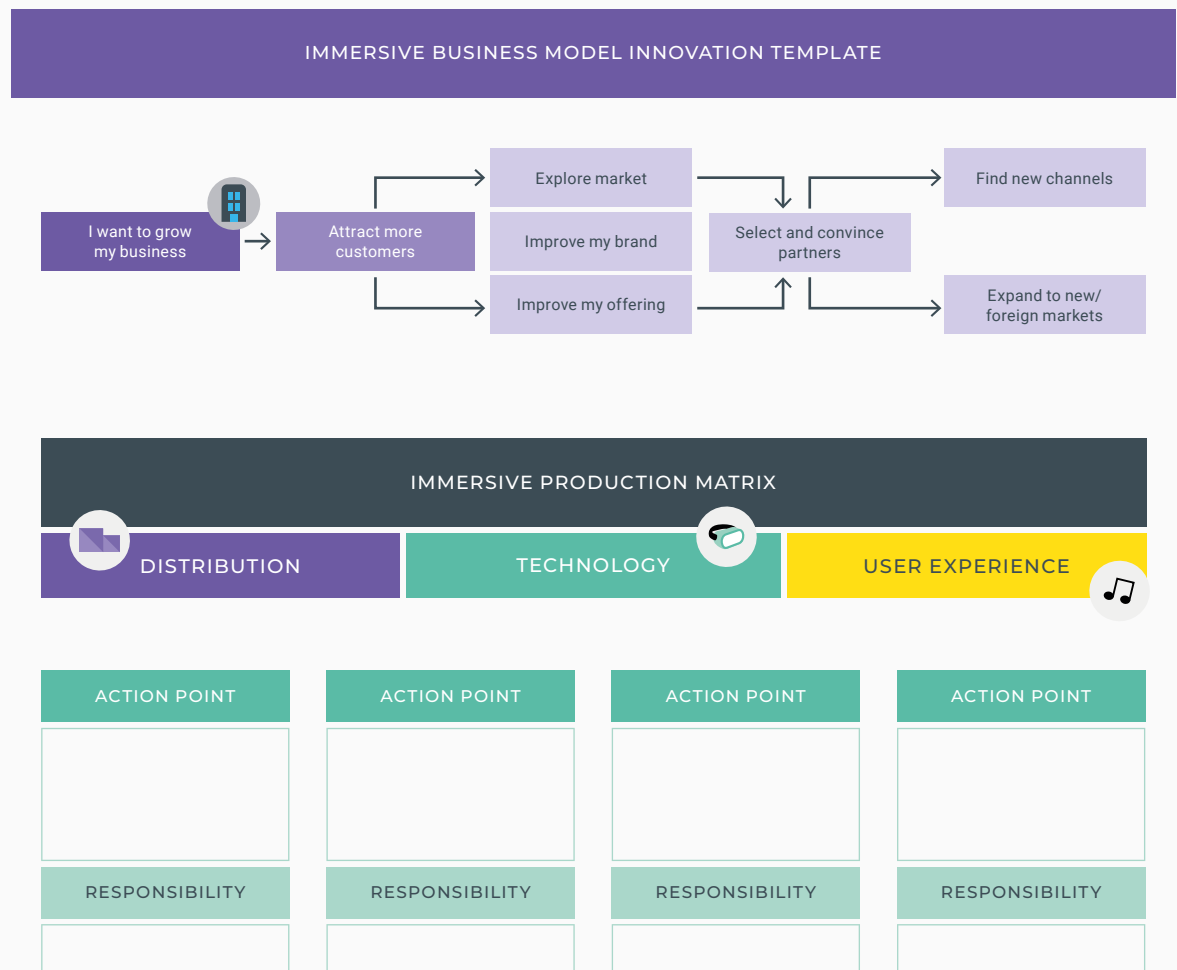
Business model innovation tools: three paths for creative immersive

