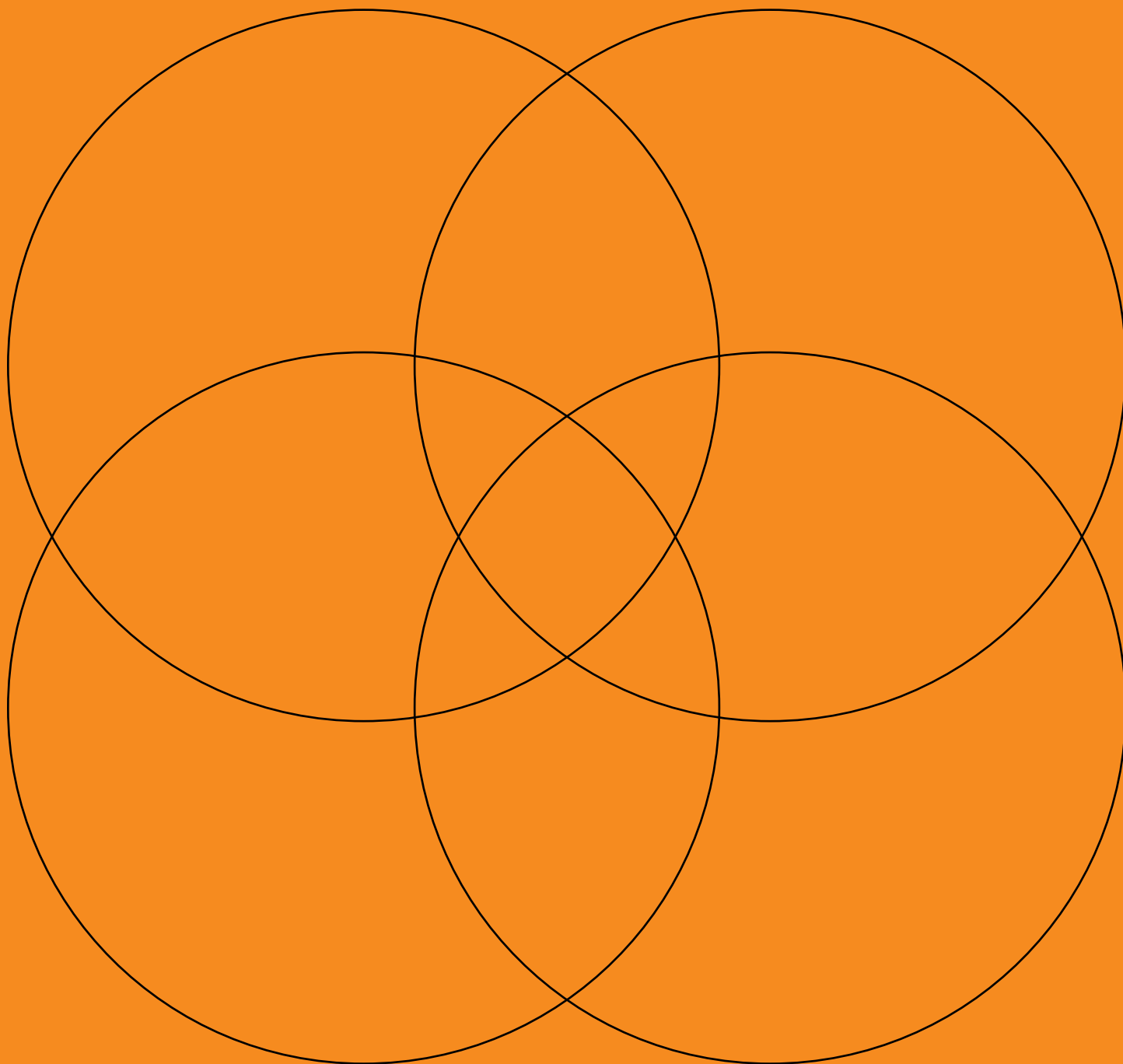


Crafting a Market for Independent XR

Challenges
and Opportunities for
Distribution, Circulation
and Discoverability



Study by

QC
CA **XR**

Partners

MUTEK



QUÉBEC

PHI



With the support of



Canada Council
for the Arts

Conseil des arts
du Canada

Montréal

Québec

Crafting a Market for Independent XR

Challenges and Opportunities for Distribution, Circulation and Discoverability

Study by

QC
CA **XR**

Partners

MUTEK

Xn QUÉBEC

PHI

Festival du Nouveau Cinéma de Montréal

RIDM

With the support of

Canada Council for the Arts **Conseil des arts du Canada**

Montréal

Québec

The *Crafting a Market for Independent XR* study is an initiative of Québec/Canada XR, in partnership with MUTEK, Xn Québec, PHI, Festival du nouveau cinéma (FNC), and Rencontres internationales du documentaire de Montréal (RIDM). The project was made possible by the financial support of the Canada Council for the Arts and the City of Montreal as part of their cultural funding agreement with the Government of Quebec.

We acknowledge the support of the Canada Council for the Arts.

Proud partner of the City of Montreal.

The production and translation of the executive summary of the study was made possible thanks to the financial support of the SODEC.

© Copyright MUTEK 2022

Author and Research Lead

Sandra Rodriguez
PhD, XR/AI Director and Producer,
Sociologist of New Media Technology

Research Team

Interviews

Monique Simard
Producer and Cultural Manager,
Chairwoman of the Board — Québecor Fund,
Chairwoman of the Board — Partenariat du
Quartier des spectacles

Survey and Interviews

Philippe Bédard
PhD, Project Lead — Québec/Canada XR

Data Crunching

Coline Delbaere
Producer of Immersive Experiences and
Touring Exhibitions — PHI

Content Editor

Jesse Damiani
Founder — Postreality Labs

Project Team

Project Lead

Katharina Meissner
Strategic Development Director — MUTEK

Coordination

Philippe Bédard
PhD, Project Lead — Québec/Canada XR

Coordination

Julie Dagenais
Head of Professional Activities — MUTEK

Graphic Design

de Mars

Language Editor

Owen Weiss

Translation to English

Joë Villaverde

Translation to French

Marie Mello

Contributors

Myriam Achard, Chief New Media Partnerships and PR — PHI; Coline Delbaere, Producer of Immersive Experiences and Touring Exhibitions — PHI; Jenny Thibault / Sophie Couture, Executive Director — Xn Québec; Katayoun Dibamehr, Head of New Media — FNC Explore

We would like to thank all the people who participated in the interviews and contributed generously with their knowledge of the XR industry:

Anna Abrahams
Programmer — Eye Filmmuseum (Amsterdam)

Antoine Cayrol
Producer and Co-founder — Atlas V, Astrea, Albyon (Paris)

Chloé Jarry
CEO and Executive Producer — Lucid Realities (Paris)

Eddie Lou
Founder — Sandbox Immersive Festival, Sandman Studios (Beijing)

Eleanor (Nell) Whitley
Executive Producer — Marshmallow Laser Feast (London)

Ingrid Kopp
Co-founder — Electric South (Cape Town)

Jimmy Cheng
Director of Content and Business Operations — Digital Domain (Taipei)

Julie Tremblay
Executive Producer Installations and Touring Exhibitions — PHI (Montreal)

Laurianne Desormiers
Marketing Manager, Interactive — National Film Board of Canada (Montreal)

Leen Segers
Co-founder — Women in Immersive Tech, Venture Studio Manager — Miles Ahead (Brussels)

Liz Rosenthal
Co-curator — Venice VR, Founder and CEO — Power to the Pixel (London)

Louis-Richard Tremblay
Executive Producer, Interactive — National Film Board of Canada (Montreal)

Mads Damsbo
Founder and Lead Producer — Makropol (Copenhagen)

Michel Reilhac
Co-curator — Venice VR, Head of Studies — Venice Biennale College Cinema and Cinema VR; Founder — MELANGE (Amsterdam)

Myriam Achard
Chief New Media Partnerships and Public Relations — PHI (Montreal)

Paul Bouchard
Head of XR Sales and Acquisitions — Diversion cinema (Paris)

Ricardo Laganaro
XR Director — ARVORE (São Paulo)

Sebox Hong
Brand and Business Development Manager — Kaohsiung VR FILM LAB (Kaohsiung)

Shari Frilot
Chief Curator — Sundance New Frontier (Park City)

Stéphane Rituit
Co-founder and CEO — Felix & Paul Studios (Montreal)

Tammy Peddle
Manager, Marketing and Distribution — National Film Board of Canada (Montreal)

Yelena Rachitsky
Executive Producer Media AR/VR — Meta [Oculus] (San Francisco)

Table of Contents

Summary	5
Introduction	8
Navigating This Report	16
1. Forever Young — An Ecosystem in a Constant State of Redefinition	17
1.1 A Quantitative Overview	20
1.2 A Gamer's World?	23
1.3 Foreseeing the Future for Independent XR: At-Home or Location-Based?	29
1.4 From the Community: It's Complicated	32
1.5 Key Learnings and Recommendations: Staying Flexible and Adaptable	36
1.6 A Case Study: Atlas V and Astrea	39
2. Reaching an Audience — Circulation Challenges, Needs, and Deals	44
2.1 Getting Noticed in the Wild West	47
2.2 Moving to Prioritizing Circulation Over Visibility	52
2.3 Deals and Standards – Online or LBE	57
2.4 Key Learnings and Recommendations: Longevity, Searchability, and Holding on to Your IPs	62
2.5 A Case Study: Diversion cinema	66
3. Distribution and Curation of Independent XR — Experimentation and Collaboration	71
3.1 Enticing Audience Demand or Responding to It?	74
3.2 The Pandemic Crisis and New Opportunities for Experimentation	78
3.3 Circulation and Distribution – For the Sake of the Market or Art?	82
3.4 The Importance of Curation	85
3.5 Key Learnings and Recommendations: Focusing on Hybrid Practices and Sustainability	87
3.6 A Case Study: Venice VR Expanded	91
4. The Elephant in the Room — Monetization Challenges and Crafting a Market	97
4.1 A Commercially Thriving Sector	101
4.2 Emerging Trends, Here and Abroad	102
4.3 Monetizing Curation – Finding the Right Partners to Expand Reach	107
4.4 Key Learnings and Recommendations: Hybridity, Targets, and Trust	109
4.5 A Case Study: Marshmallow Laser Feast	113
Conclusions — A Growing Sector in Search of New Parameters	120
Biographies	126
Contacts	131

Summary

The vitality in the immersive media sector is stirring. In the last decade alone, creators, pundits, and investors in emergent media have predicted (and promoted) a steady growth in strength and audience reach for virtual reality (VR), augmented reality (AR), and extended reality (XR)¹ productions.

On one hand, immersive technologies have started to permeate cultural, entertainment, and industry realms in growing numbers each year. The terms *virtual*, *augmented*, and *emergent* media have also gained in popularity and acceptance by the general public. In addition, even if the field has witnessed inevitable setbacks—with VR headsets not selling as much as expected or AR applications not reaching audiences as quickly as planned—many considered these wanes in adoption as reflecting the time and adaptation needed for any new medium to find its audience. New developments continue to arise, and artificial intelligence and non-fungible tokens (NFTs) are now also increasingly being added to XR creators' and promoters' vocabularies.

For enthusiasts and optimists, these changes suggest encouraging new possibilities with regard to demand for—and exploration of—XR genres, as well as opportunities for creators and producers to reach a budding audience.

On the other hand, as we'll see in the following chapters, the uncertainty surrounding such uncharted territories also makes it particularly hard for XR observers, funders, and supporters to properly assess the growth and sustainability of this new cultural sector—in particular, when focusing on independent XR productions. Clear numbers on monetization and return on investment for experimental or narrative-led experiences are hard to obtain. Licencing deals and distribution agreements are made using a trial-and-error approach, by actors who often find it hard to define the scope, nature, and value of their changing activities. Monetization and business plans are still inspired by models drawn from traditional media (film or television), and don't always take into account the sums and time spent in exploring new ways to pique the general public's interest and evangelize to them.

New market practices and new models for circulation and distribution opportunities often fly under the radar. Any assessment of a new sector's growth using old frameworks will result in a failure to account for the limitations, realities, opportunities, and needs of an emerging, yet quickly growing, community. What's needed is a new look into new practices.

¹ Virtual reality (VR) and augmented reality (AR) are terms that are still currently debated. Extended reality (XR) is used today as an umbrella term to encompass all current immersive technology and emergent technology that is still to come. In the context of this research, we use XR to encompass VR, AR, MR, and exploratory practices within the immersive media sector.

Moreover, as the findings of this study suggest, creators, exhibitors, distributors, and investors involved in the production and promotion of independent XR have witnessed major changes in public adoption and interest for immersive media over the last few years.

The respondents we have met in the context of this study noted the considerable adaptations they have had to sustain to align with new distribution and circulation opportunities, and they share an optimistic vision for what they feel are the new doors that are opening.

Indeed, whether or not they agree on the best strategies to take advantage of today's momentum and ensure the discoverability and accessibility of their XR works, many respondents highlighted what they feel is a growing space for projects that explore the following: cutting-edge technology, new forms of interactions, and creative ways of engaging with an audience through a diversity of formats—stories, games, cultural events, and socially shared experiences—projects that this study chooses to refer to as independent XR.

From a funding perspective, our study also finds that new players are emerging aside from film festivals: Arts funders, digital exhibition spaces, museums, creative institutions, and technology investors are picking up on this growth in public interest for immersive media. Recent years have seen a resulting increase in financing and support for XR experiences situated outside the usual “blockbuster” gaming approach.

In this context, Canadian and Quebecois makers and producers hold an auspicious position. Independent XR projects that are incubated and produced here continue to claim major awards on the international circuit, creating an enviable reputation for our local creativity and unique flair for technical innovation.

As new demands and opportunities arise here and abroad, our study has found that creators, producers, and exhibitors of independent XR constantly readapt their practices to match unexpected changes, with little guidance and few points of reference available. They test and adjust to keep the quality of content in check, explore new monetization practices, and circulate their work, all while hoping to establish practices that are sustainable and flexible enough to allow a nascent ecosystem to grow.

In addition to these major challenges, our study examines how COVID-19 restrictions and realities have affected XR creators, programmers, and distributors as they have had to reassess their circulation strategies: In 2020, venues and digital-work spaces were abruptly shuttered, forcing many to rethink the ways they could reach and maintain their audiences. According to respondents in this study, this reshuffling of cards has made it even more challenging to properly assess the frameworks used to evaluate, calculate, and share numbers on the growth and state of the independent XR sector. Those respondents nevertheless work hard at expanding a market that many feel cannot be defined, as such—yet².

² The recent study *FR//XR: A Handbook for Immersive Producers* (2021) conducted by French Immersion and Kaleidoscope suggested: “Immersive producers are forced to navigate in a challenging environment: there is not one production or distribution model for immersive experiences, there is no mass XR market.”

In this challenging, change-filled—yet exciting—moment, our committee felt there was genuine need for an up-to-date portrait of the trends, new business models, distribution challenges, and opportunities associated with independent XR productions.

This **study on independent XR distribution, circulation, and discoverability** aims to support producers, distributors, and exhibitors by providing tools, models, and outlines to help navigate important issues tied to the distribution, monetization, discoverability, and accessibility of independent XR content.

The **research was commissioned by Québec/Canada XR**, a think tank initiated by MUTEK, Xn Québec, PHI, Festival du nouveau cinéma (FNC), and Rencontres internationales du documentaire de Montréal (RIDM), which is made possible by the financial support of the Canada Council for the Arts and the City of Montreal as part of their cultural funding agreement with the Government of Quebec.

The study was led by **Sandra Rodriguez**, as research consultant and writer of this report, in collaboration with a research team and the founders and coordinating team at Québec/Canada XR.

From **February 2020 to September 2021**, our team conducted:

- **two quantitative market analyses** of Quebec, Canada, and international XR markets;
- **two qualitative surveys** with local and international members of the community (40 respondents, including 25 men and 15 women);
- **19 in-depth interviews** with 22 leaders, professionals, and innovators in the XR field, to take stock of trends, changes, and experimentation in distribution models, deals, and monetization practices.

We want to thank all the participants, who generously shared their time, knowledge, and thoughts with us, as well as those who took part in our public panels and workshops held around the publication of this report.

Their voices helped us gain valuable insights that have shaped the results presented here. We hope their knowledge and experiences will help foster a better understanding of what remains a nascent, but nevertheless promising, cultural sector—thereby highlighting its unique needs and realities, and its unbound opportunities.

For more information on the project, and additional resources, please visit independent-xr-market.org

Introduction

In its hope of assessing the trends in, and evolution of, independent XR distribution and circulation practices, this report first responds to the mandate of the Québec/Canada XR (QC/CA XR) think tank. Namely, to support independent XR makers, funders, distributors, and exhibitors in increasing circulation of their work, improving visibility and recognition of their expertise, and providing tools that support the members of a growing XR field.

Initial events and workshops held by the QC/CA XR steering committee (MUTEK, PHI, Xn Québec, RIDM, FNC) had already highlighted the difficulties experienced by members of the independent XR sector in finding appropriate, in-depth information on local and international project sales. Many found it hard to gauge the efficiency of some new experimental practices or seemed to informally share and seek new frameworks to create licence deals, as well as business-to-business (B2B) and business-to-consumer (B2C) plans.

The independent XR sector is still quite young. One could even argue, as local and international pundits have done before us, that there is still no mass XR market yet. Comparing independent XR to mainstream XR is therefore particularly hard to do, without a clear differentiator between the types of productions that fall into each category.

What we do know, though, is that the public's curiosity for creative, narrative-led, and more experimental immersive or XR experiences is growing. In parallel, the independent XR field has been reorganizing its practices and offerings in the last few years, creating networks for circulating and exhibiting works that involve new actors: museums, digital arts venues, libraries, and public spaces, among others—thereby further blurring the boundaries in this growing sector.

Members of the independent XR community aren't deterred by these troubled waters. They create networks, draw inspiration from recent successes, and reassess and negotiate their roles within a complex, constantly changing ecosystem. As they do, they also inevitably favour particular models that help them find more stability, sustainability, and consolidation. We believe these new practices, forms of experimentation, and reflexes to forge frameworks and precedents for future ways of doing business will shape new ways of distributing, circulating, and monetizing independent XR works.

It is key to pay attention to these ongoing changes and, in particular, to the ways members of this emerging community define and make sense of their own practices.

What are the current solutions being tried out by producers and creators of independent XR to circulate and distribute their work?

What tools do creators, distributors and exhibitors have in hand when they try to adapt to new trends in consumption and exhibition?

How have producers' and distributors' roles changed and merged over the last few years?

How has the COVID-19 pandemic affected the distribution and exhibition of XR works?

And how are the members of this nascent ecosystem planning their relationship with a changing public and its taste for novelty?

As we explore these questions in detail, we hope to draw inspiration from best practices, approaches, and unexpected discoveries from the innovators forging this emerging field—to help gain a better understanding of the ways to assess the distribution, circulation, and discoverability of today's independent XR sector, and rethink them together.

A new look, a new take on the parameters by which we evaluate the health and growth of this sector is needed.

Our Vision – Going Beyond the Numbers

Our research adds to a myriad of recent surveys and studies published within the last year which have helped us identify the current needs of the XR market, adaptations to the COVID pandemic, as well as highlight differences in terms of cultural and geopolitical funding, circulation of XR works, and monetization issues³.

In a similar vein, our study strives to **provide a general overview of current practices and opportunities for the distribution and circulation of independent XR**. Yet, we choose to seek answers beyond solely the numbers provided by distribution or major-platform sales. More than market statistics, we want to understand the *needs* and *realities* of our community.

Our objective is thus to also learn from the trial-and-error process encountered by producers, promoters, and presenters in independent XR. To be sure, many new distribution practices still fall under the usual radar of statistical analysis or evaluation criteria for profitability put forward by public or private financial institutions. That said, we also felt it important to add data from more experimental findings and inspiring best practices.

As the results from this study show, XR industry actors hold interesting traits in common, including:

- high adaptability
- multidisciplinary market and distribution approaches
- capacity to innovate by combining past practices and knowledge from mainstream media
- interest in experimenting with unconventional ways of doing business, signing distribution agreements, and paving new deal models

We believe there is much to learn from these skills and reflexes. A new look, a new take on the parameters by which we evaluate the health and growth of this sector is needed.

³ One can think of white papers of best practices such as the *FR//XR: A Handbook for Immersive Producers* by French Immersion, *Making Sense of Immersion* in 2021, *PTC annual report* (2021), *Pulse on VR – The State of Virtual Reality in Canada* (2017–2019), etc.

Objectives

In keeping with this research mandate, this study strives for a more **qualitative approach**. We see this report as a space for dialogue between actors in the independent XR sector. Our general goal is to help unpack the main challenges and friction points, highlighting needs and “unearthing” solutions encountered by actors in the field as they refine their practices in a rapidly shifting sector.

We hope to offer members of the XR sector tools to think and plan agreement deals and business models. We also hope to make financial institutions and organizations more aware of the specific needs, opportunities, and realities of independent XR actors.

Additionally, our research sheds light on the current independent XR distribution and circulation ecosystem, highlighting changing trends in public interest and adoption. In particular, we wanted to hear from members of the XR community to learn from their subjective experiences, appreciation of ongoing changes, and impressive resilience in light of the current realities under COVID.

From the research results, we hope to **redefine parameters for evaluating the XR distribution market**. We believe it is useful to raise awareness among exhibitors and financial institutions about the unique needs and realities of this growing sector, so that they can adequately support content, creators, and distributors in responding to new audience needs.

Finally, we seek to reach the curators at cultural venues and festivals in order to encourage the circulation of Quebec, Canadian, and international experience, thereby achieving greater public awareness and engagement with these works.

Providing
a qualitative
and quantitative
overview of
changing trends
and needs

Outlining the challenges, opportunities,
and realities of distributing independent XR

Creating a toolbox
and reassessing
successes

Offering an up-to-date overview
of models for distribution, circulation,
and monetization of independent XR

Raising awareness
and education
on practices, tools,
trends, successes

Reviewing parameters for evaluating the
circulation and distribution of XR content

Reinforcing public
and institutional
engagement

Covering XR content, its market,
and its creators in order to enhance
the discoverability and circulation
of independent XR

Methodology⁴

An initial **literature review**, combined with **two in-house local and international quantitative market analyses**, were conducted to provide clear data and information on emerging trends in XR consumption, adoption, and distribution. This initial review helped contextualize our research findings⁵.

Preliminary discussions helped take stock of quantitative and qualitative studies already conducted by members of the steering committee. The available data helped identify priority issues and key actors in the field, while also identifying dark corners and gaps in the numbers—for instance, why are so many producers and exhibitors hesitant to share deal models or sales success stories?

To add nuance to our research findings (and highlight what is hidden behind the numbers), we then conducted **two short surveys** with members of the local and international XR sectors, to help focus on their subjective understandings of current changes identified by the quantitative data.

We also queried how members of the independent XR field perceived their own roles, needs, and responsibilities in this nascent ecosystem. The surveys found responses in a limited but representative number of participants (40 in total: 25 men, 15 women), which helped us take stock of how members of the XR field subjectively talked about particular challenges and experiences: What feels more relevant to them? What do they really value and prioritize when trying to circulate or distribute independent XR? What are things that they cherish but that are rarely made salient or visible by usual quantitative market analysis?

Beyond these two general quantitative and qualitative portraits, we also wanted to draw from more nuanced thoughts, experiences, and observations on the obstacles, success stories, and trial-and-error processes that independent XR makers and producers encounter when they circulate and distribute their work.

Between April and June 2021, our research team carried out **19 in-depth interviews with 22 respondents** located in North and South America, Europe, Asia, and Africa (12 women, 10 men). A majority of respondents focused their activities on

⁴ For more information on the project, and additional resources, please visit independent-xr-market.org

⁵ Literature review of other similar studies focusing on the evolution of the XR market, XR circulation, or the adaptation of XR distribution in light of the COVID-19 pandemic.

showcasing and exhibiting a collection of XR works (8), followed by respondents that focused their activities on production (8), and on distribution and circulation activities (6).

All the interviews helped gain us precious insights into the lived experiences within this changing sector. However, we identified six cases that we felt were representative of current developments or that helped identify nascent trends in the sector. These case studies add more subjective context and nuance to the research's findings. Each chapter therefore ends with key learnings from our study, which are supplemented by a summarized transcript of a case-study interview, in the hopes of offering a snapshot of changes, tendencies, and trends among independent XR producers and makers, locally and abroad.

XR (VR, AR, MR)

Quantitative

Data analysis, world and local trends

Qualitative

Series of 19 in-depth interviews

Polls

Taking stock of interests, challenges,
and opportunities

Case studies

Unique approaches, best practices,
and inspiration

Navigating This Report

1

Chapter 1 provides a general overview of XR market trends. It offers a condensed quantitative analysis, gathering numbers on the adoption and commercialization of headsets and head-mounted displays (HMD), but also highlights surprising changes in public interest in XR experiences. We consider the shift from at-home to location-based entertainment (LBE) consumption, highlighting recent changes due to COVID-19 lockdown. Finally, we hear from actors in the independent XR field that there is a shared feeling that new practices are still hard to assess and define. ATLAS V's distribution arm ASTREA is presented here as a case study, since the studio has established precedents around how independent XR productions are defined and is now continuing to innovate in terms of distribution.

2

Chapter 2 focuses on the unique challenges when circulating independent and innovative XR content, from the perspective of creators and producers of more-independent experiences. As the chapter highlights, many makers and producers still feel they need to differentiate their work from more game-oriented circulation efforts. In this context, project success becomes closely intertwined with a simultaneous capacity to be widely seen and experienced, which brings with it the chance of generating revenue and a way to grab the attention of the media and the industry—what some refer to as “evangelization.” The case of DIVERSION CINEMA, who were perhaps the first distributors to specialize in independent XR content, helps highlight strategies and approaches to guide XR makers and producers in reaching an audience.

3

Chapter 3 continues the conversation by focusing on the perspective of individuals, events, and locations specialized in the circulation, distribution, and exhibition of independent XR works. In today's context, the discoverability of independent XR works is highly related to the curation and programming of exhibition events and venues. In 2020, COVID-19 realities brought about a drastic change that caused many to rethink their relationship to the public. This chapter focuses on new limitations and opportunities for curating and showcasing a repertoire of different XR experiences, installations, and projects. As a case study, we focus on VENICE VR EXPANDED's experience and its long-term strategies for creating a renewable XR offering.

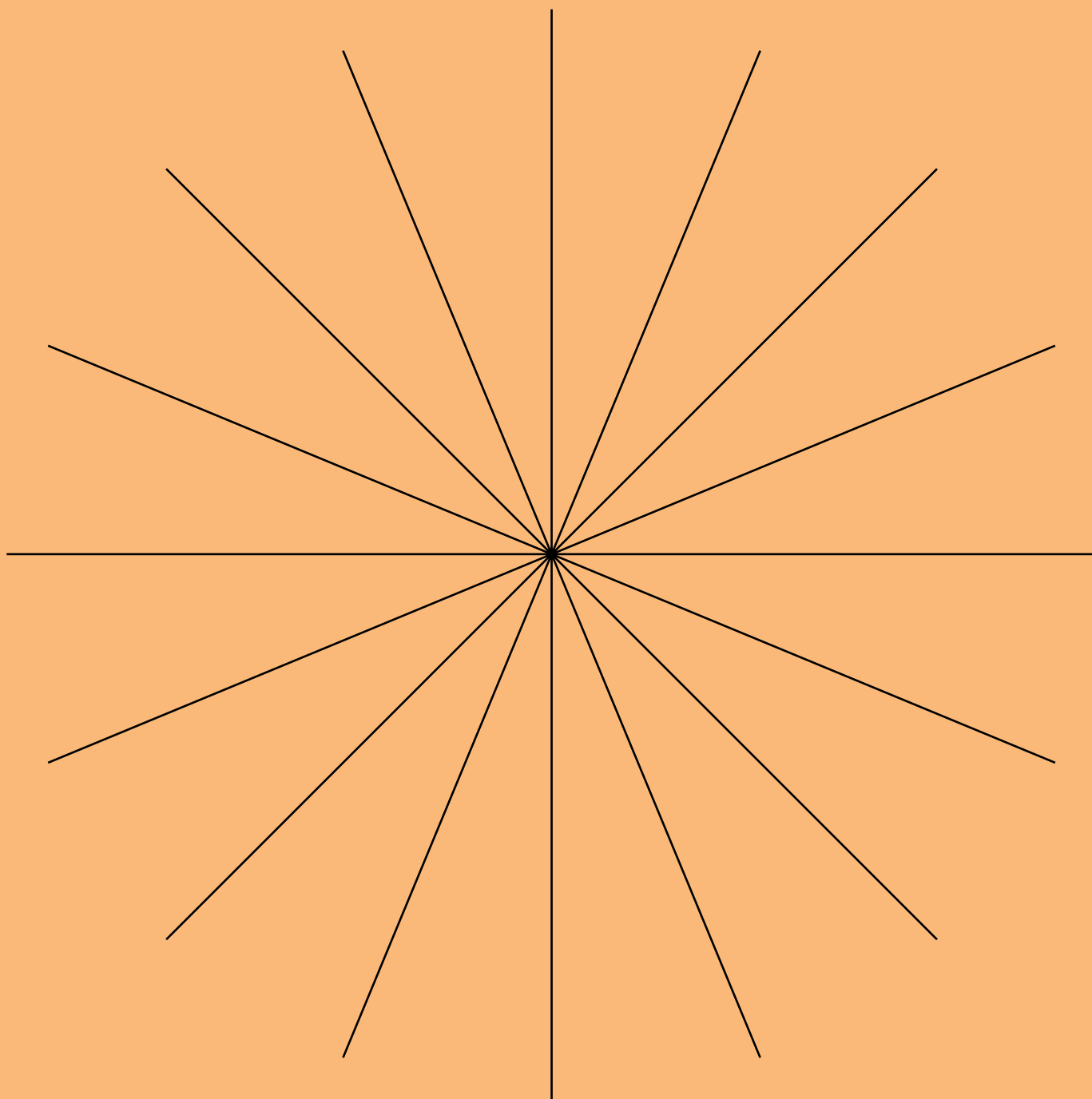
4

Chapter 4 finally tackles the arduous question of monetization. The chapter examines current technological developments that point to changes in VR and AR adoption in the near future and that could yet again force the sector into rethinking trends, practices, and strategies. As the market is constantly redefined and contested, we introduce the MARSHMALLOW LASER FEAST case study and learn from their unique approach in combining a diversity of technologies, platforms, and partnership opportunities.

We conclude by presenting the key learnings and inspirations we have found in the surveys, data analysis, and in-depth interviews conducted in the context of this study and put forward some recommendations and new avenues for investigation.

1 — Forever Young

An Ecosystem in a Constant State of Redefinition



From virtual to extended reality, to immersive projection exhibitions, to artificial intelligence-led narratives, the XR field is constantly changing, pushed by advances in *technology*, as much as by explorations of *storytelling*, changes in *audience reception*, and renewed support for cultural creation and distribution.

As the field remains largely uncharted, this first chapter aims to provide a *useful general overview of current XR market trends*.

We start with a condensed review of quantitative analysis results, gathering numbers on the adoption and commercialization of headsets and head-mounted displays (HMDs), but also highlighting surprising changes in public interest in XR experiences. We continue by considering the shift from at-home to LBE consumption, highlighting recent changes due to COVID-19 lockdowns. Finally, we close with voices and reflections from actors in the independent XR field and point to a shared feeling that new practices are still hard to assess and define.

Case study: The case of Atlas V's distribution arm, Astrea, is presented, since the studio established major precedents around defining independent XR productions and is now continuing to innovate by creating an ambitious XR distribution entity.

Key Learnings

For XR creators	<ul style="list-style-type: none">— An audience ready for a diversity of narrative content.— Greater appreciation of the form and content of XR.— Opportunities for hybrid distribution.
For funders/supporters	<ul style="list-style-type: none">— Recognition of the quality of creative, innovative, and narrative-driven XR content that spans borders.— The need for more inclusion and diversity among creators.— Opportunities to rethink how we assess the success and impact of XR works.
For analysts/pundits	<ul style="list-style-type: none">— At least 68% of Americans have tried VR once.— Changes in the consumer profile.— Changes in public perception of the medium.

1 — Forever Young

An Ecosystem in a Constant State of Redefinition

Immersive media productions, including virtual reality (VR), 360 documentaries, augmented reality (AR), and large light-projection exhibits have quickly expanded in terms of offerings and diversity over the last few years. Since the mid 2010s, immersive media productions have been on the rise and as the public's interest has grown, it has also shown signs of diversification.

Film festivals and art exhibits increasingly review their programming to include XR works, and in particular, they offer new venues for “independent XR” to circulate and be discovered. From at-home VR entertainment to emergent-narrative games, to location-based immersive theatre, to co-created virtual dance experiences and artificial intelligence-led characters, there is an ongoing diversification in terms of formats, tools, and genres among experiences that fall under the broad category of XR.

Amidst this bustling diversity of emerging projects, creators and producers of XR experiences are faced with a changing sector that lacks formal frameworks and mainstreamed parameters to evaluate and assess how best to circulate, distribute, and monetize VR and AR projects. When they need to consider business strategies and sign distribution deals, many continue to draw inspiration from models they previously acquired from the film, television, and video game industries.

However, as the field of XR keeps expanding and reaching new audiences, these older models don't always feel relevant. More information is needed to better understand the strategies that are currently most efficient in this emerging sector, as well as where to invest time, effort, and money to publicize and circulate XR works. Many respondents we have met in the context of our initial qualitative surveys insisted they hoped this report would establish a path—some sort of baseline or template for negotiating deals, signing licences, and planning long-term marketing strategies. However, things aren't that simple.

As stated in our introduction, numbers for headset, software, and hardware sales are easy enough to obtain. They indicate trends and changes in the general penetration of AR and VR tools and reveal which projects sell better on which platforms, but they still don't tell the whole story.

Creators and producers in the independent XR field work hard and take their time to plan business strategies through what still feels like a trial-and-error approach. As many respondents commented, XR—and even more so, independent XR—is still in its early days. To a certain degree, some still feel they need to invest more in creating a market than in marketing a specific product.

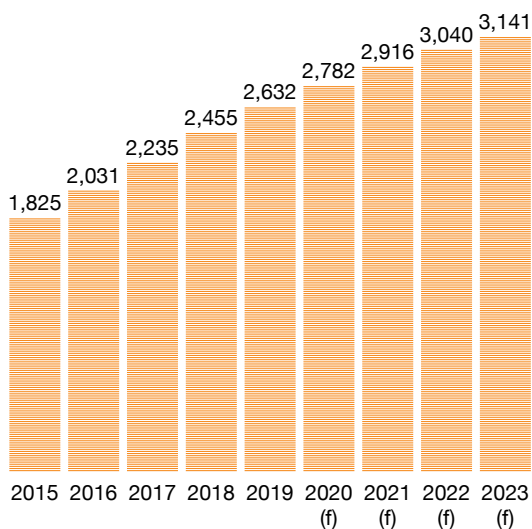
As they explore new practices, sharing sales and numbers for their experimental strategies is not only potentially risky, but can also be quite intimidating. The usual parameters used to evaluate success in television and film—number of single views, price per ticket, and ticket revenues—or the typical numbers gathered from commercial gaming platforms and VR stores (Steam, VIVEPORT, and Meta⁶) often become the only data available for pundits to take stock of the field's growth. Furthermore, experimental successes may very well fall far under the radar.

⁶ In October 2021, Facebook, who had already owned Oculus since 2014, announced its plan to rebrand its different products as “Metaverse,” and rebrand the VR store, projects, and HMD from Oculus Quest to Meta Quest. The website [oculus.com](https://www.oculus.com) still held the Oculus name at the time of this publication, and announced that 2022 would mark a gradual change in all the company's merchandise, applications, and publications to Meta Quest.

In the hopes of giving independent XR makers and distributors better tools to assess, evaluate, and plan circulation and distribution in the new XR landscape, we decided to conduct two local and international market analyses to take stock of current numbers and trends, and to compare and nuance our findings through qualitative surveys and in-depth interviews. The quantitative data presented here was gathered with the support of PHI and Xn Québec.

1.1 — A Quantitative Overview

Digital Video Viewers Worldwide (millions)⁷



Source: eMarketer (February 2020)

⁷ (f) = Forecast

⁸ According to a study conducted by Habo for Xn Québec (2021).

⁹ Nora Nirhamo. "Learnings from the VRX Europe 2019." *Softability* (April 29, 2019). [Link](#)

¹⁰ According to a study conducted by Habo for Xn Québec (2020).

¹¹ ARtillery Intelligence. *VR Global Revenue Forecast 2019–2024* (January 2021). [Link](#)

¹² This research report was reviewed in early 2022. As a side note, there have been many rumours about the release of Apple's first headset, expected to be far more expensive than those of their rivals, which currently cost roughly \$300 to \$900. According to Bloomberg (January 21, 2021), Apple's headset, codenamed "N301," is in the late prototype stage but is not yet finalized, so the company's plans could change or be scrapped entirely before launch. [Link](#)

Since 2016, sales of head-mounted displays (HMD) and VR and AR content have been in constant ascent. Such a peak follows more general trends in digital arts and media consumption—where the Asia region represents more than half of the digital media consumer market, according to a study conducted by PHI.

Quebec and Canada's flair for unique creative experiences also holds a particular reputation. In Quebec alone, the creative digital industry contributes up to Can\$1.2 billion to the local economy. The Quebec digital market demonstrated a surprising growth of 62% in early 2010, four times that of the general cultural sector, and has since continued to grow⁸.

In this digital market, VR and AR consumption holds a smaller, yet growing place. The adoption curve is steadily growing, indicating particular permeation for VR as an increasingly family-oriented media (AR is more of a personal tool, as we'll see next). These findings echo those of research conducted by Softability (Amsterdam) that estimated VR consumption should reach mass adoption for more than 25% of the population by 2023⁹.

A survey conducted by eMarketer in 2020 also noted that 63% of American adults polled answered that they had already tried or felt familiar with virtual reality, while only 48% and 36% respectively stated they were familiar with AR and cloud-based video games. The same study suggested 52.1 million Americans used VR at least once a month in 2020—without specific information on where these uses took place—at home or in location-based settings, such as VR arcades, malls, or cultural venues¹⁰.

If we now analyze the number of headsets (HMD) sold, 2020 saw annual hardware sales flirt with just under 5 million units, for a cumulative install base of 14 million units. In addition, current projections for 2024 predict these sales should reach annual numbers of over 14.3 million units, for a cumulative install base of 34 million headsets sold¹¹.

Market analyst firm Omdia estimates that when combining VR and AR hardware, **6.4 million VR headsets** were sold in 2020—in other words, VR and AR are still not a mainstream media, but are getting increasingly accessible to audiences in particular regions of the world.

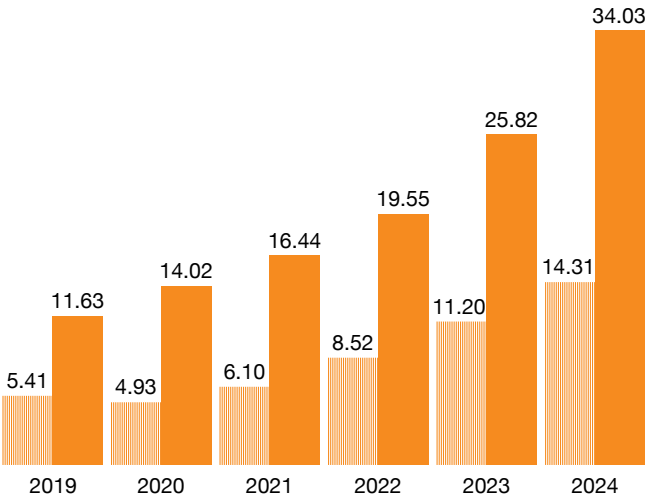
Indeed, it is important to note that hardware and software sales are still very much geographically limited: Most sales occur in Asia, North America, and Europe. Furthermore, hardware manufacturing is not as competitive as one might expect.

In the race for at-home personally owned HMD sales, Oculus (now Meta) has long held the lion's share of the VR headset market, followed by Sony (PSVR), and HTC VIVE. Yet, if PlayStation VR seemed to show the steadiest growth in the last 5 years, analysts considered that Oculus Quest (now Meta Quest) and its future variants would be set to overtake the PlayStation VR market by mid 2022¹². Which raises important concerns, as we'll see, for independent XR makers and producers.

A — VR Hardware Penetration

Unit Sales & Installed Base, Tier 1 & 2*
In Millions of Units

2020's estimated decline is due to COVID-induced supply chain impediments, despite sustained VR demand. Oculus Quest's performance offset declines to a certain degree.



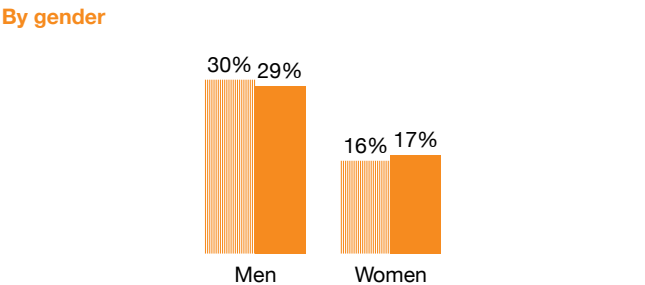
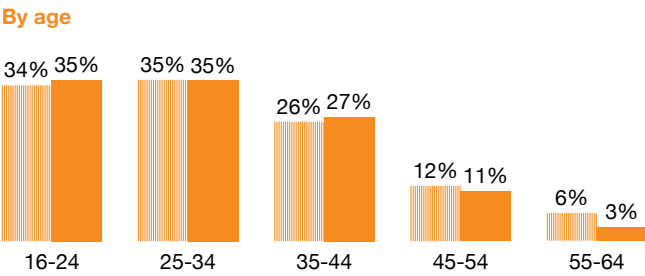
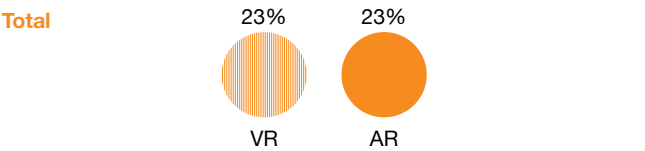
*Tier-1 includes console and PC VR headsets (e.g. PSVR). Tier-2 includes standalone VR headsets (e.g. Oculus Quest). These estimates exclude Tier-3 screenless VR viewers (e.g. Gear VR, Cardboard).

- Annual Units Sales
- Cumulative Installed Base

Source: ARtillery (2020)

B — Engagement with Virtual Reality vs Augmented Reality

% who have used a VR headset / experienced AR in the last month

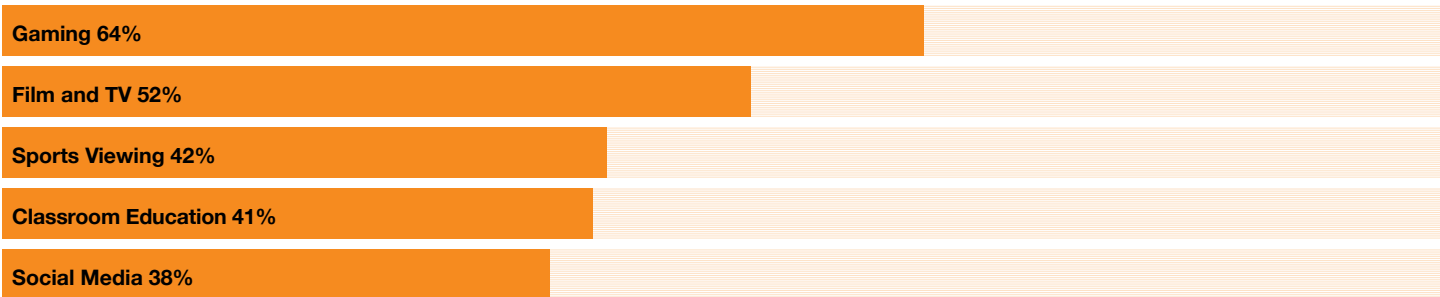


Question: Have you previously used a VR headset? Have you previously experienced augmented reality technology? Yes, in the last month.
Base: 3,938 Internet Users in the UK & U.S. aged 16-64

Source: GlobalWebIndex (2018)

C — Consumer Perceptions of Virtual Reality's Potential

% of VR users who say it has the most exciting potential in the following industries



Question: Where do you think VR has the most exciting potential?
Base: 897 VR users in the UK & U.S. aged 16-64

Source: GlobalWebIndex (2018)

6.4

million VR
headsets sold

\$1.1

billion in content
spending

\$4

billion in content
revenue by 2025

Increase in VR Hardware and Content
Consumption Due to Lockdown

1.2%

Household penetration
in 32 countries

3%

Household penetration
by 2025

Source: Omdia (2021)

Putting hardware aside, platform activities and experience sales have also experienced a steady rise. The Steam platform, for instance, saw over 1.7 million new VR users in 2020 (for a total of 104 million VR sessions), which was associated with a 71% increase in their VR revenues. An interesting sidenote is that users seem to be consuming experiences that are now longer in length—an average of 32 minutes in 2021, which represented a 30% increase compared to 2019¹³.

These numbers are of interest to independent XR makers. Even if Steam has not experienced the breakout success the Quest did in 2020, the platform has nevertheless continued to grow and attract new consumers each year. So far, Steam has also been considered more dedicated to providing a variety of creative, narrative-based content to a more diversified audience. Another point of interest in these numbers is that the general public's demand for content (not just headsets), is also expanding. This is all good news for a budding cultural sector. With users spending more time in experiences and with the numbers of users rising, could this mean more opportunities for independent content makers?

It may also be useful to note that during—and perhaps because of—COVID related lockdowns, market reports for 2020 indicated a sharp increase in the number of standalone VR headsets sold per household¹⁴. For the first time, Oculus (now Meta) saw more demand for the Quest 1 and 2 than it could offer¹⁵. New headset owners are also expected by manufacturers to be eager to try out content. 2020 saw \$1.1 billion in content spending for VR alone. When combining VR with AR, immersive LBE venues, and social VR, XR content revenue is on the rise—with numbers currently expected to reach \$4 billion in 2025, and with 90% of this revenue expected to come from game sales¹⁶.