IMMERSIVE BUSINESS MODEL INNOVATION TEMPLATE

```
I want to make my          Increase efficiency/          Know my audience          Find new
business profitable        operational excellence                                  channels/platforms

                                                                 Redefine the offering

                                                    Determinate revenue                         Select partners
                                                    model (price, cost)
```

IMMERSIVE PRODUCTION MATRIX

DISTRIBUTION	TECHNOLOGY	USER EXPERIENCE

ACTION POINT	ACTION POINT	ACTION POINT	ACTION POINT
RESPONSIBILITY	RESPONSIBILITY	RESPONSIBILITY	RESPONSIBILITY

PATH 1: PROFITABILITY

"I want to make my business more profitable" is a path for established small-to-medium sized businesses. This path involves activities relating to optimising production processes and/or subcontracting choices, understanding the audience better, exploring pricing and bundling strategies, and using the audience and pricing insights into redefining the offering and finding new channels for it, potentially with the help of partners.
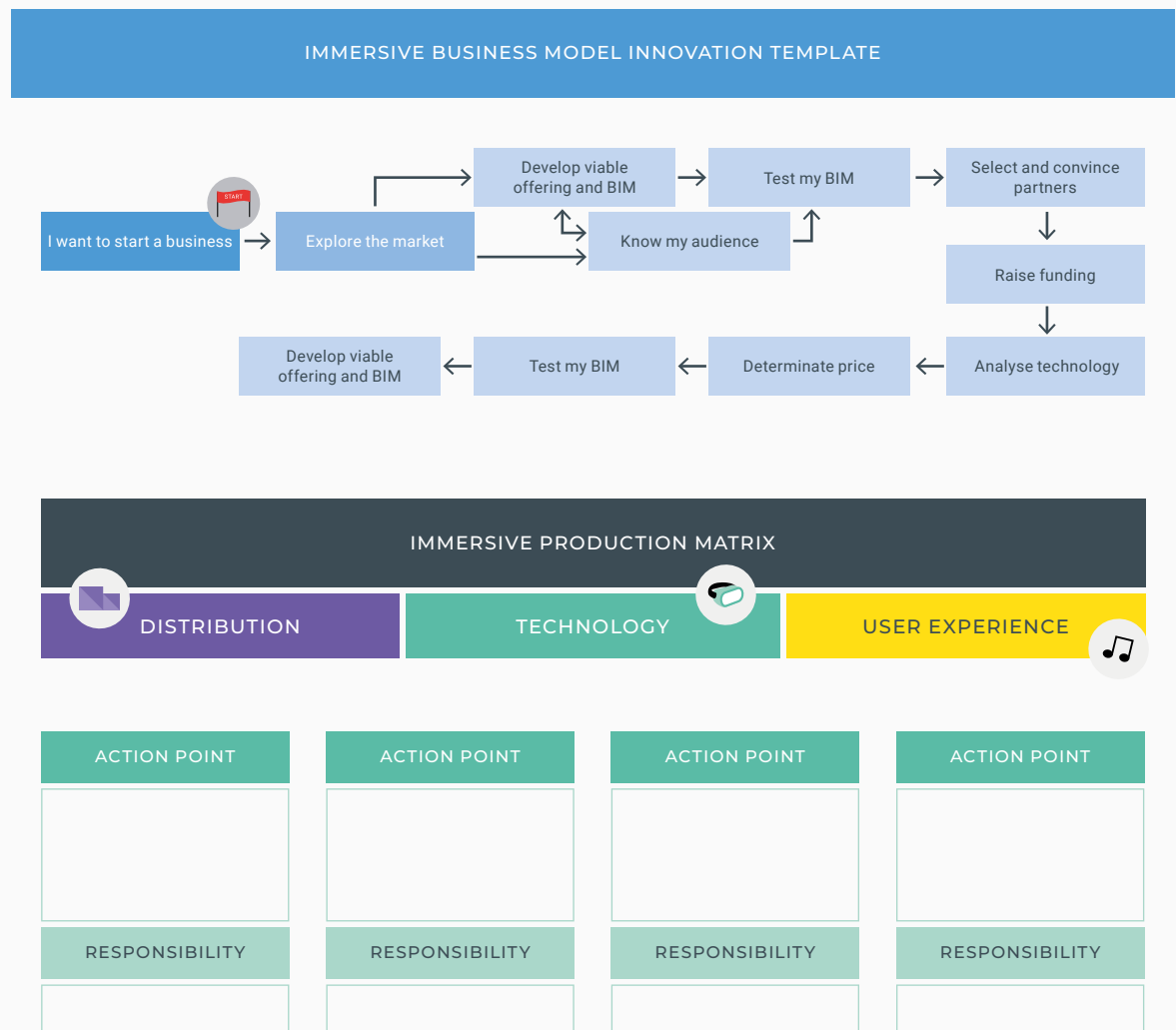
Business model innovation tools: three paths for creative immersive