As promising as these numbers may be, we also need to bear in mind that the same research conducted by Omdia evaluated the household penetration for VR in 2021 at only 1.2% across 32 countries analyzed. In other words, despite inspiring growth in the immersive sector, we can't argue there's been a true mass adoption yet.

To be sure, Omdia does insist these numbers could rise to a solid 3% of household penetration by 2025. However, it nevertheless demonstrates that at-home VR consumption is far from mainstream—it remains accessible to a relative few and remains largely confined to Asia, North America, and Western Europe.

On a slightly more optimistic note, out of the **\$2.7 billion** in 2020 VR **hardware** and **software** sales, there seems to be a more balanced distribution as to who accesses and consumes experiences in VR stores (with men making 64% of store purchases, but women rising as purchasers as well).

As a main takeaway, we should also recall that headsets (or head-mounted displays) have been made increasingly accessible over the last few years. With prices made relatively lower for hardware and software, and broadened and more diversified public interest in immersive, VR, and AR content, one can start to see why XR content funders and investors may feel confident about the sector's growth.

The numbers shared here mostly focus on VR-related sales. It may be useful to note that AR and MR headset numbers are also on the rise. In a 2024 projection, ARtillery suggested that head-mounted AR sales should reach 3.9 million units sold in 2024, with the most popular options expected to be offered by Apple, Microsoft, Google, and RealWear¹⁷.

Furthermore, even if at-home XR entertainment sales are still clearly concentrated in North America, the market is also expanding, now closely followed by Asia (mostly China and Japan) and Western Europe (Germany, the UK, and France)¹⁸.

¹³ Ben Lang. *VR's 2021 Outlook: 14 Indicators in One Place*. Road to VR (February 26, 2021). [Link](#)

¹⁴ Quite remarkably, out of the 6.4 million headsets sold this year alone, 3.3 million were standalones. Omdia estimated 1.2 million units of Oculus Quest devices had been sold by the end of 2020, raising expectations to 5.6 million units sold in 2025.

¹⁵ Some analysis suggested the unbalance was partly created by a major chip shortage, which affected not only the production of HMDs (in this case, the Quest 1 and 2), but also wearable backpacks.

¹⁶ Omdia (2021).

¹⁷ ARtillery Intelligence. *Smart Glasses: The Road to AR's Holy Grail* (January 2021). [Link](#)

¹⁸ See report *Seeing is Believing* (2019) for more details on per-country VR adoption and rankings.

Do these numbers mean monetization for XR content is clearly in reach? While the 2016–2018 market forecast demonstrated a clear exaggeration in projected numbers of VR and AR hardware sold by 2021, it is unquestionable that there has been an actual significant and steady increase in sales of both hardware and projects in the last five years. The combined hardware and software value of VR is currently estimated at \$10 billion for 2025, growing from \$3.2 billion in 2020. On the other hand, the numbers of HMDs sold doesn't provide a detailed picture when trying to understand where there actually is a sustainable demand for XR content, and, most importantly—whether there's an audience.

1.2 — A Gamer's World?

The VR sector in particular has experienced clear growth in the number of experiences accessed by new audiences. A survey from Emerging Tech Brew demonstrated that if 25% of Americans said they had already tried a VR or AR headset¹⁹, a good 66% among that group would definitely try it again. In a way, these reassuring numbers indicate we've passed an important threshold for adoption. VR and AR are no longer gimmicky novelties you would only try once... Also, one can assume this goes hand in hand with increased understanding among the general public of the unique opportunities and affordances this new media form presents (and its expected place in our future daily lives).

However, enthusiasm for VR and satisfaction with the content already provided are not one and the same. Of the previous numbers mentioned in the same study, only 28% of individuals surveyed said they felt excited about the content they had experienced in VR. These findings suggest the uniqueness and quality of the content may attract and maintain user attention, rather than the technology itself. That said, who exactly gets “pulled in”?

A quick overview of consumer profiles helps gauge the expansion of interest for XR content among the general public. The audience for VR is increasingly inter-generational, spanning from younger consumers (under 20) to older ones (over 44). Men still dominate the market for VR hardware and online store purchases, but location-based experiences seem to attract more women (just as museums, theatres, and cultural exhibits also generally attract more women than men).

In parallel, AR experiences and applications usages are seemingly less inter-generational, attracting a clear majority of millennials, followed by a wider segment of 25–44-year-olds. Women and men show similar interest in AR applications (with women users at 54%). Furthermore, in the United States, 67.5 million individuals polled had accessed an AR app in 2020 (an increase of 15% from 2019). It's useful to note that most of these AR application uses are linked to social media (for example, AR filters) and represent a “low-value use” for market analyst reports, with 67% of AR used for social media applications and 47% for pay-per-use games.

Numbers also seem to indicate that if AR permeation moves more quickly than VR (as AR applications often use smartphones, which are already widely used in our daily lives), it is not yet monetized as much as creative, social, or game-driven VR applications²⁰.

¹⁹ Immersive Wire Newsletter (July 11, 2021). See also Ryan Duffy, “Exclusive: Nearly one quarter of Americans have used a VR or AR headset,” *Emerging Tech Brew* (July 7, 2021). [Link](#)

²⁰ The counterexample here could be the unbeaten record of users in the AR experience *Pokémon GO*.

The Rise of a New Consumer Profile

Yet, where numbers now tell a new story—and where we feel there is a unique way to gauge the emergence of a new consumer profile—is in the recent changes in what are considered THE usual thresholds for XR adoption.

A recent longitudinal study on what limits or impedes a user from adopting VR or AR demonstrated that, from 2016 to 2019 inclusively, user experience was the strongest limitation mentioned as a friction point for VR adoption (this could mean hardware clunkiness, discomfort, cybersickness, difficulty navigating menus, difficulty moving in virtual spaces, etc.).

Yet, since 2020, the biggest XR adoption obstacle mentioned by respondents to the same study was no longer user experience, but rather the content—the quality, quantity, and diversity of experiences offered and accessed through VR or AR applications and stores.

Here too, the quantitative analyses conducted offer a useful understanding of how the public's perception of XR is changing. Yet, the most readily available numbers are still largely drawn from online stores and game platform sales—where one can actually purchase a VR or AR experience. The data is therefore prone to demonstrating an inevitable bias toward gamer dominance, since games are what sell in large numbers on said platforms.

Games do sell well. Most of American B2C VR sales are indeed led by games (in more than 50% of use cases explored by the FR//XR Report)²¹. By 2020, 60 of the VR game titles available across the Oculus platform had generated more than \$1 million in revenue (as a comparison, only 35 titles had reached this stage before Quest 2 was launched in October 2020). Among those projects, only six titles (*Beat Saber* being the overwhelming winner²²) had generated more than \$10 million in revenue on the Quest platform.

Among the current trends in XR consumption, games are now closely followed by social VR applications (such as *Rec Room*, *VRChat*, *Horizon Worlds*, etc.)—where users meet others in virtually shared spaces. In addition, recently, VR fitness applications have been on the rise—even more so since COVID-19 lockdown restrictions²³.

The *Rec Room* example:

- The social VR app *Rec Room* has surpassed 1 million monthly active VR users in 2021, making it one of the highest-traffic VR apps so far.
- Daily active VR users are spending an average of 2.7 hours per day in *Rec Room*.
- Quest 2 users made up about half of the 2021 population of *Rec Room*.

Paradoxically, though, numbers don't directly point to gamers always being interested in VR versions of their favourite games. In fact, a study conducted in 2021 by the FR//XR initiative surprisingly highlighted that even if gamers are the most active group on VR stores, VR games are clearly not as popular on these same stores as narrative-led VR experiences²⁴. These results echo similar findings from the research conducted by the PHI for this report, which demonstrated that hardcore gamers who own VR headsets actually seem to prefer accessing the PC or desktop versions of their favourite games, rather than the VR versions when available. Of course, an important distinction to bring up here is that few popular games do have VR counterparts (relative to the rest of the market). In addition, the VR versions may differ sharply from the PC/console versions because of computing demands, platform accommodations, or UX limitations (for instance, playing a character as an avatar in a VR version, versus controlling multiple characters at once in a PC version).

²¹ FR//XR: A Handbook for Immersive Producers (2021), p. 8

²² *Beat Saber*, VR's most popular rhythm game, has sold over four million copies across platforms and over 40 million songs from paid downloadable content (DLC).

²³ According to *Oculus Blog* (February 2, 2021) [Link](#), the fitness app *Supernatural* has seen its subscriptions more than double since Quest 2 started shipping and *FitXR* has traction as a top non-gaming app on the Quest platform with one of the highest retention rates. Weekly active users have grown four times since Quest 2 launched. Sales have increased 535% from a year earlier in the fourth quarter of 2020.

²⁴ FR//XR: A Handbook for Immersive Producers (2021), p. 8

That said, it nevertheless helps to rethink the connection between gamers purchasing headsets and the assumption that they will want to then play games using VR. Rather, these findings could also indicate that when purchasing a headset for the first time, consumers tend to be directed toward games first, but when a hardcore gamer purchases a headset, they may actually prefer using the HMD to access other types of XR content—in particular, social VR applications.

What should we make of this? One element these numbers highlight is the problem of conflating public interest with the number of dollars invested in purchasing a VR experience from a store. To be sure, store data indicates that headset buyers are indeed willing to pay more for games. However, that neither means they'll want to purchase many games, nor that they are satisfied with platforms and stores that offer almost only games.

Stores know they can make more profit by selling games, so games are the first thing offered in a store. That said, audiences aren't necessarily so impressed either with the types of games on offer in these same stores and seem to rather be lured in by more narrative, entertainment, and story-led experiences. The crucial takeaway from the data analyzed is that the audience is evolving and is now looking for experiences that fall outside of the realm of games alone.

New Audiences' Readiness for Independent XR

When an XR audience accesses content that they find surprising, interesting, or of good quality, surveys indicate that these impressions are the factors that tend to make said content stick around longer. Makers and producers of independent XR already know this, as the surveys and in-depth interviews conducted in the context of this report show.

Many of our respondents suggested that the peak in interest they see from visitors at festivals, cultural events, and in media attention, indicates, in their view, a readiness among the public for experiences that are more experimental and narrative led. For producers of independent XR content, this sense of audience readiness is what inspires them to continue producing high-quality content, despite sales that continue to be lower than for games. The long-term goal, as most highlighted, is to establish content and a repertoire.

Yet, there is little data available to assess public interest, outside of sales at ticketed venues or stores. Attendance at venues is easier to count, but the degree of audience interest in projects is usually estimated through awards and jury recognition.

That said, there may be alternate ways to find clues as to what sparks audience interest, through user reviews of projects found on VR stores and platforms. The quantitative study led by PHI for this report demonstrates that out of the 20 highest-rated paid apps, it is no great surprise that games are clearly the only contenders in that list since most people access games, and most rate games.

However, when analyzing the highest-rated paid apps on these stores, we can start to pick out some landmark narrative-led XR experiences amidst the crowd of games.

This is made even more evident when one looks for the highest-rated and most-often-rated free applications on the Quest Store. Here too, we can evaluate an audience's curiosity with more granularity—since these apps are free, they can be considered an indicator of the types of projects an audience is willing to explore and search for. Under these conditions, we find that narrative, documentary, and experimental social-VR theatre experiences are surprisingly popular.

Overview of Quest App Ratings and Rankings

A — Most Rated Paid Oculus Quest Apps

Name	# of Ratings (rating)	Rank Change	Price
Beat Saber	31,055 (4.69)	=	\$30
Vader Immortal: Episode I	10,267 (4.47)	=	\$10
SUPERHOT VR	9,978 (4.76)	=	\$25
Onward	6,637 (4.4)	=	\$25
Job Simulator	5,745 (4.73)	=	\$20
Pistol Whip	5,606 (4.77)	=	\$25
The Walking Dead: Saints & Sinners	4,952 (4.67)	↑ 1	\$40
The Room VR: A Dark Matter	4,546 (4.89)	↑ 2	\$30
Five Nights at Freddy's: Help Wanted	4,492 (4.77)	↓ 2	\$30
POPULATION: ONE	4,491 (4.64)	↑ 2	\$30
Arizona Sunshine	4,024 (4.3)	↓ 2	\$40
The Thrill of the Fight	3,978 (4.81)	↑ 1	\$10
Vader Immortal: Episode III	3,948 (4.55)	↓ 2	\$10
Moss	3,784 (4.83)	↑ 1	\$30
Vader Immortal: Episode II	3,717 (4.17)	↓ 1	\$10
Gun Club VR	3,596 (4.47)	=	\$20
FitXR	3,382 (3.91)	=	\$30
Robo Recall: Unplugged	3,249 (4.55)	=	\$30
Virtual Desktop	2,662 (4.47)	↑ 1	\$20
I Expect You To Die	2,645 (4.81)	↓ 1	\$25

C — Most Rated Free Oculus Quest Apps

Name	# of Ratings (rating)	Rank Change
Rec Room	8,357 (4.54)	=
Echo VR	5,499 (4.7)	=
VRChat	4,164 (3.74)	=
PokerStars VR	3,324 (3.81)	=
Supernatural*	2,056 (4.28)	=
Bigscreen Beta	1,742 (4.07)	=
Epic Roller Coasters	1,578 (3.12)	=
Elixir	1,075 (3.41)	↑ 1
First Steps	1,059 (4.81)	↓ 1
YouTube VR	957 (3.91)	↑ 1
Oculus First Contact	939 (4.7)	↓ 1
The Under Presents	928 (4.42)	=
Bait!	868 (4.12)	=
Netflix	860 (3.21)	=
Mission: ISS	788 (4.18)	=
Oculus TV	710 (2.28)	↑ 2
Bogo	703 (4.4)	↓ 1
Anne Frank House VR	657 (4.59)	↓ 1
AltspaceVR	649 (3.22)	=
The Key	635 (3.94)	=

Source: ROAD TO VR (January 2021)

B — Best Rated Paid Oculus Quest Apps

Name	Rating (# of ratings)	Rank Change	Price
ALTDEUS: Beyond Chronos	4.91 (584)	=	\$40
The Room VR: A Dark Matter	4.89 (4,546)	↑ 1	\$30
Cubism	4.86 (206)	↓ 1	\$10
Moss	4.83 (3,784)	=	\$30
Wolves in the Walls	4.81 (112)	New	\$9
Walkabout Mini Golf	4.81 (1,092)	↑ 1	\$15
The Thrill of the Fight	4.81 (3,978)	↓ 2	\$10
I Expect You To Die	4.81 (2,645)	↓ 2	\$25
Blaston	4.78 (796)	↓ 1	\$10
Five Nights at Freddy's: Help Wanted	4.77 (4,492)	↓ 1	\$30
Pistol Whip	4.77 (5,606)	↓ 1	\$25
In Death: Unchained	4.76 (1,711)	=	\$30
SUPERHOT VR	4.76 (9,978)	↓ 2	\$25
Trover Saves the Universe	4.75 (1,011)	=	\$30
Racket: Nx	4.73 (1,238)	↑ 1	\$20
Until You Fall	4.73 (739)	↑ 1	\$25
Job Simulator	4.73 (5,745)	↑ 1	\$20
Down the Rabbit Hole	4.72 (756)	↓ 5	\$20
Shooty Skies Overdrive	4.72 (184)	↓ 4	\$10
Vacation Simulator	4.71 (1,667)	↓ 1	\$30

D — Best Rated Free Oculus Quest Apps

Name	# of Ratings (rating)	Rank Change
First Steps	4.81 (1,059)	=
First Steps for Quest 2	4.79 (339)	=
Oculus First Contact	4.7 (939)	↑ 1
Echo VR	4.7 (5,499)	↓ 1
Anne Frank House VR	4.59 (657)	=
Home After War	4.58 (104)	New
Kizuna AI – Touch the Beat!	4.57 (257)	New
Rec Room	4.54 (8,357)	↓ 2
NOTES ON BLINDNESS	4.49 (415)	↓ 2
Gravity Sketch	4.48 (395)	New
The Under Presents	4.42 (928)	↓ 3
ecosphere	4.42 (245)	↓ 2
Bogo	4.4 (703)	↓ 4
Dear Angelica	4.4 (162)	↓ 3
Quill Theater	4.35 (239)	↓ 3
Immersed	4.34 (608)	↓ 3
Supernatural*	4.28 (2,056)	↓ 3
Sphere Toon – VR Comic	4.25 (102)	New
Mission: ISS	4.18 (788)	↓ 4
Spatial	4.13 (149)	↓ 2

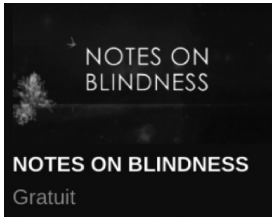
Best Rated Paid Apps



Best Rated Free Apps



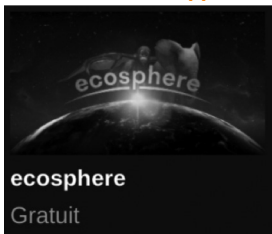
Best Rated Free Apps



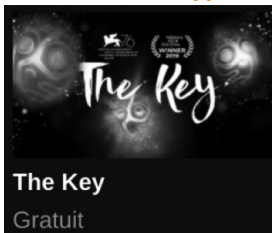
Best Rated Free Apps



Best Rated Free Apps



Most Rated Free Apps



Source: Quantitative Research
Conducted by PHI

When you enter a gaming platform to find a narrative piece, it's very hard to find. [...] You need to know [about] the experience and search for it.

Ricardo Laganaro — ARVORE, São Paulo

These recent changes in what the public appreciates and takes time to rate on major VR stores is another indicator of the parameters that take stock of changes in audience interest and readiness, and that provide more granularity than simply focusing on the number of headsets sold. These new parameters could be re-evaluated to offer the proper tools to market analysts, funding institutions, and XR makers, allowing them to better gauge the current sector for immersive experiences and their relationship to a budding audience.

It is also important to highlight that the data analyzed here points to an added discoverability problem for independent XR. Indeed, when a VR consumer first accesses XR content through a personally owned headset or HMD, it is usually done by accessing a store (by default, that of the headset purchased). Furthermore, as we know, stores mostly focus on advertising games, since they are more profitable to sell. Consequently, games are offered first as readily available content and a store's algorithms will tend to highlight the discoverability of the highest-priced and consequently, most lucrative games. This situation makes it particularly hard for users to navigate a store's independent, documentary, or narrative-led repertoires.

This classification of projects within a store quickly becomes a double-edged sword. New purchasers of VR headsets that don't have a gaming background (and, as we have seen, gamers also strive to find non-game content for VR), have difficulty finding experiences that, ironically, win awards and are publicly recognized for their narrative quality by the festival circuit. This discrepancy between what's on offer (games) and VR purchasers' curiosity about content (which a user may have heard about in the news or experienced at art, festival, or tech venues), creates an additional friction point. Interest in XR content decreases, disappointment in the quality and originality of immersive and interactive experiences increases, and the limited number of games purchased when first accessing the store (and headset) quickly plateaus.

Producers of XR content recognize this limitation. Most respondents interviewed highlighted that they do prioritize festivals and cultural events to ensure broader visibility of their work—ensuring that media and journalists see and talk about it.

We know users need to search for it in the store and it's not easy [...] when you enter a gaming platform to find a narrative piece, it's very hard to find the narrative pieces, because the layout [of the platform] is oriented for games. So, finding a good piece that has good narrative content gets even harder. You need to know [about] the experience and search for it. Ricardo Laganaro — ARVORE, São Paulo

For the last five to six years, it is film festivals and cultural events that have really helped the general public (and in particular, journalists and media) to get a better understanding of the affordances and opportunities of XR tools and platforms.

Such events helped highlight and promote XR projects that don't easily fit within game categories, but rather offered unexpected explorations of VR and AR tools, combining innovative technology and narrative-led experiences in ways that could easily entertain an audience for over five minutes²⁵.

Location-based events (particularly festivals) were the most cited answer from our respondents when asked about what they prioritized for project premieres and showcases. Producers who didn't consider film festivals to be their priority still indicated that 70% of their discoverability efforts targeted festivals, in comparison with 30% for stores and online platforms.

Festivals and cultural venues were also cited by respondents as the sectors where they specifically focused efforts for more independent types of XR work. Also, they were where most respondents suggested that they planned to present future works.

In parallel, the two qualitative surveys conducted in the context of this report helped shed light on what producers of independent XR consider to be a lack of support from online stores and platforms—with a vast majority of independent XR producers responding that, unlike game producers, they never benefited from preferred placement or promotional pushes by VR platforms.

Finally, as some respondents also highlighted, the decision to prioritize cultural venues over stores may not be the most profitable in the short term (while participating in a cultural venue brings almost no revenue to producers, most independent XR experiences available in stores are either free or cost less than \$10). However, this approach definitely seems to bring more benefits and profitability for producers in the long run.

As Antoine Cayrol, a producer at XR powerhouse Atlas V expressed in his interview: "It's a question of credibility. For VR to grow, credibility is essential."

These findings demonstrate how difficult it is to assess the success of an independent XR experience using the usual parameters of hardware and application sales alone. When shown at a variety of festivals or cultural venues, audience attendance numbers at a specific XR project can seem low—especially if evaluated using ticket sales revenues. However, for independent XR producers, it is the appreciation and validation from the cultural sector and the media that helps them establish credibility in the short term for a particular project, and in the long term for XR as an art form within media.

When a project has established a good reputation by being selected for multiple festivals or by being the object of wide public media discussions, it can have repercussions with an audience, as these may be the only projects that users will start to search for in stores and on platforms when they venture out of the realm of gaming. Only then can having an independent XR project on a store start to become profitable through pay-per-use sales.

For VR to grow, credibility is essential.

Antoine Cayrol — Atlas V, Paris

²⁵ One can think of the experience *Henry*. Produced by Oculus Story Studio, this simple narrative animation about a hedgehog having a hard time keeping friends, won an Emmy in 2016, establishing for many a form of validation for this burgeoning art form.

1.3 — Foreseeing the Future for Independent XR: At-Home or Location- Based?

In this particular context, what is the most efficient distribution strategy for producers and makers of independent XR? Should they favour stores, location-based, festivals, cultural venues? Many suggest the response lies in a hybrid approach that targets at-home and location-based entertainment.

Members of the independent XR community are quick to recognize the role festivals and location-based events have played in distribution and discoverability strategies—in particular for independent XR creators.

One can think of landmark experiences such as *Notes on Blindness*, *BattleScar*, *The Key*, as well as the collection of 360 videos produced by Felix & Paul Studios. These experiences are still used today to introduce new consumers to XR, opening gates for how the public defines XR experiences, how an audience perceives the value and opportunities of immersive media, and how it can become a fully expressive art form, etc.

In the last decade, major film festivals have launched digital and emergent-media programming in parallel to their regular offerings. Their role has undoubtedly been key (as it still is today) in establishing an audience's acquired taste for independent XR—one can think of major festivals, such as Sundance, Tribeca, the International Documentary Filmfestival Amsterdam (IDFA), Annecy International Animation Film Festival, Cannes XR, Venice VR, DOK Leipzig, Geneva International Film Festival (GIFF), International Film Festival Rotterdam—and the list keeps on expanding to more film festivals each year.

Dedicated digital arts, interactive media, and immersive VR festivals are also making more room for independent XR projects. One can think of Bergen International Film Festival, BIFAN, CPH:DOX Inter:Active, DOK.fest Munich, Electric Dreams, Encounters Film Festival, NewImages Festival, SILBERSALZ, Stereopsia – World Immersion Forum, VRHAM! Virtual Reality & Arts Festival, and the prestigious Ars Electronica²⁶.

Outside of festivals, LBE venues also show a sharp increase in audience attendance. In 2019 alone, the LBE VR market was estimated at roughly US\$3.6 billion throughout the world, an increase of 44% from 2018. The United States currently holds the top position in the LBE market, with more than 30% of LBE venues and dedicated spaces situated there.

According to a 2020 survey of creators and producers of independent XR (which included VR and AR), 28% of respondents monetized or planned to monetize their VR projects through LBE venues—a sharp increase of 16% when compared with when the same survey was conducted in 2019²⁷. Our own surveys conducted in the context of this study support similar findings.

Additionally, a 2020 Greenlight Insights study revealed that up to 33% of the XR market targeted LBE release for monetization, with an estimated revenue of US\$10.8 billion planned for 2023.

It's true that the independent XR sector has greatly benefitted from this expansion of LBE venues and the number of locations seems to keep growing. In 2020, the number of venues offering access to VR experiences reached more than 14,700 locations worldwide. These spaces were located in over 1,000 cities, and a good chunk (7,000 of them) were inside shopping malls²⁸. Such LBE venues currently also include entertainment centres (39.5%) and standard arcades (38%). In parallel, more unexpected locations and spaces are now also programming independent XR experiences, such as museums, libraries, and VR pop-ups (15.3%).

²⁶ In 2019, *Manic VR*, a Canadian virtual reality experience directed by Kalina Bertin, Sandra Rodriguez, Dpt., and the now-defunct Creative Reality Lab at EyeSteelFilm, made history by winning a Golden Nica at Ars Electronica. This was the first VR experience to ever win the prestigious award at a landmark digital arts festival. It was also the first digital documentary experience to win the award.

²⁷ Multiple sources, including Habo, Perkins-Coie, Blooloop, Greenlight Insights (2019 and 2020).

²⁸ Greenlight Insights (March 2020).

Surely, many of these LBE venues initially offered content inspired by haunted-house concepts or escape rooms, but as festivals and specialized cultural exhibits started to open their doors to more independent content, so did the LBE venues.

We're now even starting to see immersive LBE theatre experiences grow as a sub-industry—one that is still challenging to estimate in accurate market numbers, but that nevertheless is catching audiences' attention.

Secret Cinema, a company who has created landmark recent LBE events and experiences, released its box office numbers not long ago, posting impressive revenues of more than \$10 million for its biggest productions.

These numbers, when combined with estimated gross revenue numbers from immersive theatre's biggest companies (including *Sleep No More's* two global locations, *Then She Fell* in New York, *Immersive Gatsby* in multiple countries in Europe, as well as results from our own survey conducted by PHI), point to a global immersive theatre market valued at more than \$28 million. These numbers are quite surprising since immersive theatre and LBE are still considered "fringe" experiences within the XR sector.

This multiplicity of immersive LBE experiences—whether through projections, domes, VR, or AR arcades—enabled XR to capture an audience's budding attention and seems to have left them wanting for more. The 2020 Immersive Entertainment Industry annual report suggested:

- 89% of respondents attended 3 or more LBE experiences in 2019
- 48% of respondents attended 10 or more LBE experiences in 2019
- 3.7% of respondents attended 50 or more LBE experiences in 2019

As a side note, summer and fall seem to be the most popular seasons for attending such immersive experiences, with a combined 75% of the overall annual attendance falling within that period.

Despite these lofty expectations for XR and clear growing demand over the last few years, the LBE market is still very unstable. The business model for LBE venues feels fragile and hard to grasp, growing in sharp peaks one year and drastically plummeting the next. Most notably, with COVID-19 restrictions and lockdown, while 2020 was expected to be the best year for immersive film festivals and LBE events, everything came crashing down.

The case of The Void is unfortunately emblematic. It was one of the first players in LBE VR and operated more than a dozen VR centres in North America, Europe, Asia, and the Middle East²⁹. In the light of lockdown restrictions, the same company that was being held up as a future model for LBE XR distribution quickly saw the loss of Disney as a key partner. This situation was paired with a major default on loans, forcing The Void to transfer its assets to creditors.

The XR community, however, has proven resilient. As LBE numbers came plummeting down, other XR producers and creators took the opportunity to explore new ways of seeking out and reaching a more diversified audience.

Unique and innovative experimentation, as with the Travis Scott and Diplo shows held in *Fortnite* or the first-ever virtual edition of Burning Man held in 2020³⁰, were looked upon as inspirations for the LBE events that needed to quickly adapt to survive in 2020. Many players learned from these experiences.

For many festivals, for instance, going fully or partially virtual in the face of COVID-19 lockdowns, allowed for important learnings on the need for greater flexibility and adaptability in their audience-outreach strategies. This hybridity-based approach became a clear key to success (if not survival) for many festivals (as the case study of Venice VR Expanded will demonstrate later), but it even forced LBE venues to rethink their role in XR distribution and circulation.

²⁹ Roettgers, Janko, "After loan default and asset transfer, The Void's future looks uncertain," *Protocol* (November 16, 2020). [Link](#)
³⁰ *FRI//XR: A Handbook for Immersive Producers* (2021), p.11

What you're looking for is a trifecta of cost, comfort, and content. And it's getting there.

Amy Lameyer — WXR Fund, San Francisco

Sandbox VR (Void's direct competitor in China), also had to face dire numbers in 2020. Yet, in the new reality under lockdown, it found a chance to reflect on hybrid approaches to offering more diverse XR repertoires, which now include an increased share of independent and narrative-led XR experiences.

Collaboration rather than competition also became paramount for LBE venues to attract audiences with unprecedentedly rich and well-curated offerings. One can think of the collection of over 50 VR projects exhibited at Cannes XR, the programming for which was handled in collaboration with the Tribeca Film Festival.

From our perspective, the willingness of the XR independent sector to find alternatives and establish new collaborative practices, despite LBE and business plans needing to constantly be rethought in light of lockdowns and reopenings, shows a clear sign that the industry is solid. It wants to survive and is ready to evolve to find new audiences and meet their thirst for smart, unique, and innovative content.

What these changes in XR consumption indicate, whether projects are accessed at LBE venues or via specialized stores, is that XR tools and audience interest for narratively rich experiences are finally starting to converge.

All these explorations teach us important lessons about planning future hybrid XR events. COVID-19 restrictions forced the industry to consider LBE's validity and unique offering, while also forcing LBE venues to evaluate alternate, more customer-focused approaches.

The result has been increased interest in hybrid approaches that deliver unique, curated content to a public seeking new experiences. Despite the realities of COVID-19 lockdowns, many XR companies and venues have broken ground with new business models catching hold.

With growth occurring simultaneously in XR hardware, VR and AR content, VR stores, LBE ticket sales, hybrid venues attendance, and more, we can only expect that demand for quality content will also continue to grow.

This is clearly understood as an opportunity by the makers, producers, and distributors of XR content we interviewed in the context of this study. Although numbers and data don't offer proof of short-term sustainable monetization, many still feel confident that it's all just a question of time. Furthermore, as they patiently await the moment when XR will shine, they are testing out and experimenting with hybrid distribution models, gauging which approach seems to match best with which audience.

In this context, the curation of independent XR content becomes a skill of its own and the feel and expertise for finding innovative and quality XR is not lost on the builders of this ecosystem.

1.4 — From the Community: It's Complicated

To take stock of the changing needs and realities of our community, we first wanted to test some of our initial data findings and see how they were interpreted by independent XR makers and distributors.

Our goal was to get a better sense of how the numbers reflected the daily activities and decisions made by actors in the independent XR field. We wanted to see how they prioritized, spoke about, and thought of these pressing issues—how they felt their needs and realities were or weren't reflected in the numbers.

With this objective in mind, our research team conducted two series of qualitative surveys with a limited but representative number of individuals (40 in total). Out of these, there were 23 producers, 4 distributors, and 15 XR festival directors. It is also useful to note that most respondents in the surveys were located in North America, Western Europe, and that there was only one respondent in Asia. It was no great surprise that one of the major challenges identified by the survey was the difficulty producers found in planning and defining any long-term business plan.

In reality, it seems that flexibility and the capacity to quickly change one's offerings have become clear essentials for survival. This necessity to remain agile is seldom assessed by usual parameters used by private or public funders, as they look for ways to ensure and assess that an experience or a distribution strategy can deliver the expected numbers. In contrast, for the independent XR community, flexibility in one's offerings, experiences, and business plan seems like the only way forward to survive in this nascent sector.

Many respondents in our surveys even specifically noted they had difficulty identifying the role they felt they played in the current VR/AR ecosystem—producers simultaneously act as promoters, distributors, head- and talent-hunters, and increasingly as curators.

It is easier to understand this need for high adaptability when we see how small most XR productions or distribution companies actually are (if a few have over 60 employees, the majority have fewer than 10)—and as in any small- or medium-sized business, one becomes a jack of all trades.

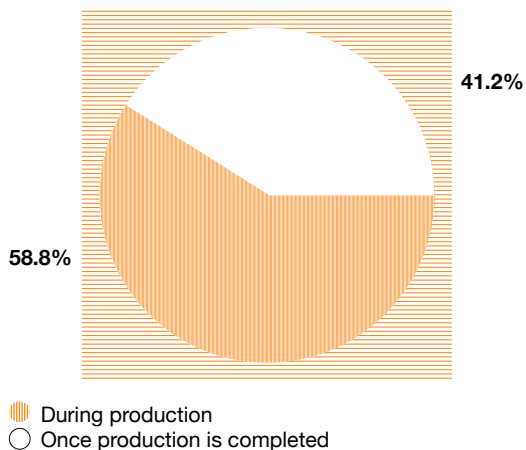
This reality impacts distribution strategies. When a team is small, XR production companies will rarely choose to hire an in-house employee or employees dedicated to marketing and distribution. Instead, many respondents rely on consultants to plan launches and circulation for XR content, or simply plan distribution on their own. Only 35% of respondents said they actually worked on and created deals with distributors to circulate their work.

Out of all the respondents, only the bigger companies (those with more than 80 employees) estimated that over 51% of their budgets were spent on marketing and distribution. Many respondents did allocate a smaller but still representative sum (about 10%) of their yearly budgets to the promotion and distribution of their projects. Agreements with distributors (or distribution platforms), when made, offered no minimum guarantees (in 77% of cases). For most, such agreements were made during or after a production was completed (in 58% of cases). However, discussions with distributors nevertheless seemed to start as early as the development, and even ideation, processes themselves.

When we look at some of the recent success stories in independent XR, it is often the production team's ability to establish partnerships with locations, venues (museums and festivals), and even distribution platforms—before or during the start of development or R&D phases—that seems to play a key role. This enables teams to simultaneously grasp the technical specificities of a location, its realities in terms of public

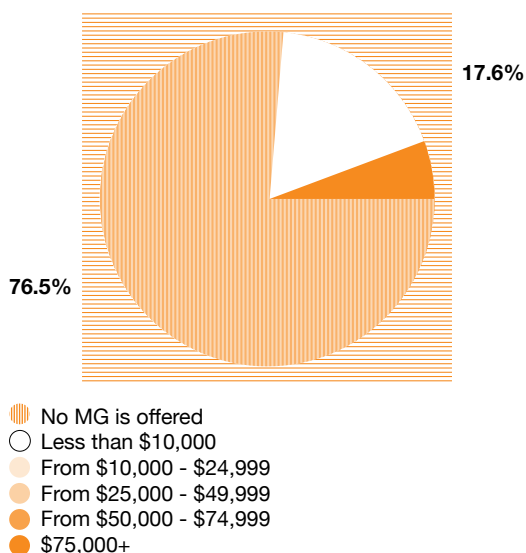
When Working with Distributors, When Is Their Commitment Confirmed?

17 responses

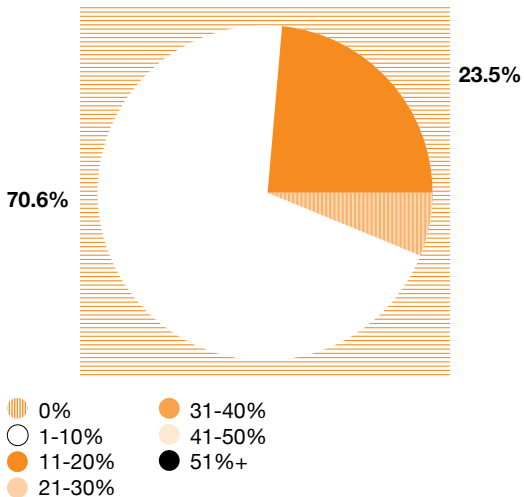


When Working with Distributors, Is an Advance Payment / Minimum Guarantee (MG) Part of the Deal?

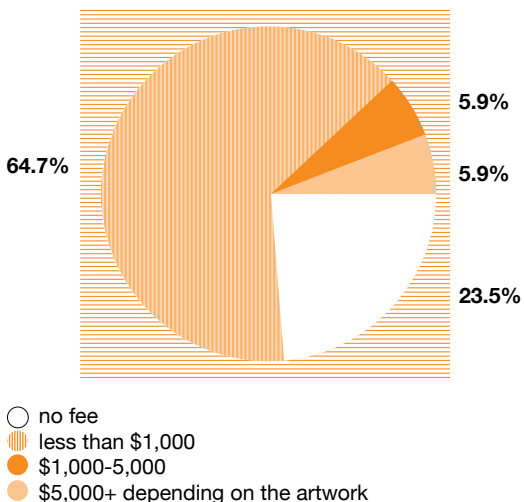
17 responses



On Average, What Percentage of Your Production Budget Goes to Marketing and Promotional Expenses?
17 responses



Do You Offer Compensation to Artists to Present Their Artwork?
17 responses



Source: Quantitative Research Conducted by PHI

31 In 2021, Facebook announced the launch of the App Lab—the suggested goal of this was that, while the Quest Store was expected to remain curated at the same high level of quality (read here, curating mostly games at higher prices), the App Lab was presented as allowing developers to get their apps directly to their community, even while they were in early development, and even when aimed at a unique audience. Source: Venture Beat (February 2, 2021) [Link](#) [Oculus App Lab](#)

circulation, what a space enables for a particular type of visibility and adapt the XR work to both the venue and the clientele it attracts.

In a similar manner, respondents insisted on the importance of planning with particular festivals and LBE venues in mind, even when agreements and deals haven't been signed. For instance, some would create with Sundance, IDFA, or Tribeca in mind, hoping for a premiere at these major festivals, and then follow up with adapted circulation to LBE venues.

In a way, we have concluded that planning for specific LBE venues is still paramount for independent XR makers and producers. That said, these venues do not support monetization, even if (in most cases) it means out of pocket spendings for producers!

Among the festival respondents surveyed, many hold more than 20 VR or AR experiences during their yearly programming. Events usually last between 5 and 14 days (for 88%), and they take pride in identifying quality content, as well as instances of technical innovation. Curation is highly competitive and the goal is to create programs of selected projects that are strong enough to attract visitors for more than a week.

Among the festival directors polled in this study, a majority felt that XR creators and producers benefited from being exposed at their events. Yet, they recognized themselves that the producers often offset these costs themselves.

Most festivals (94%) were also reliant on public funding as a first source of funding, followed by ticketing (71%) and sponsorship (64%). To attract new audiences, 23% remain free to the public. For others (53%), the festival itself may not be free, but XR content is. Considering this reality, if almost 76.5% of respondents say they do pay artists or producers to showcase their work, compensation is still rather limited:

- 23.5% offered no compensation
- 64.7% offered compensation of less than \$1,000
- 5.9% offered compensation between \$1,000 and \$5,000
- 5.9% offered compensation of more than \$5,000

Paradoxically, XR installations presented at festivals are the costliest for XR producers, but also what attract the biggest audiences to XR LBE venues. This can make producers wonder who really benefits from exposure for their work.

Yet, despite all these limitations, festivals remain, for 100% of our respondents, the first place targeted for circulation of independent XR works. As one of our respondents puts it: "Revenue from LBE is essential to both our business and the visibility of our project."

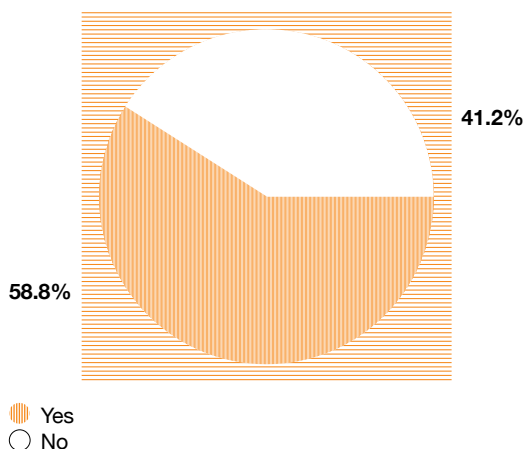
Of course, stores and platforms are also considered necessities or at least, contending distribution priorities. Yet, producers of independent XR content seem to understand that stores are not where they should be investing their top effort. Many of them identified dangers and pitfalls they felt were associated with the unreliability of platforms such as Oculus (now Meta) in terms of how their algorithms push content forward (for instance, lucrative games) and clearly bury others amidst a list of inaccessible experiences³¹.

In our in-depth interviews, some respondents highlighted the importance of embracing long-term strategies with online platforms. However, when they do take that path, it sounds more like a pious wish than part of a clear distribution plan. As a respondent suggested: "For festivals, a lot of distribution relies on exclusivity, and if you have already given your rights to a store, it becomes really hard to get discovered."

If you have already given your rights to a store, it becomes really hard to get discovered.

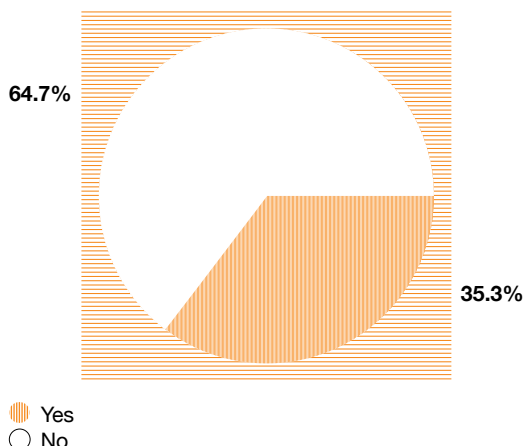
Have You Established a Direct Relationship with VR Platforms?

17 responses



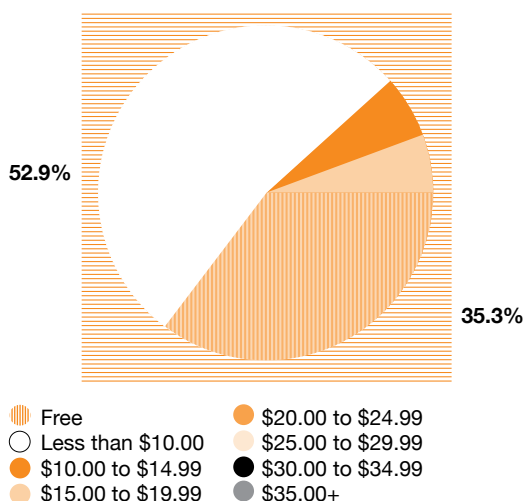
Did You Ever Benefit from Preferred Placement Or Promotional Push by VR Platforms?

17 responses



What's the Usual Price Point for Your Works on a VR Platform?

17 responses



Source: Quantitative Research Conducted by PHI

For many, though, hybridity emerges as the only viable solution. As one respondent indicated: “We have three internal-IP XR projects at the moment, all of which have a combination of LBE, linear outputs, and online sales as integral to their business models.”

Overall, we gather from our interviews and polls that there is real confusion among respondents as to how to define circulation strategies. As we posed questions to the community about their own practices, many had questions for us of their own: “Can you make your money from ticketing or sponsorship?” “Should I define our work as artwork so it can be evaluated in the number of venues it was presented at?” “Shall it be calculated as ticket sales?” “What kind of marketing do others do around LBE and museum venues?”

Respondents wanted to hear from others, highlighting the need for more dialogue. The situation is obviously complex and creators and producers of XR content need to constantly reconsider their distribution plans and monetizing strategies. In this context, if some respondents shared numbers readily, many seemed hesitant to do so, and questioned their relevance in really helping to understand the realities of the field. Mostly, they wanted to know what others were doing, assessing, and calculating.

It quickly becomes clear that there is a lack of models and reference points for producers, distributors, and festivals that could guide them in defining their preferences and approaches for circulation and distributing XR.

Better put, producers of independent XR do what they think will work best for a particular project, adapting their strategy to what is technologically possible at the time of a planned release. They gauge as-yet-unreleased technology as a way to stay at the forefront of demand and change distribution models based the trends at any particular moment. They learn from each other, compare practices and funding strategies, and keep adapting and inventing new ways of financing their projects.

Even if they can't seem to base their distribution plans on anything solid, they definitely learn to become flexible and adaptable—a skill in high demand in today's shifting landscape.

1.5 — Key Learnings and Recommen- dations: Staying Flexible and Adaptable

These changes help foresee a unique perspective for independent XR. Hardware and content prices are falling. Barriers to entry are becoming minimal, with no PC or console to purchase for a standalone HMD. The equipment is lighter and easier to navigate, with a more intuitive UX. That said, the audience is also pickier—and thirsty for well-conceived, original, high-quality narrative-led experiences (whether in documentaries or fiction). In other words, the public is ready, curious, interested, and diversified.

The producers and distributors interviewed in the context of this study are all equipped with wide and varied experience in digital creation. They come from the movie, animation, music, and theatre-distribution sectors.

As they navigate complex and uncharted waters, collaboration becomes more important than competition: They learn from each other, look out for trial-and-error lessons and success stories.

In these last two years of the pandemic, many have insisted that even if most XR content producers and distributors were able to survive, it may very well be because of the unique multidisciplinary and adaptability of the members of this community.

Producers and festivals in particular juggle many roles and titles:

It's hard to define what I do. I'm kind of a weird hodgepodge between an arts organization administrator, a producer, and a little bit of a distributor. That's why in my business, my job title is co-founder, because I literally don't know what else to call myself with my eclectic work. **Ingrid Kopp — Electric South, Cape Town**

Even when producers collaborate with spaces and museums that can provide them knowledge and data about their audiences, circulation, and promotional best practices, early and constant communication is key. This is the only way to match expectations from both sides and work hand in hand for both content co-creation and distribution. We also noted that when producers start to team up with exhibitors, distributors, and curators early on, there seems to be a greater emergence of new deal and agreement formats.

We felt it important, as a first step, to remain open to this diversity of approaches and beliefs by exploring the many ways of assessing and managing the key issues at stake here.

A recommendation for funders and market analysts would be to open regular dialogue with key players and partners in the XR sector. Many of them already collaborate freely. Respondents in this study even used the word “co-ompetition,” which can be explained as such: For this nascent market to become sustainable, future competitors first need to cooperate.