IMMERSIVE BUSINESS MODEL INNOVATION TEMPLATE

I want to grow my business → Attract more customers

- Explore market → Find new channels
- Improve my brand → Select and convince partners
- Improve my offering → Expand to new/ foreign markets

IMMERSIVE PRODUCTION MATRIX

DISTRIBUTION	TECHNOLOGY	USER EXPERIENCE

ACTION POINT	ACTION POINT	ACTION POINT	ACTION POINT
RESPONSIBILITY	RESPONSIBILITY	RESPONSIBILITY	RESPONSIBILITY

PATH 2: GROWTH

"I want to grow" is another path for established small-to-medium sized businesses that starts with the assumption that customer data and audience insights are available to leverage for attracting larger audiences, for example, by expanding the production to new segments. Building a stronger brand identity around the offering and using that to convince partners is another route in the path.

Business model innovation tools: three paths for creative immersive

IMMERSIVE BUSINESS MODEL INNOVATION TEMPLATE

IMMERSIVE PRODUCTION MATRIX

DISTRIBUTION	TECHNOLOGY	USER EXPERIENCE

ACTION POINT	ACTION POINT	ACTION POINT	ACTION POINT
RESPONSIBILITY	RESPONSIBILITY	RESPONSIBILITY	RESPONSIBILITY

PATH 3: NEW BUSINESS

"I want to start a new business" is a path directed at startups, and therefore more explorative in nature. It reflects more uncertainty associated with the early exploration of markets and audiences to validate a business model out of many possible alternatives.

Business model innovation tools: three paths for creative immersive

BMI IN PRACTICE: ADVANTAGES, DISADVANTAGES, AND REMEDIES

Action research on business model tools has found that using them helps to make the design process more focused[35], and this is the rationale for introducing these approaches to the creative immersive community.

The risk of using such tools is that companies may create a single business model and invest all their resources and energy into that one direction. Instead, companies engaging with these tools should define multiple alternative directions. This is important especially when the market itself is undefined and the company's offerings are in flux, which is often a characteristic of technology-heavy and creative-led businesses, such as immersive.

Creative immersive producers should:

– create multiple alternative business model scenarios while the offering is not clear

– revise and rethink the models' flexibility to foster experimentation with various business model options

– acknowledge that such modelling can be challenging and seek consultation and facilitation from partners with experience and knowledge of the methods involved
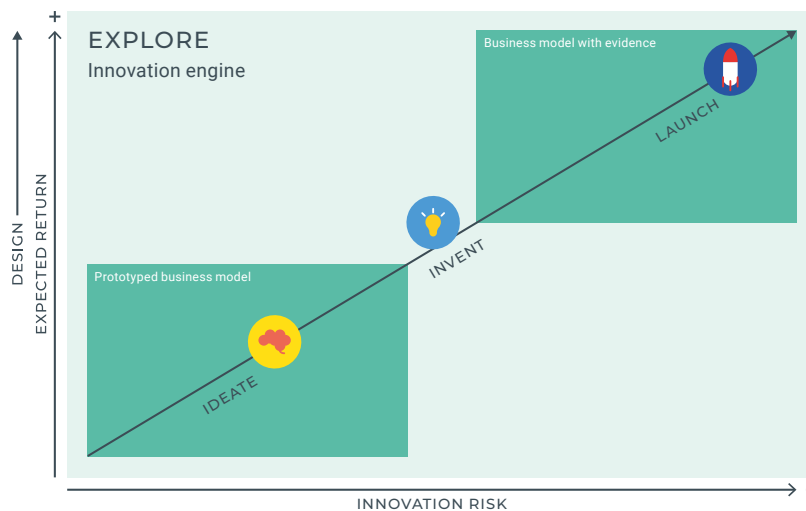
FROM INNOVATION TO EXECUTION