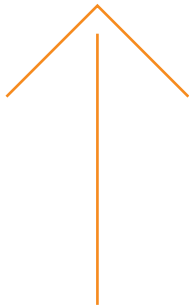
Another important recommendation would be to offer specialized support for the distribution of independent XR. Although many countries already offer private and public funds specifically targeted at innovative creative XR content, there are no available funds to support the distribution of immersive content and, in particular, of LBEs.

These costs generally need to be covered by the museum, festival, or a sponsor. In addition, as we have seen, in many cases the sums allocated by LBEs are so small that producers end up investing their own money; taking care of the creation, production, and delivery; as well as even the exhibition and distribution, all simultaneously... In other words, they become jack-of-all-trades entrepreneurs, and develop sustainable distribution models for their portfolios.

It seems that this sector truly embraces and believes the strengths that come with diversity—in terms of backgrounds, practices, strategies, and reference models.

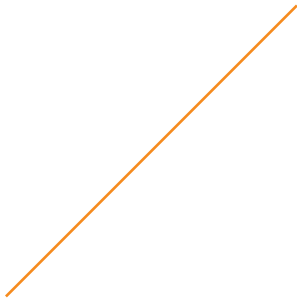
Making independent XR experiences sustainable and commercially viable remains a legitimate concern. In addition, even if XR interest has increased among the general public, it hasn't hit the mainstream yet. In this context, how are professionals, producers, makers, distributors, and exhibitors considering or striving to support a sustainable ecosystem? How do creators perceive the need for profitability? What encourages the creation and promotion of this type of content?

Sometimes, it's critical to look ahead to the player of tomorrow. Next up is a case study of Atlas V, which has recently launched a distribution-focused subsidiary called Astrea. Antoine Cayrol, co-founder and producer for the French XR powerhouse, has been publicly outspoken on the importance of collaboration and reinventing one's own role in a changing sector—in Astrea's case, this meant going from producers to distributors, and now curators.



Growth

- Projections of growth felt unanimous, although opinions differed on the timing and nature of the tipping point.
- More growth expected for AR than VR.
- Short-term opportunities are expected more in gaming and service-providing sectors, but long-term opportunities are expected in new forms of entertainment and expressive media.



Competition

- Fragmentation of offerings, despite the quasi-monopolistic presence of tech giants, because those giants don't specialize in content creation.
- Consolidation and specialization of offerings, content, and distribution roles.



Assessing Factors for Success

Content and user experience are at the heart of any current XR success.

- Many consider originality, narrative quality, and user experience as the make-or-break factors that ensure an XR project's success.
- Collaboration between the various levels of creation, production, distribution, and LBEs or stores is key, and should start at the development stage.
- Flexibility and adaptability are factors that are hard to assess, but they nevertheless remain the most quoted and needed skills in today's landscape.

1.6 — A Case Study: Atlas V and Astrea

Antoine Cayrol, the co-founder and CEO of Atlas V (France), met Monique Simard, who was assisted by Philippe Bédard, as part of the 19 in-depth interviews conducted in the context of this study.

The case of Atlas V seemed a strong example of how a company could navigate troubled waters and establish models for newcomers in a rather short timeframe. Among their successful projects are *Spheres*, *BattleScar*, *Gloomy Eyes*, *Vestige*, and more.

In particular, the case of *Spheres* is a compelling success story that allows for a better understanding of the current market. At the very least, the title is likely the most cited example of XR content that lifted the “ceiling of doubt” on the potential monetization of that sector. *Spheres* is a three-part VR series executive produced by Darren Aronofsky that was purchased at Sundance for around US\$1.4 million after only showcasing a first short 13-minute chapter, which was narrated by Jessica Chastain. Granted, the sum was not much by Hollywood standards, but it nevertheless represented the largest VR purchase ever made at Sundance. It has also seemed to establish for many, a vision of how VR could become profitable (if not simply monetizable).

We met with Cayrol as Atlas V was preparing to launch a sister distribution company for creative XR content, called Astrea.

Atlas V was created in 2017 as a VR production studio. The company has since grown thanks to its constant stream of high-quality award-winning content, and has recently set up a subsidiary company, Albyon, that specializes in VFX and real-time production. More recently, as of 2021, the Atlas V team launched *Astrea*, a distribution company that works with other producers to publish and distribute VR experiences around the world.

MS

As an independent producer, how do you see the evolution of independent XR? How do people perceive the environment?

AC

If we go back to the very beginning—that is, when Facebook bought Oculus—Mark Zuckerberg said at the first conference in 2016: “Be patient, it’s going to take 10 years to work. It won’t go any faster than that.” Despite this, many people decided to forget this warning and invest massively in this new VR market, hoping for a quick return on investment.

So, there was a first period of enthusiasm where things happened quickly. This honeymoon period lasted three years.

The initial craze gave way to a second wave, which is the one we are in right now, a wave of disillusionment that should end soon. We see this disillusionment in the comments of those who say, “no one is watching VR projects, [they do] not make money, people are not equipped, new technologies take too long to develop.” It’s this mentality that has led to a slowdown in the sector and the closure of several studios. This period has also been marked by a kind of disillusionment that has made it harder to fund projects. Far fewer people were funding new productions because they were thinking that “it’s not going as fast as expected.”

But in fact, it’s going exactly as planned! People who are in it for the long run know this very well. You have to be patient, since it might take 10 years, as Zuckerberg said at the time.

Cayrol’s unique way of planning for the long term is one of the echoes we’ve heard the most from the respondents in this study.

Yet, proving that the strategy works is hard to do in the short term. Furthermore, many producers who rely on public funding need to show positive, short-term numbers to receive more funding for new projects. As he highlights, the danger

for many independent XR makers is to get stuck in a project-financed market. We need to look beyond that. Cayrol remains optimistic:

AC

We are at the beginning of a new, more constructive phase that will be marked by the arrival of many more devices. Several companies in Asia are releasing headsets (Huawei, Pico, etc.) and we should also see members of the GAFA launch their own hardware. [...] This is what will bring us into a third phase where investors will return. I am convinced that this third phase will be even more interesting and better funded than the very first.

MS

How have these different phases affected your business practices?

AC

The choice of project has sometimes been influenced, but it is mainly the way productions are planned that has changed. We are fortunate to be part of a country (France) with generous public funding for audiovisual productions. This funding is sometimes slower, but it creates jobs, value, catalogue, and heritage in these countries (France, Canada, etc.). When private investment slowed down in the second phase, we were able to count on these more traditional funding strategies: international co-production, applying to several parallel funds (in Luxembourg, the CMF, the CNC, the tax shelter in Belgium, etc.).

In other words, we had to look for sources of funding that are not sensitive to the ups and downs and that are rather there to fund culture.

Interestingly, Cayrol highlights the importance of collaboration in order to increase sources of funding. Which also means not being afraid to share multiple logos as co-owners of a project's IP.

As Cayrol suggests, many countries, like France and Canada, have public funding for projects. Yet funds are also rather limited. For Cayrol: "In a way, finding financing with others is not only a way to make sure we can tap together more public funds available, but also a way to share risks." A strategy that seems to have worked wonders for Atlas's productions. *BattleScar*, for instance, has four different producers, combining public funding sources with three private funding sources not usually seen together: YouTube, RYOT, and Arte.

AC

At the moment, we are in a phase where it takes longer to fund projects. What is likely to happen in this third wave where private investment will return, is that we will have to change the way we choose the projects we produce, to invest in projects that will meet market expectations. However, I don't consider "independent production" and "mainstream market" to be mutually exclusive; I am of the opinion that we can do things, aimed at a large audience, which are still of independent quality. Only, if we imagine a stronger market with a robust audience, then auteur-driven productions can return.

When the market is there, there is room for everyone. For now, the market is not there yet; it is under construction. In the meantime, we will prioritize editorial choices that are a little more mainstream than what we have done in the past and what we might do again in the future.

This response by Cayrol is bluntly honest. Atlas V was clearly put on the map by launching surprising and original independent content in high-visibility festivals, including Sundance and Tribeca. As Cayrol has stated in many other interviews, for independent XR, it is the "where" and "how" of an experience's premiere launch that becomes really important. Where are the awards, where are the ceremonies, what are premiere requirements and how can you overcome such requirements with a hybrid store approach combined with LBE, the festival circuit, and alternate museum or exhibition spaces?

As the market has evolved, Atlas has also become more mainstream. Sometimes even being called “blockbuster” VR makers. In addition, the partners they gather around a project are clearly diverse, but also increasingly unrelated to independent content (one can think of Meta, Steam, or YouTube).

This readiness to collaborate with a variety of players has forced Atlas to also rethink its strategy for prioritizing some formats over others: “If a maker comes to see us and [insists they are] only interested in VR, we probably won’t support that project,” says Cayrol.

This approach seems to echo that of others in the industry. Felix & Paul Studios, for instance, also thinks of their projects in distribution terms first—thinking of how a 360 video as much as a wide-scale exhibit can be parsed into smaller assets—as videos shared on YouTube; as 360 films distributed in domes; for online educational material, XR exhibit spaces, etc.³²

MS

How do you manage distribution? Do you do it internally or do you entrust the responsibility to an external company?

AC

At first, we gave out a few mandates, but it wasn’t always done very well. This is what led us to create our own distribution company, Astrea. At the moment, we already have a lot of mandates. It all started with the Atlas V catalogue, but we also broadened our horizons to include catalogues from other studios. For the moment, we have been entrusted with about 15 projects, in addition to the Atlas V catalogue.

One of the things we are prioritizing at the moment is localizing projects to ease their international distribution. We are on the verge of making our first releases in Japan, Korea, etc. We also managed to sign agreements for exhibitions in China and Korea. They are sometimes small exhibitions, but they offer us a lot of visibility. It is important to make yourself known to the public and to make your brand known! We also take care of the festivals, but we now ask that they pay us a minimum fee, especially when it is not one of the big three (Tribeca, Venice, Sundance).

We also sign agreements to distribute projects on major platforms (Oculus, Steam, etc.). Even these amounts, which are sometimes small, add up quickly across the different territories. What’s more, it gives visibility.

In the long-term perspective, Atlas V and Astrea want to be the first immersive group to become a one-stop shop for VR: “We want to finance, create, produce, and distribute.” Their strategy is to diversify, develop and maintain their own IP. However, most importantly—and what seems to return as a mantra in Cayrol’s discourse—is the importance of visibility: Being seen means you are on people’s radar once they are willing to invest, and you are on a budding audience’s radar when they acquire hardware.

As Cayrol notes, LBEs were important to first establishing Atlas V’s reputation, but they currently only make up 10% of the company’s revenues. Today, Atlas is focused on publishing—a main challenge identified by Cayrol: “We publish on video game platforms, but we don’t do video games. Our main challenge is to find the right audience, make sales, and do great marketing on these platforms to reach the audience.”

³² The example of *THE INFINITE* project (2021), a multisensory and interactive virtual reality experience aboard the International Space Station, produced by Felix & Paul Studios, PHI, and Times Studio comes to mind here.

You have to get closer to the public. This is what we want to develop with Astrea. Publish the works of partners, invest in marketing, localization, get closer to the final audience and the buyer.

Antoine Cayrol — Atlas V, Paris

- MS** **While waiting for this third phase of recovery that you described earlier, do you think that there will have to be technical improvements in order to build a larger audience?**
- AC Of course! But more than the device, there will also have to be ancillary improvements. For example, streaming is likely to be increasingly important. Also, I believe there could be big upheavals if PlayStation and Xbox invested more seriously in the market. If these companies that already have tens of millions of consoles in the hands of the public sent them a free headset, the user base would suddenly be huge. People already own these consoles, so headsets are only a small part of the equation on top of that.
- MS** **Do you think that this audience, oriented toward video games as it is, is less likely to be interested in the independent works we produce in the field?**
- AC Not necessarily. First off, gamers have families who don't just consume video games. I also think gamers take breaks from their games and they also consume other types of content. Additionally, I think that today's gamers are people who love—and have the time—to indulge in leisure, at least more than 40 years ago. They are also the ones who already know the platforms and the hardware. They are the ones who, at first, will invest in this market and they are also the ones who will buy author-driven content.
- Let's take *Gloomy Eyes* as an example: It was gamers who bought the Quest and bought the project, not necessarily cinephiles. Obviously, the profits generated by video games will remain well beyond those of our independent content, but we shouldn't overlook this market.
- MS** **Should we adapt our strategies to address this type of audience?**
- AC Absolutely! For example, one of the most important lessons we have learned from distributing our works on these platforms is that this audience consumes a lot of content, but they never buy something upon release, and especially never at full price. They usually wait until there are sales a few months after release—they wait until the content is at a 40% discount. It is this kind of mentality that we must get to know and adapt to. You have to plan for slightly more expensive releases and know that this audience will wait for the summer or holiday sales to buy the project at a discount; that's when the project will sell more.
- We must adapt to this way of speaking to these people who, let us remember, are not opposed to artistic or narrative content. On the other hand, they have habits of their own. It is not up to them to change their habits; it is up to us to change ours.

In terms of the format of the works, what do you think of the future of projects with or without an installation portion?

I am of the opinion that in the future there will be more physical venues dedicated to XR exhibitions. In fact, we are launching the PERROTIN VR – Narrative Experience space in October 2021. Associated with the Perrotin Gallery, in the heart of Paris, the space launches on October 19 with four productions at the crossroads of art and immersive technologies.

I believe that there will always be a place for installation works, but I also think that they will most likely be tied to commissions or thematic exhibitions, for example for natural history museums. It would be difficult to design a project produced with an installation that would not be planned for a particular place, without knowing the technical constraints, the conditions of the place that will host it, etc.

There are also location-based spaces, for example in shopping centres. At the moment, if we look at what is happening in China, video games are put front and centre. I believe that this kind of space will always have its place, especially by proposing things that people will not be able to do at home (haptic or neural interfaces, etc.). On the other hand, I don't have the impression that many of these LBEs are going to want narrative content, at least for now. Some of them take the opposite bet, like Dreamscape, but the question of profitability still arises, especially in the case of short narrative content without replayability. [...]

We have also begun to take an interest in what we call “immersive without helmets.” As long as you know how to write and design immersive experiences, why limit yourself to headsets? Why not also consider these immersive spaces without helmets? I have tremendous faith in these spaces that stand out from the traditional model of virtual reality (with a headset).

Cayrol, and more generally, Atlas's flair for adapting to emerging market strategies, has proven beneficial. The company has seen changes in its signature (going from independent XR to more mainstream XR), it has seen changes in its roles (from producers to distributors), and changes in partners and distribution strategies. This doesn't necessarily mean selling Atlas V's soul, as Cayrol sees it, but rather diversifying an IP: “For a market so small, we need to prioritize our assets as much as our IP.”

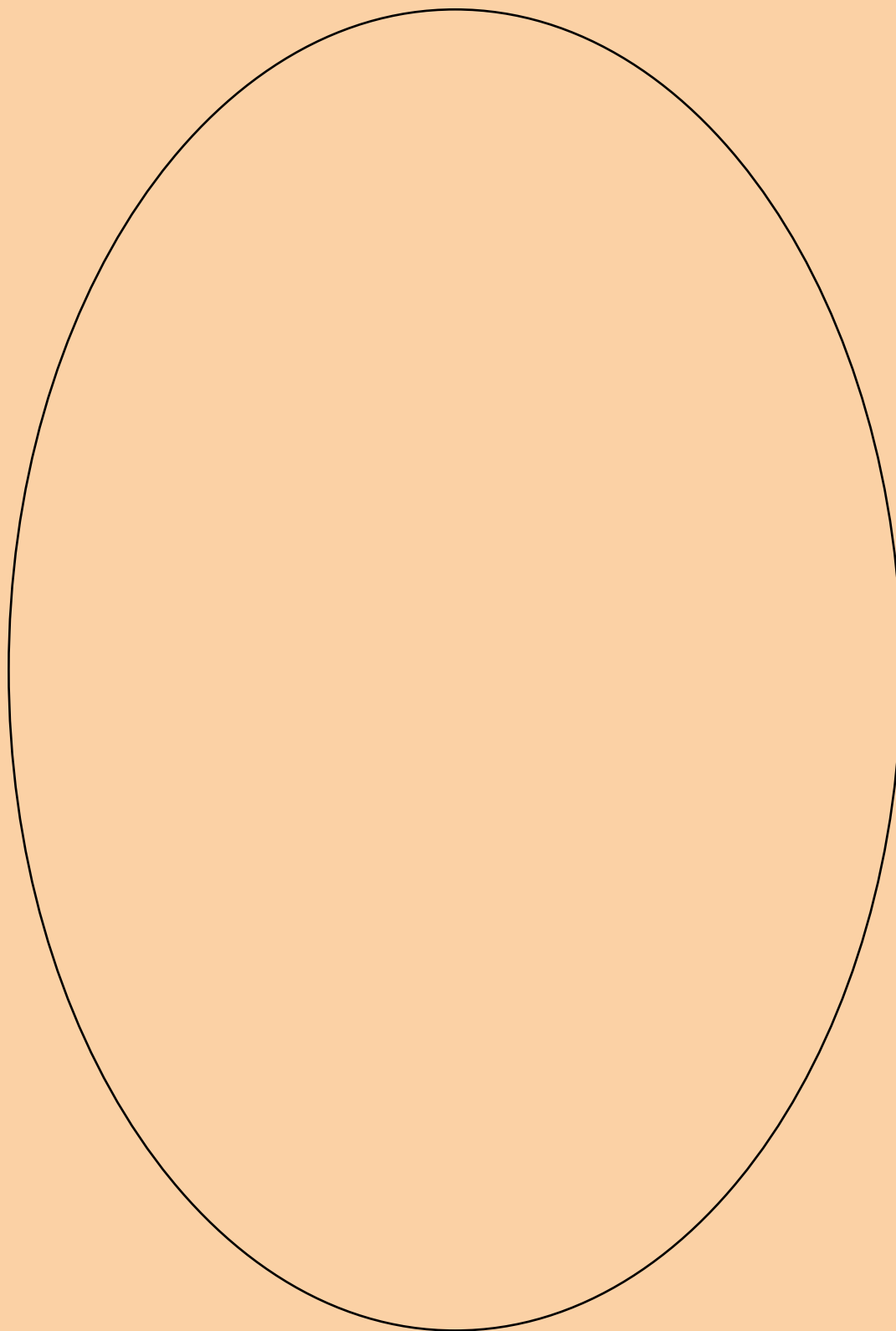
Cayrol believes in patience: He suggests it has become important for producers and creators of emergent media to be able to convince new funders, rather than constantly chasing already existing (yet diminishing) funds. Cayrol insists on making sure we remember the long-term objective: “Even when they say no... I constantly try to keep in touch with them. I knock on their door. Even if it's six months later. I want to be the first there, when they'll change their mind and say yes—we're ready.” As we've seen, many are indeed now finally ready.

I am of the opinion that in the future, there will be more physical venues dedicated to XR exhibitions.

Antoine Cayrol — Atlas V, Paris

2 — Reaching an Audience

Circulation Challenges, Needs, and Deals



Now that we’ve established a better view of the changes in XR creation and consumption, chapter 2 takes the opportunity to focus on the unique challenges and *perspectives of creators and producers of XR experiences*, as they strive to *circulate independent and innovative XR content*.

The chapter first highlights an important need among creators and producers to differentiate their work from more game-oriented circulation efforts. In this context, the success of projects becomes closely intertwined with a simultaneous capacity to be seen and experienced widely, the chance to bring in revenue, and a way to grab the attention of the media and the industry—what some refer to as “evangelization.”

Case study: The case of *Diversion cinema*, who were perhaps the first distributors to specialize in independent XR content, helps to highlight the strategies and approaches that can assist XR makers and producers in reaching an audience.

Key Learnings

For XR creators	<ul style="list-style-type: none">— Prioritizing circulation and monetization over visibility.— Rethinking costs for touring and exhibits (still on creators’ shoulders).— The need for specialized XR producers and distributors.— Importance of IP ownership.
For funders/supporters	<ul style="list-style-type: none">— The important need to support innovation and IP ownership.— Creators need to play multiple roles and are still bearing the simultaneous weight of creation, distribution, and monetization—distribution costs are still on the producers’ shoulders and should rather be on the exhibition space.— The important need to ensure discoverability and searchability.
For analysts/pundits	<ul style="list-style-type: none">— Market decisions in headset sales strategies impede innovation.— Museums, biennales, festivals, and LBE spaces show greater interest in XR than before.— Clearer standards for such formats—to facilitate circulation and distribution.

2 — Reaching an Audience

Circulation Challenges, Needs, and Deals

The data presented in the previous chapter optimistically points to an increase in public interest in original story- or narrative-led XR experiences but also, to some extent, more interest in exhibits and even LBE installations.

Responding to the goals of our research, we wanted to add more nuance to the initial findings of the quantitative analysis and surveys. On the one hand, respondents to the surveys pointed to relevant questions about whether the current market could actually become profitable for independent XR. On the other hand, responses simultaneously demonstrated excitement—or even enthusiasm—for what remained to be explored and experimented with in the field.

To better understand how these realities reflected in the data and surveys were experienced and perceived by leading actors in the independent XR field, we conducted 19 in-depth interviews with specialists, innovators, and leading voices who either:

- specialize in the production and financing of creative and independent XR projects
- focus on circulating and showcasing it (such as distributors, platform producers, and festival directors and curators), or
- provided an innovative take on the burgeoning financial approaches to monetization of XR projects (new initiatives for funding, sales, monetization, etc.)

The respondents to these in-depth interviews are located mostly in North America, followed by a few respondents in Asia, one in South America, and one in Africa. The interviews were conducted by Monique Simard—a well-known film producer and media expert versed in the digital culture sector—with the support of Philippe Bédard as coordinator. Interviews were semi-constructed, recorded, and lasted approximately one hour to eighty minutes each.

The next three chapters explore in more detail the three main axes discussed with our respondents. Namely, we wanted to focus on:

- The challenges and opportunities for circulation and discoverability of XR projects—in particular, from the perspective of independent XR producers and what they envision as the next step for a project's life once it's finished.
- The curation of content on a larger scale—in particular, from the perspective of curators and programmers at venues, festivals, or any other event specifically dedicated to the circulation or broadcasting of independent XR works.
- The monetization of independent XR—finding best practices and learning from new developments when signing distribution deals, recoupment strategies, or agreements.

It should be no big surprise that the first topic readily discussed by our respondents was the difficulty in ensuring the proper circulation of any XR project.

Creators and producers of independent XR work hard to prove XR creation has meaning and value. A necessary way to do this is to ensure that when a quality project is finished, it can actually find and reach its audience.

As we interviewed producers of independent XR, we wanted to know: What do they prioritize when they chose to publish independent XR projects and experiences? How do they plan for their circulation? Where do they first try to have them showcased and for how long? When do they start planning their distribution and outreach strategy?

Overall, we have seen that the two surveys conducted clearly indicate movement in what feels like a budding market. As we've highlighted, the audience seems more ready than ever for increasingly innovative narrative-led experiences. However, the question remains: How do independent XR producers try to reach this new audience? What is their current strategy to position themselves in a sector that still doesn't feel like a market?

To be sure, we discussed circulation strategies with respondents, but also the notion of "discoverability." The term is defined here in its simplest form—a meaning borrowed from the web (content that is easy for a user to find). However, it's important to note that we chose to use "discoverability" as our own respondents do, with a meaning that reaches beyond online platforms and that can be summarized as a way to "be discovered and seen." From this perspective, notions of discoverability also include the efforts undertaken by producers and distributors to support outreach and ensure visibility and accessibility to an intended audience.

Of course, it may also be important to note that some of the individuals interviewed in the context of this study play dual roles—they can be producers of XR as well as distributors, or define themselves as distributors first, but mostly work in ensuring discoverability for unique pieces or even start acting as curators and consultants for other distributors, etc.

Each respondent put forward very different—but sometimes complementary—needs and realities when asked about the challenges of distributing XR works. We thus chose to present the following findings as an ongoing conversation where the reader is asked to keep a mind open to fluid, grey definitions to assess the unique skills independent XR makers must display today when establishing a relationship with an audience, as well as with funders, supporters, etc.

2.1 — Getting Noticed in the Wild West

From a production point of view, we wanted to know: What is the potential for XR content or an XR product to capture the attention of the media and find its audience? What are the most important parameters evaluated by producers when they try to publish their own work? Lastly, what are the issues (as relate to ethics, IP, arrangements, and vagueness) they most commonly named when trying to identify the challenges and limitations of independent XR distribution?

As the quantitative analysis has helped highlight (see chapter 1), choosing how to describe one's strategy for publishing is not easy. Notwithstanding the style, genre, or content of the XR work itself, finding the best distribution strategy for producers often means learning to navigate unpredictable changes—both in terms of technical parameters (for instance, Oculus deciding to stop producing the Rift altogether, or HP recently shuttering its production of portable backpacks and haptic suits), as well as the locations and spaces for publications (online platforms closing their selections, while LBE venues and museums open new ones).

Firstly, evidence from the two surveys conducted in the context of this study points to a lack of clarity in the way the actors and individuals interviewed were able to define their own role within the XR ecosystem. Most seemed to rather question the definition of specific roles, or suggested they played many roles simultaneously—for instance, they are creators, directors, creative directors, producers, distributors, marketers, and community managers.

It's like the Wild West. Everyone has to try and find the best way to distribute immersive artworks.

Mike Jones — Marshmallow Laser Feast, London

This pressure to constantly adapt to changing realities was clearly echoed in our in-depth interviews. Many of the respondents suggested the XR sector was like “the Wild West.” Rules keep changing, production takes forever, the tools and necessities for ensuring a successful circulation of a specific XR work are often not understood by the different members of the same production. A producer mentioned, for instance, starting to work on an XR project in 2016 for a release in 2020, and needing to adapt the project each year to match the changing realities of the constantly evolving HMD market.

Producing independent XR, it seems, requires solid budgets and patience for R&D, and of course, a lot of testing.

The general understanding of a “market” was itself strongly debated among respondents. Some felt we are seeing the first instance of the market burgeoning; others think we’re still at the very start and birth of an ecosystem— sometimes called a “sector” or “field.” Rarely did they think it was an industry. Others doubt altogether that there will ever be an XR market:

To be honest, I haven’t seen the market yet. I’ve seen glimpses of the market. I’ve seen people talk about the market [...] I haven’t personally seen the money. [Not] in a way that makes me think this is something I could go to a private investor and say, “Listen, you should put a couple of million in our company, because we’ll make that back to you.” **Mads Damsbo — Makropol, Copenhagen**

Producing XR suddenly also means investing as an entrepreneur in a field that is highly volatile. For producers, the leap of faith relies on the hope of reaping benefits in the longer run. This becomes obvious when looking at how international XR makers are also affected worldwide.

All seem to believe the XR ecosystem thrives on multidisciplinary and diversity. Yet, the hardware market is, itself, extremely limited if not clearly niche—and not always for the reasons we may believe. For instance, Ingrid Kopp of Electric South in South Africa, mentioned:

Now we have connections to other places where we can acquire headsets, so it’s easier for us to get headsets here but for a regular consumer, it’s not easy. You need to pay the price of the headset, the shipping, the import taxes. It becomes much more expensive than purchasing in New York or Montreal. [...] None of what we do relies on people having headsets at home. Everything is about cultural institutions where we will send them headsets and they will do like special exhibitions and you know, our whole strategy is based on not needing to have a headset at home. **Ingrid Kopp — Electric South, Cape Town**

Ricardo Laganaro, XR director at ARVORE and creator of the Emmy Award-winning experience *The Line*, highlights a problematic lack of access to technology worldwide that could help create and expand the ecosystem:

In [Brazil], we don't have investors. We created *The Line*, but we know it's for an international public, because you can't buy headsets here. Except on the black market. [...] So this is a very, very problematic thing for us. If we don't have access to headsets, how can we build a market? **Ricardo Laganaro — ARVORE, São Paulo**

As Laganaro highlights himself, Brazil has a formidable reputation for being a country of technology early adopters—it holds one of the earliest records in purchases of smartphones when they were first released. Furthermore, by tech standards, even if HMDs are not available to all, they are still not very costly in comparison to smartphones... so access to headsets is not restricted because of a lack of public interest in technology. Nor can it be justified by hardware prices or costs.

Rather, it is grounded in financial decisions made by hardware companies, based in their own notions of “who” the buyers of an experience may or should be, that dictates who has access to hardware when and for how long³³. Therefore, these company decisions end up dictating where the ecosystem can thrive, where it dies, and where it really needs to fight hard to survive:

We created an association called XRBR and we have already registered more than 100 companies. I think there are more people trying to produce VR than people watching VR here. But then, because of it, we have a new venture capital scene here in Brazil that's very interested in ensuring we can make this kind of investment possible. **Ricardo Laganaro — ARVORE, São Paulo**

Elsewhere too, we hear this cry to consider how importance of diversity to the ecosystem to ensure there can actually be a market. For many XR producers, this new reality is not just an ethical decision or a belief in the need for diversity—it is the only sustainable solution if they want to create a worldwide market in the long term. Yet, country-specific limitations are what stop an increasingly thirsty XR audience from finding content, and on the other hand, increasingly diverse experiences finding their audience!

Sebox Hong, from Kaohsiung VR FILM LAB (Taiwan), adds that if we want to create a global market that can find a worldwide audience, we need to ensure we can promote all sectors of XR—from production to distribution. On its end, the Kaohsiung VR FILM LAB supports independent productions through kick-starter campaigns, but they also support Taiwanese XR projects to showcase and distribute worldwide, and in particular in festivals, knowing it's the strategy that may ensure Taiwanese talent gets noticed. However, to ensure projects meet an audience, Hong believes we need to respect the content as an art form and educate public venues, as well as the public, on what that means.

Of course, Kaohsiung VR FILM LAB, like most of the major festivals we also spoke to, is partly publicly funded. That gives these venues more liberty to push for diverse, independent, and story-led content, as many have highlighted.

Respondents suggest they are constantly being caught in a chicken-and-egg situation—the public wants better, original experiences that fall outside the scope of games. Platforms will only support games and projects that resonate with what has worked financially in previous years. The public sees these projects and gets disappointed... The XR ecosystem is constantly in a state of budding:

Well, the thing we have seen is companies that are willing to experiment in this field, you know. Certainly, Oculus is one of those companies. And many other tech companies are also jumping in to see, to test what is finding traction. [...] It really is being answered by the companies that are really willing to put the money into exploring other formats, other genres. **Shari Frilot — Sundance New Frontier, Park City**

33 This practice could easily and dangerously resemble *redlining* activities—a discriminatory practice in which services (financial, technical, or otherwise) are withheld from potential customers who reside in neighbourhoods (in this case, countries or regions of the world) classified or considered more “hazardous” to invest in. In the US, redlining practices have been made illegal, as they clearly disfavoured residents belonging to racial and ethnic minorities.

The current reality for independent XR producers is that it takes grit and a pioneering spirit to choose to still create, circulate, and present work under these conditions.

For some, what drives them to keep going despite a lack of clarity in the numbers, is a hunch—a feeling that is actually reflected in the data analyzed in chapter 1—that the public is ready for new forms of storytelling. Ricardo Laganaro, Chief Storytelling Officer at ARVORE, declared: “I think we are finally getting to a point [where] we are creating a new language. And people are now able to enjoy it.”

It’s this feeling of finally “reaching out” and being heard or getting noticed by more than a few, that keeps producers going despite three essential distribution challenges. As Shari Frilot eloquently puts it:

The artists keep coming to the medium. It’s hard to make a sale, but they nevertheless keep coming. They’re not going away. [...] If the creative community keeps ballooning, I think there will inevitably be a marketplace with this. The danger is: What’s the bottleneck for it? **Shari Frilot — Sundance New Frontier, Park City**

A first challenge comes from balancing non-linear storytelling and interactions that feel intuitive, among an audience that is mostly not yet accustomed to the “language” defined by Laganaro. The creation process becomes focused on telling a story as it would with any other media form—but it also suddenly needs to take into account finding solutions on how to trigger curiosity through new tools, ensure curiosity outweighs the clunkiness of the display, and build a form of interactivity that is intuitive yet seamless enough for newcomers to focus on story instead of technology.

The second challenge becomes finding producers and creators with said skill-set—to achieve this particular balance between flair for tech innovation and quality of content, is not only hard to come by, but is also quickly crushed by unexpected changes by the gaming platforms and hardware companies themselves, and where they choose to enable access to nascent technology and where (and when) they chose to restrict it. As a respondent stated: “It’s my new normal. Something that you think is going to work will be revised after a testing session, or a decision by Oculus. There’s always something.”

Thirdly, independent XR projects blend form and content. You may have a creator who has a strong wish to tell a specific story, but you also need a producer to have a particular feel for how a medium should unfold that story, or how that medium can actually use IP or talent to ensure enough interest for marketing purposes, or a producer who knows how to grow the market to solidify projects in development and ensure a steadier growth of projects. That said, XR producers are hard to come by—most are actually creators or directors who became producers because finding support to ensure the feasibility of their work was so hard that they choose to do the work themselves:

We need to marry the sort of traditional craft of storytelling with the design of technology and how mediums affect people and how we know that it will affect people. [...] I’m not the one who has the responsibility alone with an artistic project, but I always share an artistic responsibility, and then also have the administrative economical responsibility. **Mads Damsbo — Makropol, Copenhagen**

Liz Rosenthal, co-curator of Venice VR believes this lack of fully trained and diversified producers is what should be more supported in the future to ensure a proper, sustainable XR industry:

The person who will be at the centre will be the producer. We don't have fully trained producers yet. In film, there are three kinds of producing: creative producer, executive producer, line producer... But a lot of time in XR there's rarely someone who has all of these skills and sometimes even just one of these skills. And it's the maker or the director who ends up playing them all.

Producers are currently the ones to take on the entrepreneurial risk to drive a piece of content through concept to distribution. The IP is originally owned by a producer and those are the companies that are the exploratory risk-takers that really need support. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

Among the individuals interviewed, there seemed to be a general acceptance of uncertainty. If many do complain they have to deal with a constant creating-testing-revising of their projects at the same time as they need to convince funders and potential buyers of the solidity and feasibility of the work they're producing, for many, the end goal still makes their efforts worthwhile. This end goal is a feeling that XR is better understood and should, inevitably, become a better-established form of entertainment.

What really becomes counterintuitive though, is how to make such a belief in what may happen—in spite of uncertainty—as clearly understood by funders and buyers as it seems to be accepted and widely shared by the independent XR community:

We're at the beginning of constructing an ecosystem, and because it is very fast evolving, and it's so many different things, it's very hard to explain what it is and have an ecosystem that can work for this whole set of different types of formats. So that is the challenge. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

Many even used terms like “educate” and “pedagogy” to describe what they think is the only way the ecosystem can keep growing: Funders, buyers and supporters of this nascent market must understand and accept that uncertainty is part of a long-term strategy and that it is the only way to solidify and establish a wide and returning audience, in spite of technological highs and lows.

A first lesson we can take away from our in depth-interviews is that development, financing, funding, and distribution efforts can and should be considered multiple facets of the same challenge:

You need to think holistically from development to distribution. I'm always very focussed on the audience. Right at the beginning when you're starting a project, think about who it's for, how they access it, and why. [...] I've always been interested in how you build sustainability for new mediums. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

The person who will be at the centre will be producers. We don't have fully trained producers yet.

Liz Rosenthal — Venice VR, Power to the Pixel, London

2.2 — Moving to Prioritizing Circulation Over Visibility

For producers of independent XR, the biggest hurdle remains that of using gaming tools and gaming platforms, to reach a niche and creative-arts-curious audience. How does one get noticed by an audience that clearly spans outside a particular world of games (and gamers)?

In the last couple of years, a sound strategy for producers was to bet their money and distribution efforts on narrative XR content that could be showcased at high-visibility events or location with high traction and user footfall—mostly important film festivals, with the exception of emerging trending locations, such as PHI in North America, the Eye Filmmuseum in Amsterdam, and Sandbox Immersive Festival in Beijing.

[Sandbox] is conceived simultaneously as a space for leaders in the XR industry to showcase work, but also a way to help a more general public discover immersive media—what it is, but also what it can offer. [...] Our current goal is not to make profit yet, but just to be sustainable. **Eddie Lou — Sandbox Immersive Festival, Beijing**

For some producers, a safer strategy is to try and bet on various circulation circuits. In a way, they try it all, with an approach that could be conceived as encouraging partitionable IP, to be leveraged and published in multiple markets.

For instance, some decided to develop IPs in subsections and sub-experiences that could be commercialized in many different markets (a strategy made famous by Atlas V but also Felix & Paul Studios). For others, this meant thinking about projects' development and conception in terms of the diversity of platforms and establishing clear channels of communications with them to ensure a project can be perceived by platforms as a way to promote a new technology or asset. For instance, *The Line* was acquired by Oculus as the first project to enable hand tracking. Similarly, *Wolves in the Walls* was also conceived in phases to comply with expected changes in Oculus headsets from Rift to Quest.

Yet, as respondents duly noted, this strategy also means that commercialization of such experiences first needs to consider each part of a product for each market it targets—with its own rules, interlocutors, and channels for distribution. This, of course, also means a creator/producer must therefore duplicate their efforts yet again to ensure they have a distribution plan that can reach different markets simultaneously.

Potential Markets

- **At Home VR/AR** – Oculus, Steam VR, PlayStation VR, VIVEPORT, Amaze VR, Rad, AR apps
- **VR LBEs** – Exhibits, pop-ups, installations, museum, libraries, art centres, VR arcades
- **Video Platforms** – YouTube, Vimeo, Twitch
- **Domes (half or full domes)**

Surely, we've seen that major VR gaming platforms, such as Steam, Oculus Store, and VIVEPORT do offer online distribution opportunities to immersive creators and independent developers. While Steam, as a gaming-first platform, focuses less on narrative experiences, Oculus Store and VIVEPORT are still considered the two main places where more ambitious VR stories can be published. Yet, as highlighted before, games are nonetheless what a user will encounter first on these platforms: The proportion of immersive content on VIVEPORT is approximately 80 percent games to 20 percent narrative experiences (similar data is not as clearly available for Oculus), and if anyone can publish their work on such platforms, it does become particularly hard to ensure discoverability if one doesn't at least fit the platform's technical requirements³⁴—but more generally, its own strategy for commercialization. As we've seen, this issue can have a tremendous effect on who and what gets seen by the audience.

34 *FRI//XR: A Handbook for Immersive Producers* (2021), p. 24

We need people having access to the headset [...] A lot still ask us, “how can I see your piece?” This is a problem.

Ricardo Laganaro — ARVORE, São Paulo

Even if due to favouritism or some other amazing stroke of luck, a producer does manage to publish on a platform, the strategy cannot be considered a clear or ensured path to monetization. Indeed, if games usually sell on such platforms for US\$10–50, content that is narrative-driven and independent is rarely sold for more than US\$10 (of which 30% is shared with the platform and 70% for the publisher). As Laganaro highlights:

This is still considered a high price for users: Gamers come, and for them, an 8-minute experience at this price is really expensive. They are used to buying games at \$30–40 but they last several hours to complete, and you can return to them many times. **Ricardo Laganaro — ARVORE, São Paulo.**

By comparison, an individual wanting to see a 60-minute movie would be willing to pay \$5 per hour, but perhaps not \$5 for 8 minutes! Many interviewees highlighted the fact that a museum- or arcade-like approach—where visitors pay for an hour of access to multiple XR titles, really felt more in line with the prices asked and the experiences offered.

Laganaro’s interview, here too, offers interesting suggestions forward:

I think, first of all, our main issue is that we need people having more access to the headset. [...] A lot of people still ask us “How can I see your piece?” If you have to have a headset, this is a problem. And one good way to solve that is having cultural centres and places that people can go and rent for 30 minutes, one hour, whatever, and try as they would do in a movie theatre or something like that. Having more places that people rely on and trust to go and try out of home is one solution, I think. The other [...] [w]e already have an audience that is used to paying for content on online platforms and they spend a lot of money buying this content. That’s the nature of this industry: You buy a console, so you have to pay for good content. At ARVORE, we also do games. And when we launched *The Line* for the home-use market, we also launched the accompanying game. It was a narrative-driven game, still, but it’s hard to compare the numbers of creating a game and selling it, rather than just doing the narrative interactive piece like *The Line*. **Ricardo Laganaro — ARVORE, São Paulo**

For years, the first need that many XR producers identified was enhancing visibility. Ensuring the media, the press, and major festivals would select an experience, talk about it, and make the public remember its name—so that it will search for it once there is a consumer market. However, as the sector evolves, the burning questions for producers now become: Will you bet on making your money from ticketing or sponsorship? Will you think of a work as artwork and support a run based on museum models? Or will you think of it like theatre or music, and try to market and promote visibility and circulation around a specific topic? If conceived of as an exhibit, what kind of marketing will be done around the exhibition?

Distribution and Exhibition Platforms



Source: VRTL Academy (2019)

The first time someone tries VR is perhaps the most important, as it colours their view of the landscape.

Eddie Lou — Sandbox Immersive Festival, Beijing

As the National Film Board of Canada (NFB) highlighted: “In terms of distribution and commercialization, we always need to reinvent a new way to work, to seek a public. Each time. We need to test new channels to reach the public, to ensure we keep widening accessibility to the work we produce.”

Of course, producers of independent XR content also understand that the distribution plan they choose will also determine how future consumers conceive of XR. This is an important responsibility to bear.

Greatest Distribution Challenges for LBE XR As Identified in the Poll Conducted³⁵

Revenue Models for Creators/Producers		Distribution Challenges
Festivals (Duration: 2 to 10 Days)	<ul style="list-style-type: none"> — Licences are priced very low — Objective is visibility rather than monetization 	<ul style="list-style-type: none"> — Taken on directly by creators and producers
Temporary showcase (Duration: 1 to 4 months)	<ul style="list-style-type: none"> — Many revenue models possible (from low to high risk) — Licence paid by the LBE — Minimum guarantee on % of ticket sales — % on ticket sales only — Other possible revenue streams: derived products, sponsorships, food, and beverages 	<ul style="list-style-type: none"> — Intermediary takes on the risk (for instance, a distributor) — Co-production with local or international promoter (shared risks) — Creator/Producer is the only promoter (100% of risks)
Permanent showcase	<ul style="list-style-type: none"> — Tickets sales, sponsorships, derived products, food, and beverages — Ex: teamLab, Meow Wolf, Punch-drunk 	<ul style="list-style-type: none"> — Creator/producer is the promoter — Access to risk capital — Commercial success on large scale possible
On-demand, exclusivity deals	<ul style="list-style-type: none"> — Payments to director/producer — No/Low risk 	<ul style="list-style-type: none"> — Market doesn't feel mature enough for this model

However, this also means that the needs of independent XR producers are changing. A couple of years ago, supporting in accessing better organized, more diversified festival distribution was the most important need highlighted. The goal seemed to be to make sure the work got out there and was seen. The thinking was that when people experienced unique, original, story-driven XR, they would believe in the medium. As Louis-Richard Tremblay, executive producer at the NFB, put it: “When the market is this young, producing is distributing.”

That said, one of the signs that the sector is evolving is that simply becoming visible is no longer identified as the most important need for producers. Even if visibility for experiences and for production companies are still important and connected goals that go hand in hand, producers now seem to consider the need to get support in planning and circulating independent XR works in LBEs, museums, galleries, malls, and other venues as a way of accelerating and

³⁵ Source: Quantitative Research Conducted by PHI

expanding circulation for their projects (both old and new)—and in return, ensure sustainable financing for new experiences:

There is sometimes governmental funding for production and some for development, but there is rarely a fund to support distribution and circulation. And that is really needed. **Paul Bouchard — Diversion cinema, Paris**

Of course, some limited sums of public funding do support a project's presence at a festival. As many respondents stated, festival visibility has and can continue to help the XR sector grow—by helping makers and their work get exposure, press, etc.:

The best projects can sort of percolate to the top and become more accessible for everyone, and things like that. So that's, in itself, great. But I also think what festivals definitely have as an advantage is that they are very focused on engaging international or national or regional crowds. So, they are educators in many ways. **Mads Damsbo — Makropol, Copenhagen**

Yet, in today's realities, support to take part in festivals is simply not enough. Many LBE venues (now including increasing numbers of museums, galleries, and libraries) are fervent about acquiring XR experiences. The public is also flocking to these projects. Yet, producers still need to take on the costs, organization, logistics, and technology of any setup of their projects in these locations. A bit like if a film had to pay for a projector, projectionist, room, seats, and a screen each time it was presented in a cinema (in some cases, even the popcorn).

As Chloé Jarry, CEO of Lucid Realities, puts it, this can be a real drag for producers in terms of the money and time invested:

The experience *The Enemy* [produced by Camera Lucida] took us four years to produce as a project. And so much time, money, and energy was spent to find how on earth we could show it to the public... We managed to create five exhibits worldwide that lasted one to six months each. But still... it's definitely not enough. **Chloé Jarry — Lucid Realities, Paris**

As Jarry aptly highlights: "If we want to continue producing, we have to be able to distribute. And the models for distribution need to bring more revenue, and on a longer run. We can't do it all on our own."

Here Jarry echoes the positions of Michel Reilhac, co-curator of Venice VR, when he suggests that monetization of XR content has now clearly become a key need for mass adoption:

The development of projects must go hand in hand with distribution. It's not only about making sure the next project is funded... Funding of a project needs to ensure the viability of its release. **Michel Reilhac — Venice VR, MELANGE, Amsterdam**

When the market is this young, producing is distributing.

Louis-Richard Tremblay — National Film Board of Canada, Montreal

If we want to continue producing, we have to be able to distribute.

Chloé Jarry — Lucid Realities, Paris

New players have emerged in terms of providing funding resources for projects, and they span from the base engine (as was the case of the generous grants offered by Epic MegaGrants), or from the stores themselves (Oculus, Magic Leap, and HTC). Museums too are starting to become important partners in fund-seeking and financial support for production and perhaps offer more reassurance about how “independent” the XR independent market can remain.