In the creative immersive space, the risk is that each initiative restarts the innovation cycle and therefore the paths of increased profitability (path one) and growth (path two) become elusive. Therefore, the goal has to be to transition from the perpetual R&D and prototyping to executing an evidence-based business model.
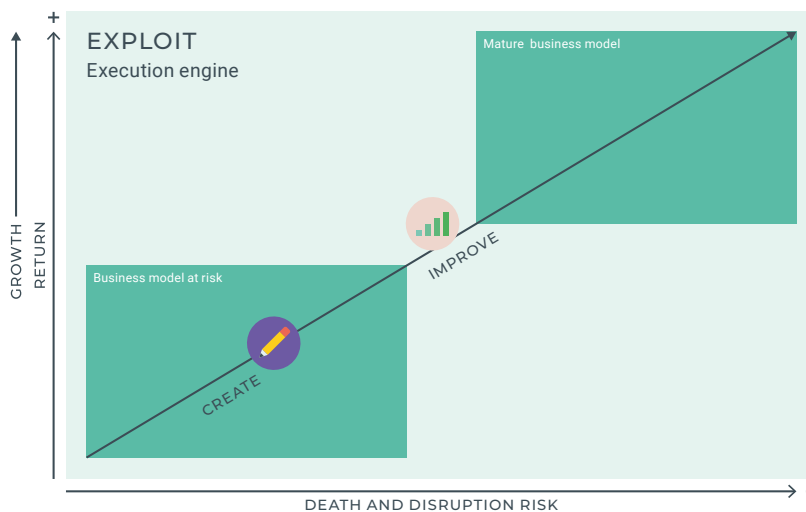
To interpret where the UK creative immersive market stands at the end of 2020 requires visualisation of the state of innovation and exploration (research and development and early startup activity) versus state of execution (where returns and growth can be seen).

'Business Model Canvas' authors Osterwalder and Pigneur provide an approach for such mapping. Their Business Portfolio Map helps entrepreneurs to visualise how prepared their organisations are for the future. By implication, this reinforces the need for more than a single business model configuration.