As Jarry puts it:

Festivals attract a limited and often self-selecting public of people already in this world. Fixed cultural venues, on the other hand, could be promising homes where VR experiences can exist in the longer term. **Chloé Jarry — Lucid Realities, Paris**

Other experimentations rather try to make immersive and interactive experiences as widely accessible as possible, forgoing the limitations of cumbersome and expensive devices. Such is the case of WebXR and WebVR initiatives, such as LucidWeb:

WebVR, basically, is a technology that allows you to watch 3D content in a browser and a browser allows you to watch the content instantly, so you don't have to download anything. [...] Of course, we [are] accessing the World Wide Web on the desktop and the same thing as well on the phone. [...] [A] browser becomes a tool that gives you access to content and storytelling. **Leen Segers — Women in Immersive Tech, Brussels**

2.3 — Deals and Standards – Online or LBE

Surely, the constantly changing rules of the games or platforms changing their regulations and accessibility on a whim, play greatly into this constant sense of instability. None of this bodes well for investor interest.

In a way, the technology itself has always imposed certain standards. Either the specs of a particular headset imposed a certain way of creating worlds with colour and lighting choices, interactive elements, or levels of agency for the user. For example, the Oculus Quest couldn't support the same levels of dynamic light or light contrast as the Oculus Rift could, resulting in different creative choices made when producers foresaw the Quest as the intended short-term platform. However, this could also be reflected in the predetermined length of projects and how it could be partly reinforced by festival selection, or the risks of streaming and how it could affect latency:

A couple of years ago, with [WebVR], we would choose only shorter projects, because the only real downside was still that the Internet connection is not strong enough for example for a VR experience of 30 minutes or 45 minutes; you will have some more moments of latency [...] We no longer have to worry about this as much. I have to say that 5G would definitely help reduce that challenge. **Leen Segers — Women in Immersive Tech, Brussels**

As these technological, but also curatorial, decisions start to take root, some of our respondents do seem to have noticed over the last year or so, some unclearly expressed or ill-defined standards start to emerge—depending on whether the distribution is for location-based (sometimes called “out-of-home”) or at-home entertainment.

Film Festivals Going Online?

With new COVID lockdown and social-gathering restrictions, new realities have forced important XR selections and curation of major film festivals to rethink the way they reach an audience.

There are several steps required to enjoy the VR festival in the most convenient way. It's a completely new user journey, full of interesting UX/UI challenges we look forward to investigating and resolving.

Leen Segers — Women In Immersive Tech, Brussels

In this light, many festivals decided to offer hybrid versions—where projects could be experienced on location, but a version of it (if not in its full version), could also be experienced through online platforms. Even social events were sometimes organized in partnership with social VR platforms. This enabled a new ease of deployment, as creating a world in VRChat, for instance, takes less time, making it easier to create fully realized worlds for people to wander around in—but also provides fun and unique ways to give a new audience access to festival content it wouldn't have found otherwise.

Social VR versions of film festivals also enabled festivals organizers to add in little Easter eggs, which were an extra way to bring in humour, engage with the audience, and infuse a platform with a festival's unique and long-curated style. For instance, IDFA had its first virtual festival with rooms for chatting and taking pictures with others. Raindance Immersive had little hidden speakeasy corners, etc.

Leen Segers, co-founder of Women in Immersive Tech, found that the paradigm still requires a lot from new audiences, though, and needs some refinement:

The audience is required to get on the right track to access the festival WebVR gallery. On mobile or desktop, it is simpler; just click the URL and your default browser opens. But for VR headsets, there are several steps required to enjoy the VR festival in the most convenient way. It's a completely new user journey, full of interesting UX/UI challenges we look forward to further investigating and resolving based on the feedback we have received from the audiences of both GIFF and EA. **Leen Segers — Women in Immersive Tech, Brussels**

Because of these barriers, many respondents considered that film festivals should at least provide a step-by-step guide for new visitors, making clear which experiences are available where, how best to access them, with which device, etc. Yet, producers are still usually the ones required to provide such guidelines and expend such efforts for festivals, which results in a lack of coherence and structure in terms of standards:

I think what could be done better is to... and I hate that we, you know, keep talking about this, but it is to find these kinds of standards for how an XR screening should happen. Like... how is it easier for a venue of a festival to just sort of plug and play an experience? A good example is right now, you know, we had a piece at Venice last year, where it was run through VR chat, but the actual experience could not run on VR chat because the platform specs couldn't handle our particular experience. **Mads Damsbo — Makropol, Copenhagen**

In other words, if festivals are sometimes still wondering about what standards to impose, the simple fact that they choose a certain platform over another does, in a way, impose its own sets of standards:

Maybe they should narrow down and say, well, we are a 360 festival, or we are a Quest 6-degrees-of-freedom festival, or we are a location-based performance festival running only on *VRChat*, or whatever. **Mads Damsbo — Makropol, Copenhagen**

Which begs the question: Is the independent XR sector waiting for the headset manufacturers and platforms to push the standard? Or are festival and LBE offerings going to lobby to push the headset manufacturers and platforms into new standards?

Museums Going LBE

Museums were often cited as having a lot of potential in terms of VR distribution. They, along with public and private libraries and art galleries, are already cultural institutions. As such, they already benefit from mediation and space: people go to learn, discover, try, and experience new things. All of this is something many found could be truly relevant to the VR industry.

A noteworthy point is that VR installations themselves are now changing the visitor journey in museums. With VR booths installed, XR exhibits are showcased as part of larger collections, etc. In a way, many visitors now seem to understand XR installations and projects as not being fully foreign in these gallery settings.

In Asia too, location-based seems to be an increasingly appealing opportunity to highlight XR works. Eddie Lou, founder of Sandbox Immersive Festival in Beijing, explains:

The Chinese public is accustomed to going outside of home to live collective experiences, and also to go in groups to museums, social events, etc. [...] At Sandbox, I wear the hat of an organizer, a producer, but also a distributor, especially for exhibits of XR or larger scale experiences. Similar to what PHI does with *Carne y Arena* or *THE INFINITE*. [...] [w]e tested building a big exhibit in Beijing, and it worked pretty well, so we now want to try the experience in other locations. **Eddie Lou — Sandbox Immersive Festival, Beijing**

However, even with such museums and LBE-specialized venues, independent XR producers complain they still need to provide a lot of education and pedagogy to allow these LBE spaces to showcase their work. The interviewees highlighted the lack of training knowledge from the teams at festivals and LBE settings such as museums, arcades, and other location-based venues. There is also a constant evangelization to be done about what it implies to welcome immersive artworks into their spaces. Curators and festivals often require makers and producers to provide risk assessments and tech-related updates, as well as the benefits and constraints for each of them. This too is very demanding on producers.

We accompany them up to even creating furniture for them. We train their teams. We do the scenography. We bring in the equipment... Of course, we don't need to do it for all museums... But we do need to accompany the spaces that we partner with for distribution. **Chloé Jarry — Lucid Realities, Paris**

So how do producers actually get to sign deals with such instances and spaces for circulation? Well, we've seen how small financial deals could be cut with festivals, but museum deals are not so lucrative either. Licences can vary greatly, from \$2000/week to \$35,000 for several months, depending on the respondent.

For Lucid Realities, finding funds for museum-like exhibitions has become a skill in its own: "We seek funds ourselves, and usually the museum contributes a small part. Mostly in minority. Between 10 and 15%. But for us, it's still really important: It becomes a passport to reach out to other museums and ensure better circulation." (Chloé Jarry — Lucid Realities, Paris)

We're looking to create a network of museums. We offer training and pedagogical tools. We offer a catalogue of titles created with their capacities in mind and that can complement the other works in their collections.

Chloé Jarry — Lucid Realities, Paris

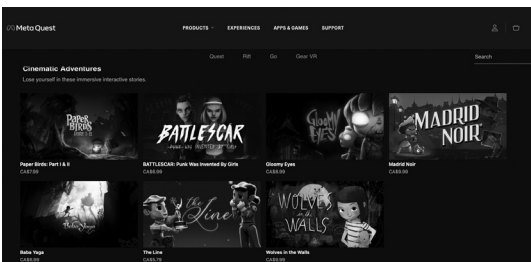
Creators need to find ways to bring the feeling of intimate experiences to larger groups, alter expectations of existing early adopters, and/or invent new systems and approaches that allow for sustainable experiences that are financially viable long term. That said, they not only need to convince new places that could become great partners, but also need to provide them guidance on everything needed to make projects viable and monetizable. Producers are evangelists, entrepreneurs—and now, investors.

What About Stores? Any Deals on that Front?

Facebook’s primary issue is presiding over a dominant VR ecosystem that costs a lot to operate, doesn’t make a lot of money, and is mostly made up of enthusiasts who aren’t sympathetic to pragmatic arguments about how to grow and fund the market.

In February 2021, Oculus launched the App Lab for Quest, which allows developers to distribute their games on the headset without going through Oculus’s algorithms for discoverability, let alone Oculus’s in-house curation process. There are now nearly 300 games and apps available on App Lab, eclipsing the number of apps on the official Quest store.

The platform has proven popular: In as little as four months, the number of apps on App Lab has surpassed the number of apps on the official store (which offered 282 experiences after two years of operation). This discrepancy shows that many more developers would like to be on the official store than Oculus allows.



Source: Oculus website (July 9, 2021)

Many of this study’s respondents did feel that the App Lab could make it a bit easier for non-game applications to reach their audiences. That said, it is important to note that App Lab apps are not listed in the main Quest store. They are therefore “unsearchable” and need a specified URL link to be installed by a user. The process is still cumbersome, and not very user friendly, which could become a friction point for newcomers wanting to discover non-game projects.

Contrarily to festivals, stores do make it explicit what the standards and requirements are for a work to be deemed “good enough” to enter the selection process—based on qualitative and technical criteria. Yet the decisions around final projects making it into the store, and whether they are even searchable, is made behind closed doors by the stores. The Quest store, for instance, accepts the addition of an average of 0.38 apps to the store per day.

Oculus’s decision was not simply made to support a space for experimentation, it was also intended to leave room for trials and adjustments between what the audience was expecting, what the creators are producing, and what a niche world of early adopters is promoting through festivals, LBE attendance, and reviews:

There is a much bigger audience starting to build. The headsets have been flying off the shelves. But there are still [...] misaligned expectations: Projects that make it big in festivals aren’t necessarily the same for which users on our store are willing to pay. **Yelena Rachitsky — Meta [Oculus], San Francisco**

This misalignment, in and of itself, can be a huge deterrent for independent XR makers: How the projects are presented, who gets to see them, who gets to promote them? “We want to keep a certain control over the editorial decisions of the works we produce. With stores... we have no control.” (Louis-Richard Tremblay and Tammy Peddle — National Film Board of Canada, Montreal)

Even a company as lucrative as Felix & Paul Studios seems unsure of the validity and long-term viability of the deals they make with stores:

It's a hard question. I don't want to bet on the number of downloads yet. There are still way too little headsets out there. **Stéphane Ritué — Felix & Paul Studios, Montreal**

Here again, there is a misalignment on the level of quality that XR experiences are expected to provide, and for which platform:

What is generally presented in festivals—it's innovative, it shows ways forward. But what you see in festivals is generally not at the quality of polish we're expecting for our consumers on a store. **Yelena Rachitsky — Meta [Oculus], San Francisco**

Making projects that can simultaneously respond to the festivals' demand for innovative projects with a wow factor, and the XR stores' easy entry with high polish, becomes particularly hard for XR makers... And sharing the amount of experimental trial-and-error they do when hoping to sign deals becomes hazardous—many see the efforts they put into creating a sounder market as an investment... If they start sharing numbers, they are afraid these experimental deals may themselves be taken as standards, and they are simply too low (if not downright costly) for producers to want to share publicly.

Many speak of the time and funds invested as a need to educate and guide the public, the platforms, and even the spaces where there is a possibility for circulation—if indeed, this is the Wild West, it is a civilized and pedagogy-oriented one.

2.4 — Key Learnings and Recommendations: Longevity, Searchability, and Holding on to Your IPs

The individuals met in the context of this research insist that the sector is no longer about proving XR is a form of storytelling, story sharing, or artistic media and form. They feel the audience now “gets it,” and feel hope that the future holds more sales in sight. Yet, many also insist their needs are not only about creating more visibility for projects, as used to be the case. Rather, they wish to focus on ensuring circulation and distribution can finance new projects and thus make the sector less “project-funded” and more sustainable.

The steps needed to ensure all this seem to take on a large part of the financial and time investment made by independent producers themselves. Most go along with it, thinking there is no other alternative: If a sound market is in everyone's interest, why not collaborate with others (including newcomers in XR LBE) to ensure that the dream can become a reality?

Therefore, all the efforts made to educate funders, venues, festival audiences, etc. and bridge the gap between the audience, the creators, and the funding... have had to come from the producers themselves. And as we have seen, this unfortunately also means those producers must also bridge the gap between what platforms allow and what people actually want to buy them for.

In this context, making sure a producer's IP is protected, becomes paramount.

It forces producers to accumulate sources and plan upstream around the financial profitability of their dissemination strategies, so that the financing of production and development passes, in part, through a prior commitment from platforms or venues.

However, this is often counterintuitive and not so well received by all parties. In the gaming industry, it is often the case that publishers end up retaining creators' IPs. Similarly, in XR, creators have also found it hard to hold on to their IPs. However, in today's independent XR ecosystem, retaining one's IP is considered a way (if not the only way) of increasing the number of marketable by-products derived from a single XR work, to be used for a variety of venues, platforms, and audiences.

IP [...] is definitely a big part of creators maintaining a power position on the landscape

Shari Frilot — Sundance New Frontier, Park City

Particularly, in today's digital economy, it is IP ownership that enables creators and producers to have a share in any kind of return on the market. If makers and producers want to get paid a lump sum, thinking of IP and royalties becomes paramount to ensuring the sustainability of artists' work and this emerging XR ecosystem:

IP [...] is definitely a big part of creators maintaining a power position on the landscape, maintaining their true power because it is their IP. That is the carrot. **Shari Frilot — Sundance New Frontier, Park City**

Another crucial component with IP is ensuring the longevity of immersive projects. In France, for example, the BNF (Bibliothèque Nationale de France) library has started to open its digital archiving process to producers and makers of independent XR. In Canada, PHI has also started to create a sort of catalogue of projects, trying to establish a list of landmark XR titles from early on through today. In this context, making sure the IP stays with the producer is a way to ensure everyone can follow the different iterations of a given project and even its "recycling" on new platforms. For instance, because of COVID restrictions, many producers found that new projects were harder to distribute. That said, many also paradoxically found that they could adapt old projects for at-home consumption and make new sales where they hadn't been expecting it.

Efforts to ensure projects are found, that they can be adapted in the future, and that we keep track of various projects and landmark works over time are comforting signs of a medium that is taking root—but that nevertheless needs support.

As many have highlighted, several countries make (small amounts of) public funds available to distributors and broadcasters. In Canada and Quebec, there are clear opportunities for the distribution and circulation of works. However, this financing is not available worldwide. Some countries simply don't offer such support. Moreover, these types of support are still one-offs and are project oriented. More support is needed to ensure distribution of XR experiences becomes a sector's healthy activity (and doesn't rely on addendum work from producers).

In the meantime, to compensate, co-production becomes a way to increase opportunities of collaborating with teams situated in countries who can tap into such funds. As Antoine Cayrol (Atlas V) has also often stated publicly, co-production and sharing the IP of a single work is also a way to share the risks...

Collaboration and the need for distributor roles being more clearly defined are thus new realities and needs clearly identified in the interviews.

Complex Relationships with Spaces, Partners, and the Public

Another important takeaway is the importance of education and support for LBE and exhibit spaces when they partner on independent XR projects. Producers often find themselves taking up the role and work of doing demonstrations at various steps of the distribution process, including proof of concept, validation rounds, delivery with a tech person on site, training volunteers or staff to help visitors with headsets, etc.

That said, LBEs are not the only area where independent XR producers need to take on more evangelizing and educational roles. Even when interacting with platforms, many believe the limitations created by online stores themselves is what has impeded the market from growing—and while engaging in lobbying and platform politics with said stores can become tedious, it is important.

These technologies, it should be noted, are increasingly involved in problematic practices—from surveillance and algorithmic profiling to the energy impacts of vast digital processing. Independent XR makers explore appealing relationships with the major platform stores, which have shown curiosity and even important and crucial interest for original, compelling non-game experiences (for example, the role Oculus has played in supporting landmark independent XR projects over the last seven years).

However, many makers are still showing resistance through reflexive creative practices—highlighting the possibilities and risks of forcing users to have a Facebook account linked to a headset, for instance—while simultaneously illuminating the role of makers and choices in critical reflection and action:

In the end, if you look at the market, we're in a monopoly and not in the tech world. The kind of works that I show at New Frontier, they're really exciting and they provide a vision for artists and for audiences into excitement and into a new way of expression. I can only hope that... I don't know how it can be avoided... that some of that vision will be paid forward into what we are in the midst of creating. And that the values of that work will be a part of what we're creating. **Shari Frilot — Sundance New Frontier, Park City**

How do we ethically and responsibly think through the implications of showcasing work on store-linked platforms? How can the audience remain informed and in control of their own data?

With emergence of additional tools (AI, 5G), and a constantly lowering of costs and the barrier to access to HMDs and content, many producers feel they need to prepare for inevitable developments in location-based and at-home consumption of media experiences. They look out for technical developments that fall outside of the story-led entertainment industry, such as education, science, B2B, and commercial advertising. There is so much more to explore:

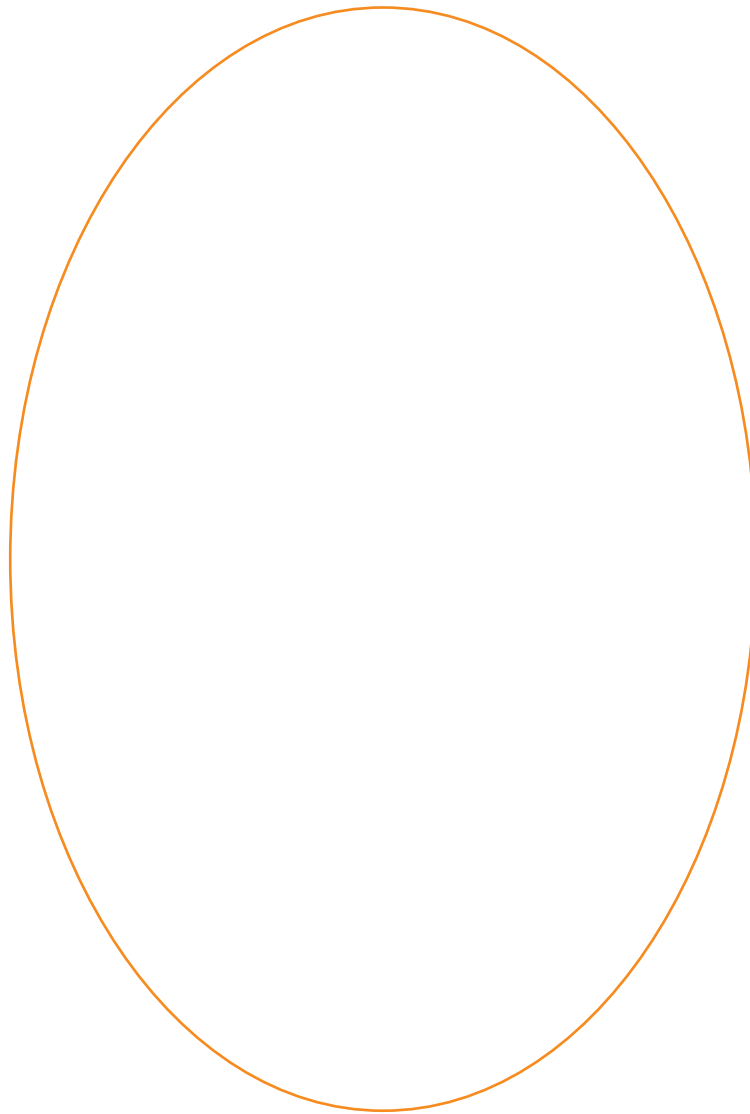
To see XR in a B2C mode is a mistake, in my view. At least today. We need to really focus on B2B and see where our allies are. [...] There are so many other distribution spaces: museums, domes, IMAX—we now think of a TV version for *[Space] Explorers*, etc. **Stéphane Rituit — Felix & Paul Studios, Montreal**

Some also highlighted that while the gaming market is a continuous contender that one should adapt to, social VR platforms are also emerging as places for artistic projects to launch:

The festivals are where artistic projects launch. But it is a niche. I'm spending a lot of time in social VR and there are a lot of amazing creators in there, people who might not otherwise identify with the artist community. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

Finally, many are proud of the grit and energy they put into clearing paths in these uncharted territories, even if it is exhausting. Respondents to this survey do indeed highlight the need for more public and private funding for either systemic support for innovation and innovative practices, or support for roles and activities specifically targeted at circulation of independent XR—just to ensure that all efforts are not laid on the shoulders of the same individuals or small companies. There are extensive collaborative opportunities and new business paths to discover. And for many, changes are a welcome necessity to address a constantly evolving and growing audience.

Key Learnings



- Museums, biennales, festivals, and LBE spaces are showing greater interest than before in XR.
- While the priority was initially to prove the legitimacy of the medium as an art form through a diversity of formats, many feel they are now ready for clearer standards for such formats—to facilitate circulation and distribution.
- Types of deals: festivals (screening fees) and physical LBE exhibits (licence fees).
- Costs for distribution are still shouldered by producers and should instead be handled by exhibition spaces.
- Producers currently spend a lot of time and money conceiving of and educating on types of showcasing possibilities, formats, set designs, visitor flows, tests with visitors for each location, etc.
- Need for more specialized actors in distribution.

2.5 — A Case Study: Diversion cinema

As many independent XR producers have duly noted, VR and AR don't really have a distribution circuit. Every producer needs to generate and develop a strategy for each experience, often including the need to educate venues that are not aware of the possibilities for revenue generation that such a collaboration could entail.

There is a clear need for better, more widely established specialization related to distribution of XR content. Among the respondents interviewed, Paul Bouchard offers a unique perspective.

Diversion cinema is probably the first (and to date, one of the only), XR companies solely dedicated to the distribution of independent narrative-driven, auteur XR content. Founded by Camille Lopato in 2016, the company has worked with over 250 festivals and events each year, constituting a major distribution circuit that is not to be overlooked.

We met with Paul Bouchard, head of distribution at Diversion cinema, to understand what he felt were models that producers first think of when hoping to circulate their work. What has been part of Diversion cinema's trial-and-error process and what can we learn from it? What are, from his perspective, the main challenges for distribution?

The interview was conducted by Monique Simard, with the technical support of Philippe Bédard.

MS

PB

How would you define Diversion cinema's activities?

I would say that I'm a distributor of immersive experiences. Broadly speaking, I'm referring to technologically agnostic immersive works. It's really about working with auteurs and creators to distribute their works.

Diversion cinema has two primary activities. The first activity is distribution, which entails acquiring and promoting works that it represents internationally. Diversion cinema gives these works visibility at festivals and shows them online or at physical locations.

The second activity is organizing VR events. In fact, event organization constitutes the company's chief revenue stream. This activity involves acting as a service provider to set up virtual reality spaces in physical locations, particularly at festivals, to welcome spectators.