Business model innovation tools: three paths for creative immersive

EXPLORE
Innovation engine

DESIGN / EXPECTED RETURN

Business model with evidence

LAUNCH

Business model with evidence

INVENT

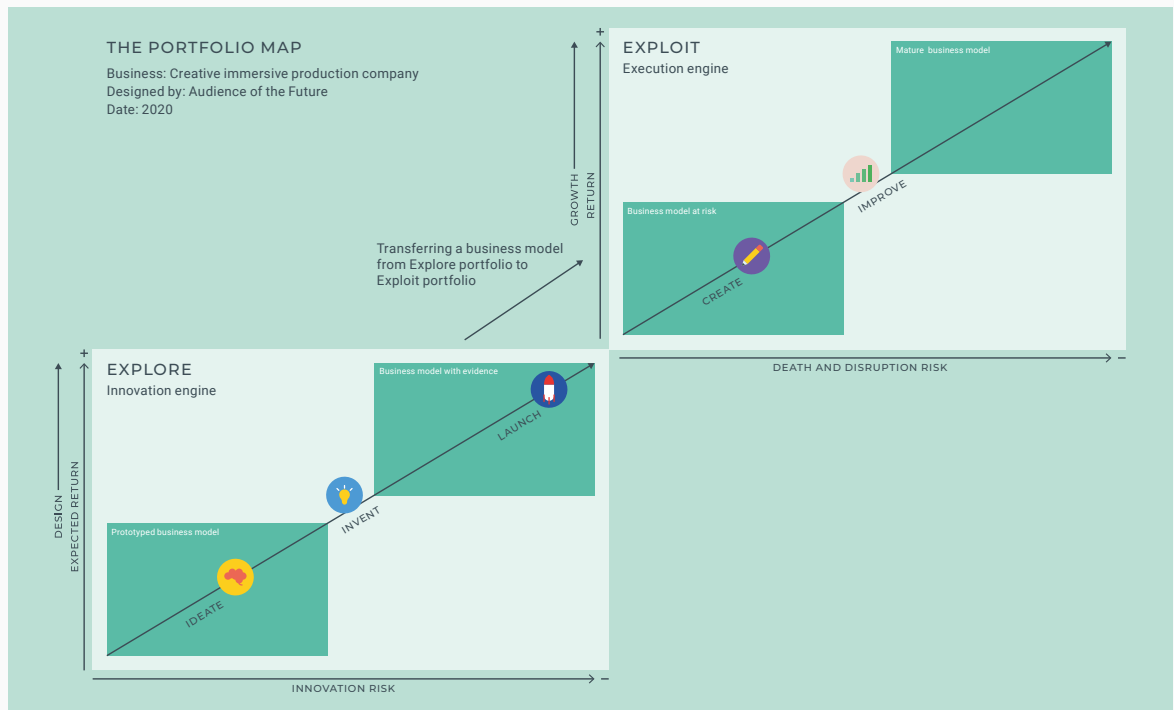Prototyped business model

IDEATE

INNOVATION RISK

First, the map is broken down into its elements, then a sample of immersive actors from the creative space are added. The first part of the map - EXPLORE - relates to the innovation cycle. Feasible projects move to the top right corner, where innovation risk has diminished and expected returns are great.

EXPLOIT
Execution engine

GROWTH / RETURN

Mature business model

IMPROVE

Business model at risk

CREATE

DEATH AND DISRUPTION RISK

Once there is positive evidence that the project's business model has gained traction, it can move from the EXPLORE portfolio to EXPLOIT.

While returns are small and disruption risk high, the whole business model is at risk unless it can be improved and mature into the growth stage (top right corner).

Business model innovation tools: three paths for creative immersive

THE PORTFOLIO MAP

Business: Creative immersive production company
Designed by: Audience of the Future
Date: 2020

Transferring a business model from Explore portfolio to Exploit portfolio

GROWTH RETURN

EXPLOIT
Execution engine

Mature business model

Business model at risk

IMPROVE

CREATE

DEATH AND DISRUPTION RISK

EXPLORE
Innovation engine

Business model with evidence

LAUNCH

INVENT

DESIGN EXPECTED RETURN

Prototyped business model

IDEATE

INNOVATION RISK

Osterwalder and Pigneur state that the ultimate goal of a balanced Business Portfolio Map is to show good, solid business models at the top right, and a lot of fresh new ideas at the bottom left."[36] The idea is to foster a lot of experimentation in the 'innovation engine' and eventually elevate the initiatives with business models that display traction into the 'execution engine', where their aim is to be sustainable and grow.

Business model innovation tools: three paths for creative immersive

THE PORTFOLIO MAP
Business: Creative immersive production company
Designed by: Audience of the Future
Date: 2020

EXPLOIT
Execution engine

Mature business model

FITXR

Established creative immersive companies and collectives

Business model at risk

MARSHMALLOW LASER FEAST

NGHST

IMPROVE

CREATE

GROWTH RETURN

Transferring a business model from Explore portfolio to Exploit portfolio

DEATH AND DISRUPTION RISK

EXPLORE
Innovation engine

Business model with evidence

MEGAVERSE   PLAYLINES

LIMINA IMMERSIVE

LAUNCH

INVENT

Prototyped business model

IDEATE

DESIGN EXPECTED RETURN

INNOVATION RISK

At-home audience

Producing immersive experiences for at-home consumption

Location-based audience

Venues

Orchestrating location-based public event

Direct on-site sales

The UK creative immersive economy has largely occupied the EXPLORE portfolio - the innovation engine - and many companies have been stuck in a perpetual research and development phase, with its associated risks. The Immersive Entertainment Industry 2020 Report, which is heavily US and immersive theatre-centric, nevertheless largely says the same.[37] As we have seen, COVID-19 has delivered industry setbacks, especially for location-based distribution.

Once the study sample companies are mapped onto the innovation-execution trajectory, it's possible to identify where the pain points lie. Even reaching the EXECUTION phase, launching and creating, does not inevitably lead upwards to the IMPROVE and GROWTH stages. Such a scaling effort does not seem to be viable in the current landscape.

More established immersive collectives from the UK (such as Marshmallow Laser Feast, Darkfield, and Punchdrunk) have had initial success with a touring model and revenue share, but are facing challenges in keeping the momentum going. UK company FitXR, which operates in a more directly commercial context, offering immersive fitness apps, has been able to grow through a number of product iterations and by releasing more paid content to the customer base. The risk of disruption comes from emerging competition from other startups and the platform owners themselves. No Ghost is on a potential trajectory to repeat a similar success with Madrid Noir, while Limina Immersive, Megaverse, and Playlines are in the innovation engine, at various stages of EXPLORE, trying to catapult themselves to EXPLOIT and stay in the execution engine.

Business model innovation tools: three paths for creative immersive

Of the aspects established as the distinguishing characteristics of creative immersive productions, location-based elements and their contingencies are in danger of perishing, while digital distribution and at-home consumption remain the only viable choices for 2021, and perhaps beyond.

Sarah Wolozin's conclusions about the sustainability factors for the creative immersive industry were:

1. Investment from governments and foundations
2. Generating content sales through technology companies' platforms
3. A network of exhibition and distribution spaces
4. Support for artists
5. Response to COVID-19

In the UK, points one, three and four have been relatively positive, while success in generating content sales has been elusive, and response to the pandemic is a work in progress. Solving point two would appear to require a more business-focused mindset, such as using the BMI tools.

This report concludes with alternative scenarios for the short-term future of the creative immersive industries, aimed at fuelling thinking around which business models would be the most resilient for sustainability in different potential futures.

Conclusions: future scenarios
for creative immersive industries

Conclusions: future scenarios for creative immersive industries

While this research provides a snapshot of the creative immersive landscape in 2020, what might change in the future? This report closes with three potential scenarios for creative immersive context over the next three to five years.

Scenario thinking acknowledges that no-one can predict the future, but that considering the possible alternative directions is a relevant strategic initiative. It enables companies to invest effort into creating a preferred future for their organisation or the market they are targeting - a proactive approach that enables them to play a part in shaping the future, rather than reacting to one that others have created. Scenarios are designed to inspire thinking about choices, and in this instance, they tie into the business model dimensions illustrated in this report.

Creating scenarios requires identifying trends and observing weak and strong signals about the area in focus. The scenarios also take into account broader societal contexts: in this case, the pandemic and how it has affected most markets in 2020. COVID-19 has accelerated certain trends[38] and developments, for example, such as content streaming and 5G, consolidation in the technological sector, and developments around production technologies, such as virtual production and synthetic media.

The scenario creation in this report takes inspiration from examples such as The Future Today Institute's approach.[39] This includes thinking about the future through the 'cone of plausibility', that is the probable, plausible and possible futures.[40] Such scenarios can also be framed according to their emotional disposition: either as optimistic, neutral, or pessimistic.

The three scenarios that follow have been written to encourage debate amongst those invested in the creative immersive space, with the goal of finding ways to sustain and grow the market in the UK and beyond.

Through dissemination of this research, readers are invited to challenge these scenarios and respond with their own, or demonstrate entrepreneurial spirit by actively contributing to the collaborative effort of solving the challenges that the creative immersive space is facing. UKRI and Digital Catapult seek to facilitate the discussion through their events and programmes that focus on the creative industries and immersive technologies.

Conclusions: future scenarios for creative immersive industries

SCENARIO ONE
PLAUSIBLE

SCENARIO TITLE	CATEGORY	DISPOSITION
BUSINESS AS USUAL, 2023	PLAUSIBLE	OPTIMISTIC

During the pandemic in 2020, remote viewing and participation became more popular, and the road was paved for increased adoption of new technologies that leverage these forms of consumption. This is an opportunity for immersive device manufacturers and content producers alike.

From 2021, mobile operators began rolling out 5G networks to the public, enabling immersive producers to embrace the technology and deliver more sophisticated experiences, regardless of location. Major global events that were delayed by the pandemic, such as the Tokyo Olympics, showcased the use of immersive technologies in ways that brought the experience to larger segments of the general public.

Consumer electronics supply chains were affected but eventually were restored, and by the beginning of 2022, more location-based entertainment venues were back in operation.

The job market and consumer entertainment spend started to recover in 2022, which triggered a refreshed influx of audiences to location-based entertainment venues. Adoption of consumer AR glasses started to take off at the same time, opening up another major market for immersive producers. By 2023, volumetric capture had become affordable for most producers, and forms of synthetic (AI-assisted) media production contributed to a boom in user-generated immersive content.

Conclusions: future scenarios for creative immersive industries

SCENARIO TWO
PROBABLE

SCENARIO TITLE	CATEGORY	DISPOSITION
A VIGILANT WORLD, 2023	PROBABLE	PESSIMISTIC

In the immediate aftermath of the pandemic, several entertainment centres and movie theatre chains closed, and operating more niche location-based events, such as immersive productions, has become impossible. Denial about the consequences of the pandemic among immersive producers left them unprepared for this shift. Consumers were adopting hygiene standards that have permanently crippled the viability of location-based entertainment.

There are electronics supply shortages, and investment remains scarce. Gradually, producers have returned to more profitable online projects using more traditional formats and technologies.

Growth in immersive digital distribution was also stalling, as content streams dried up due to production challenges during the pandemic. With in-site revenue stream from food and drink and merchandising disappearing, immersive producers on digital platforms have been trying to convert their audiences into paying for episodic content and subscriptions as their recurring revenue bundles.

Conclusions: future scenarios for creative immersive industries

SCENARIO THREE
POSSIBLE

SCENARIO TITLE	CATEGORY	DISPOSITION
WEAK SIGNALS, 2023	POSSIBLE	NEUTRAL

From 2021 onwards, success stories of how creative immersive and real-time technologies supported healthcare and other key workers during the pandemic emerge. Social acceptance and interest in VR in particular have increased, while the average consumer's leisure budget has taken a hit. Business momentum remains in commercial enterprise solutions and content creation tools.

The immersive producers who weathered the storm face the same challenges as before the pandemic. Bundling productions with physical goods, such as books, have seen some niche success stories in the smartphone AR app market.

Immersive distribution channels stay predominantly digital during 2021-22. Creative producers have had fewer platforms on which to release experimental immersive content; the most robust VR distribution platform since 2020 has been the Oculus store with its built-in ticketing platform attracting producers. VR studios reported multiples in software sales during the Quest 2 launch in October 2020, but due to the highly curated, gaming-focused strategy, many immersive producers did not find traction when pitching their concepts.

Consumer VR remains a relatively niche platform, with social applications being the most profitable. Delivery of live performances via VR has started gaining traction since 2021, even as Epic Games' metaverse built around Fortnite continues to dominate as the front-of-mind platform for artists and audiences alike.

Footnotes, acknowledgements and about the author

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Acknowledgements

We thank the following for their contribution to the research:

About the author

DR AKI JÄRVINEN

Dr Aki Järvinen is an immersive researcher, designer, and technologist with 20 years of experience with interactive media. He works at Digital Catapult in London, helping UK companies adopt immersive technologies into their business.