Falling in love with particular works was what sparked Paul Bouchard's interest in XR as a career path. He'd already been working in international sales in the film industry. "I watched the first narrative works available in 360° virtual reality and I thought that these wonderful new media and technologies could express ideas and feelings in a new way. That's how I got into the field."

Basically, what Bouchard saw as an opportunity was still regarded by his colleagues as too complex. This lack of support continues to be a major problem that XR producers and distributors need to address.

The challenge in distributing VR is to know how best to support the work.

Paul Bouchard — Diversion cinema, Paris

PB

I needed to surround myself with people who also experienced this passion and fervour for virtual reality and new narrative technologies. That's why I joined Diversion cinema [...] some years ago. We believed that VR would be the future of AV—the new audiovisual standard. During the COVID pandemic, many museums, even traditional ones, took an interest in VR formats as a means of maintaining contact with their audiences—but it's also a way of renewing their content offer. What's more, there are an increasing number of museums that combine digital art and contemporary art. [...] This is truly a new discipline, a new field in its own right.

For Bouchard, the challenge, above all, is to continue to believe in and support works that are complex and well-crafted and to connect with audiences beyond the easy options provided by the already established languages of video games.

PB

Although standard formats have not yet been defined, I think the public is beginning to be familiar with terms such as virtual reality, augmented reality, and so on. The aim at the moment is not necessarily to define a distribution standard. Instead, we need to put forward works that are singular and that encourage dialogue between viewers and the technology—and that's precisely what's exciting about today's independent works. [...] The key is to be able to show that. The challenge for distribution is how best to support the work.

Of course, providing the required support sometimes means having to educate platform operators about the incredible potential of certain content. Conversely, we may need to educate creators on the need to adapt their work to reach audiences more effectively on certain platforms.

MS

Do you think it's still evolving as a field?

PB

Yes, enormously and quickly. Just three or four years ago, you needed a specific and super-powerful computer connected to a headset and specific controls in order to experience certain VR content. Implementation was complex and, therefore, onerous. Today, we're able to create or adapt comparable experiences and show them with fewer technical constraints, notably thanks to wireless headsets like Oculus Quest. Things are also evolving in terms of usage and different and recognizable markets are beginning to emerge. There's video gaming, clearly, with online stores and easy-to-use Oculus Quest headsets that attract an audience. I've looked at sales figures, and it's true that Oculus Quest is doing very well. An at-home consumer market is being developed, but this offering falls in the category of entertainment. On the indie artistic side, more development is occurring in exhibition spaces, as I've mentioned. More and more, we're working with digital art biennales and digital art spaces that we hadn't even identified two or three years ago and with which we've entered into interesting discussions since they're keen to show these works.

As an example of works that have adjusted well to different formats, Bouchard mentions *Ayahuasca – Kosmik Journey*. This work has toured festivals, enjoyed success online, and is pursuing a successful and long exhibition stint around the world.

PB

What we've accomplished for Atlas V on *Ayahuasca* is very encouraging. It's a work that has had both a great festival career and a successful online launch. It's been getting quite a bit of attention, and I think the viewing scores and online sales figures are pretty good. At Diversion cinema, we worked hard to implement a turnkey exhibition for *Ayahuasca – The Shamanic Exhibition* and to take it to places that had, until then, shown headset-assisted VR works only as part of larger exhibitions. That was the case at the Digital Art Center in Taipei, Taiwan. We also showed the work at the Eye Filmmuseum in Amsterdam. There are requests from various places in Europe, which is very encouraging since we're not selling only a VR work but also an immersive exhibition concept around the VR work.

For this work, as is the case for others, the network is sustained by establishing direct relationships and nurturing potential (that is, not yet established) distribution venues.

PB

Our decision to work on a project follows a meeting with the team, including producers, directors, and artists who inspire us and with whom we get on well and who share our vision. We meet at various markets, including traditional co-production markets and major festivals or through certain networks. We're getting closer and closer to certain digital art networks, where we meet very interesting artists. There are events like MUTEK, which I took part in online in September 2020. At these events, we meet artists and folks engaged in experimentation who are active in areas that are, from our perspective, off the beaten track.

[...]

I work closely with my colleague Agata Di Tommaso. Agata handles partner relations, festivals, and non-commercial events. We work with more than 250 festivals events yearly. This is a distribution channel that is important for the visibility of VR works and that allows us to monetize the works since many festivals and events pay broadcasting rights.

This is a distribution channel that needs to be cultivated even if it's very time-consuming to submit works, follow up on their delivery, and ensure they're shown under favourable conditions. It's a full-time job and part of the work we do for the producers we represent. Also, we have several partners in different locations who have been working on XR for some time, who show works in exhibitions, festivals, or private events and who regularly program our works. We have such partners in China, Japan (more recently), Korea, and Taiwan. Also increasingly in Eastern Europe, in Northern Europe, and in the United States, which is a market we rely on a lot today.

This is a non-negligible distribution channel, though it is time-consuming to submit works, follow up on their delivery, and ensure that they are shown under favourable conditions. It is a full-time job and part of the work we do for the producers we represent.

Paul Bouchard — Diversion cinema, Paris

MS

PB

How do you sell the works, and what do the creators get?

There are several markets: the festival market, the venue market for one-off exhibitions, physical venues, and the online market.

The festival market operates in two stages. First, there are the festivals to which we submit work and whose selection provides us with visibility for the works and the ability to create value for our projects. Then, there are what I would call category-B festivals that are more regional in nature with much more limited international outreach, which are funded differently. With these festivals, we negotiate broadcasting rights. The festival pays a fee that can range from \$200 or \$300 to \$500 or \$600 for some events. These are not large amounts, but the figure can sometimes be substantial, which brings in money on some projects.

Next, there are two formats for the commercial use of one-off exhibitions. We prefer the use of licence fees where we agree on an amount with venue operators. This is a very productive format if you find the right partners. It allows you to monetize and exhibit the works over a longer period. In such cases, of course, you have to take logistics into account because certain venues aren't necessarily well-equipped enough to exhibit XR works.

Then, there's the online market. The works we represent are not online store-oriented products. Whenever appropriate, however, certain works can be sold to certain platforms. For instance, we can sell the rights to telecom companies that launch their own platform or to independent platforms or we can put the works up at online stores. To date, regarding the works I represent, we've negotiated interesting deals with telecoms. I hope this side of the business will continue to develop... Even more interesting are the telecoms that want to build catalogues so as to provide customers with variety. I have very little information, however, on public feedback on that front, so we'll just have to wait and see.

Bouchard notes that in its efforts to distribute works over the past few years, the company has certainly made deals with different platforms; however, these transactions don't add up to an established market since they all had very different models and pursued different objectives. The areas where the company believes practices are taking root are installations, LBEs, and museums.

PB

It seems to me that installations that require, or at least are enhanced by, a unique and fitting installation device are more likely to be commercially successful. [...] The installation has to be viable. It can't be too onerous. It must be able to travel. It has to be amenable to duplication. These are challenges that we know well at Diversion cinema because of the services we offer. As a result, we're called on to install and operate diverse works. So, in conjunction with our distribution department, we can work with producers and creators to reconcile their artistic aspirations and the need to reach out to audiences.

Paul Bouchard notes that although the company is one of the few that are recognized for their impressive range of activities and specialization in distribution, getting pre-sales for works is still too complicated an undertaking in the current context. "You have to find different resources and places where you can get early funding for works, but it's still very hard to pre-sell works on potential distribution channels. In some countries, there are of course funding programs, but the amounts involved are very small."

Despite everything, Bouchard sees in the sector's evolution a guarantee of optimistic growth for the tools that are already in place, leading, in the near future, to the development of an actual market.

PB With everything that's going on in the digital art world, there are still strong enough networks to ensure that well-made works can, say over the course of a year, travel to almost all continents, be shown in various countries, be exhibited at genuine exhibition venues, and be remunerated. So, things tend to fall into place.

The specialization that is still sorely lacking is the ability to provide supporting activities aimed at circulating works.

PB On the last installation works we represented, there was always a test phase. It's about conducting real-world tests to check how robust the installation is, what the turnover capacity is, UX design (sometimes), and the on-boarding and off-boarding speeches, etc. This leads to the drafting of instructions for use and troubleshooting and mediation booklets. It's very important to speak with the producer and creator before delivering the project because they won't necessarily have thought about all the constraints relating to exhibition rooms, museums, or even actual operating conditions.

MS So, there should be more companies dedicated to distribution?

PB VR distribution channels aren't as standardized as AV channels. Each work can have its own distribution logic. So, experimentation may be required, [...] we're compelled to make certain choices, sometimes reluctantly. There are works we'd like to support so as to achieve certain goals, but we can't. [...] It would be great if there were also other people who tried other possibilities, who tried to do things differently with other works so that we can all benefit. "The more, the merrier," I say. If more people get involved, the more interesting it'll be. The best is yet to come.

MS What spells success for VR works?

PB Well, to be viewed by audiences without losing money. [...] We haven't found yet the goose that lays the golden egg: the production that earns us millions. Sales of rights on certain works earn us about 40,000 or 50,000 euros. These aren't huge sums. [...] If you can tell artists that you can get their work shown, that everyone involved can make a little money, and that audiences like the work—that's great. But that's hardly the reality for most works! There are many works that are of high quality, interesting, and get shown at festivals, but don't meet with success—even though artists and producers may have spent three years of their lives developing them.

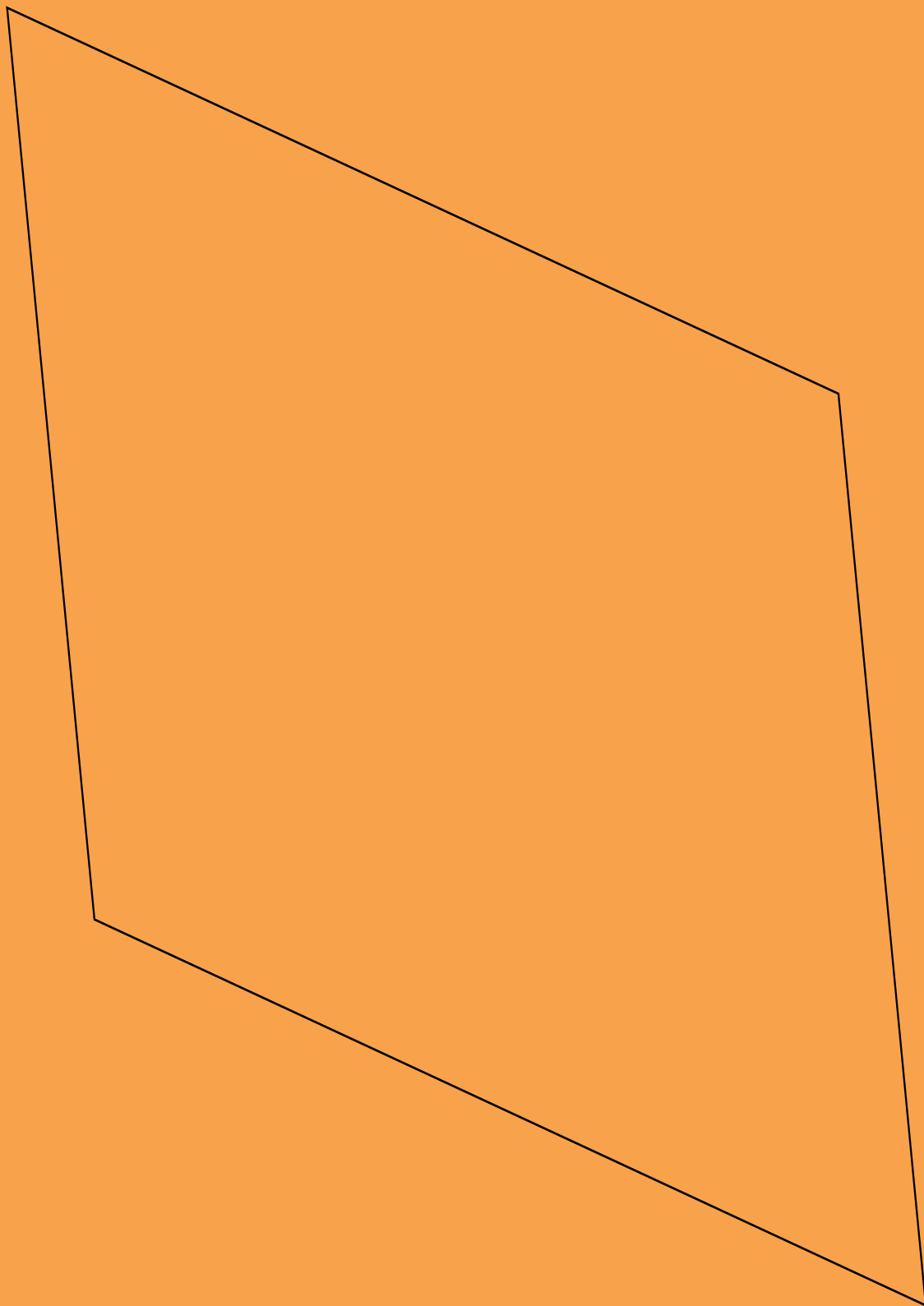
Overall, the view at Diversion cinema is that the future of XR is absolutely promising and bursting with individuals and companies who will benefit from curating, circulating, and distributing independent XR content.

PB I think that the goal at the moment is to build a market, extend the network, and develop uses. It's about showing our partners that they can exhibit an XR experience without flirting with bankruptcy or suffering undue complications. For us, one way to achieve this is to find good exhibition formats to get the works to travel, which is something we enjoy doing. And I think we're still in an experimental phase.

I believe that if more people get involved, the more interesting it will be. The best is yet to come.

Paul Bouchard — Diversion cinema, Paris

3 — Distribution and Curation of Independent XR Experimentation and Collaboration



The challenges and opportunities facing producers and creators of independent XR content are strongly intertwined with their capacity to find support, spaces, and a network of actors dedicated to distributing XR content. Chapter 3 thus focuses on the *perspective of individuals, events, and locations specialized in the circulation, distribution, and exhibition of independent XR works*.

In today's context, the discoverability of independent XR works is highly related to the curation and programming of exhibition events and venues. In 2020, COVID-19 brought about a drastic change in terms of the ways many had to rethink their relationships to the public. This chapter focuses on new limitations and opportunities for curating and showcasing a repertoire of different XR experiences, installations, and projects.

Case study: We explore the case of *Venice VR Expanded*, learning key lessons from its unique long-term strategy for creating renewable XR offerings.

Key Learnings

For XR creators	<ul style="list-style-type: none"> — Build for accessibility: Design the user experience of festivals so that it is as easy and painless as possible for users to access the festival content. — Compromising on user experience can also mean risking losing returning audiences and thus, customers. — The need for specialized XR producers and distributors. — Importance of IP ownership.
For funders/supporters	<ul style="list-style-type: none"> — Lack of support for XR distribution practices. — Establishing context when you curate a selection of XR content. — Importance of leaving room for R&D and platform exploration when supporting projects. — Hybridity as a strategy to widen audiences and ensure returning users.
For analysts/pundits	<ul style="list-style-type: none"> — Establishing context when you curate a selection of XR content. — Museums, biennales, festivals, and LBE spaces show greater interest in XR than before. — Clearer standards for such formats—to facilitate circulation and distribution. — Adding quirks and shared social spaces to immersive worlds as new media practices.

3 — Distribution and Curation of Independent XR

Experimentation and Collaboration

This chapter raises the questions and issues related to actors who focus specifically on the distribution and curation of XR works and experiences. Companies like Diversion cinema, of course, show that they can be viable by solely focusing on distribution strategies, becoming intermediaries between production and broadcasting. However, as we'll see, distributors are not the only key actors in high demand within this nascent sector.

Festival circuits and emerging location-based venues have played, and continue to play, crucial roles in how immersive media itself continues to evolve—how it opens doors to new formats, how it educates the public on what immersive media can mean, and how new players and new circulation opportunities can come to light.

With LBE experiences and projects gaining in public interest, we've also seen new modes of distribution and exhibition partnerships emerge—such as increasing numbers of innovative collaborations made with museums, public libraries, and networks of universities, as well as digital venues, pop-up events, etc.

Here too, respondents interviewed for this study have highlighted that digital art producers and newly established distributors are struggling to create a dedicated space and new ways to bring content, meaning, and entertainment to a burgeoning public. Reaching out to this public and feeding it a new taste for immersive media, is on everyone's minds. That said, the question of how to do so is where we see strategies diverge.

In the context of this study, we wanted to learn from individuals whose role is clearly not tied to producing, but rather who focus on curating, programming, selecting, and circulating particular independent XR works: festival directors and programmers; distributors; heads of platforms (Oculus); curators of digital arts, museums, or new LBE exhibition spaces; and new middle players who are working at building and selling catalogues of immersive content.

In interviewing some of the key actors currently circulating in independent XR, we wanted to know: From the point of view of festivals, what tools or points of reference for licences and deals do they refer to? What do they consider to be today's main circulation or distribution challenges? Do they aim to represent a variety of works? What stands out when thinking of distribution agreements, licences, fees? What about time limits and territorial limitations? What about short-term versus long-term exhibits? What works best and what are the biggest hurdles as relates to XR's costs of circulation or of setting up installations?

As we have seen in previous chapters, a constantly changing environment means that multi-skilled teams have to develop creative consumer-facing content experiences enabled by immersive technologies, while always acknowledging the constant state of uncertainty all actors are faced with. This becomes especially true for distribution.

As the research results demonstrate, distributors and curators still seem to consider content quality and user experience as their priorities that need to be designed for specifically based on the chosen medium and how it has changed over time.

3.1 — Enticing Audi- ence Demand or Responding to It?

Content may be purely digital, or, in the case of location-based projects, it may incorporate live performance or a physical set. Different content may also be intended for different distribution methods, including at-home online distribution, on-the-go (see PHI), or as an LBE as part of a fixed installation or exhibit in a specified location, with no user-owned device required. Experiences can be delivered through the Internet, through social XR channels, or make use of a combination of all the above.

Whatever the distribution method, respondents mentioned a clear need to better identify the intended audiences to target, and to try to refine the currently blurry understanding of what will appeal to said emerging audience, and how they can best access innovative work.

As we tried to understand how circulation, distribution, and exhibition specialists conceived their relationships to an audience, it became clear that here too, many were highlighting the crucial role that festivals and cultural events have played in establishing immersive media—VR, AR, and XR—as more than just content you can find on a gaming platform:

If you're asking whether there is a market for XR... there is! It's a game market. But for us [at the Eye Filmmuseum], my job as a curator or programmer is always to follow the avant-garde of film. We don't want to see what the game market already knows. We want what is ahead [...] I also work with a lot of art academies and follow the artists and from this, as a programmer, I'm directed toward the future. What is going to be the next step? **Anna Abrahams — Eye Filmmuseum, Amsterdam**

This notion of not responding to demand and a nascent public's curiosity, but rather creating interest and foreseeing demand for the future was echoed by many programmers at high-visibility festivals:

I was kind of carrying forward that strong belief that [...] to be able to tell stories that were not in the middle of a mainstream mechanic for framework, you needed more tools. And those stories were just manifesting, they were inventing, they were coming in new packages with new tools, and I was very interested because these are the stories that spoke to me. **Shari Frilot — Sundance New Frontier, Park City**

For emerging XR LBEs and festivals, the goal is to create a space where the audience can engage, in part, with the latest innovations in technology, responding to a demand for curiosity about “future tools and trends,” but simultaneously opening doors for them to understand that the very same medium can support new types of experiences, expressive formats, collective experiences and, of course, of storytelling. In other words, many see it as their mission to get people excited about VR, AR, and XR more generally, thus helping build an audience first, and believing the market will inevitably follow.

And in a way, it has worked. It is also important to note, though, that while this belief is shared by many exhibit spaces, such as PHI and the Eye Filmmuseum, they become somewhat specialized in the circulation of independent XR within their own respective networks. Content can either be commissioned or produced by themselves, when not acquired from independent producers. This is clearly a different reality and entails different business and monetization goals than would apply for a festival.

Staying Close to One's Audience

One of the factors that is most cited by specialists in XR circulation and distribution is the importance of being able to listen well and stay close to one's audience. This audience's experience remains, for many, the end goal of their work—not the content, the platform, or the prestige, but the experience of a user putting on a headset for the first time. When identifying their biggest concerns and challenges, respondents most often cited UX and ease-of-access issues as barriers to use of immersive tech.

Designing immersive experiences for an audience is notoriously difficult and, as many have noted, it takes years of iterations and development to get it right. In 2019, the community made some immense strides. With LBE venues and experiences on the rise, we've seen how many more members of the public started to attend independent XR shows and venues. This phenomenon served as an inspiration to many. In the US, as much as 30% of XR creators and producers, but also LBE venues, planned on putting in place location-based experiences for monetization.

The growing interest in accessing XR projects by going to see a show, an exhibit, or a collection of projects—instead of by using a headset at home—seemed to attract so many visitors, that the growing interest inevitably started to leave room for more experimental, independent, narrative-based projects and prototypes:

Most of the work [showcased] is always an installation. It's not part of the big exhibition because it stands there for three months, and it has to have a lot of people passing through—and of course with VR, as you know, it's complicated. So usually, you have only a few headsets and you always need to help people put them on. But I always find places in the building where I can present these works. For the rest, it's installations that really work. **Anna Abrahams — Eye Filmmuseum, Amsterdam**

Even among festivals that were mostly publicly funded, many had increasingly started to establish partnerships with other physical spaces, museums, and venues to make it so that wider, more experimental exhibits conceived for multiple users, or for specific location-based approaches, could find their audiences and respond to growing public interest.

And this attempt to try to remain attentive to what interests the public, while also making sure content presented can be innovative enough to surprise said public—and offer a glimpse into their future interest—is really presented by respondents as growing in parallel, yet with perhaps slightly more importance, than ensuring monetization from circulation activities. The perspective of Shari Frilot, Chief Curator of Sundance New Frontier, on this particular balancing act is quite evocative:

It's always awkward for me to have these conversations about the business of VR... Because it's actually just brand new, right? A new technology that's just at a time where a whole suite of technologies [is] also very new, and growing and engaging, every year. So, I go back into what artists are doing, with this whole new suite of technologies coming together. And it's very powerful. And it is well connected to something that is a multibillion-dollar industry and this is why we're talking about business. But honestly, I'm interested in how artists are taking on the task of expressing themselves to the landscape that they live in. And in ways that crack open new perspectives, in ways that enable new communities, and in ways that make our society more capacious. More people can contribute and have a voice. So, I'm interested in that—that's the innovation. **Shari Frilot — Sundance New Frontier, Park City**

A lot of technologies are also being developed for other fields, but we have to make sure that storytelling remains at the forefront.

Ingrid Kopp — Electric South, Cape Town

Frilot's comments echo many other voices we have also interviewed. In particular, they're connected to the need and desire that were expressed to ensure diversity remains a crucial objective in how XR works are conceived and promoted, as much as curated and circulated. Actors that were interviewed felt they needed to invest themselves in fostering greater diversity in the field now, to enable equity and ensure that more "futures" could be presented to a nascent public. Otherwise, only a handful of venture-capital- and trust-fund-backed artists will succeed—which would result in plummeting public interest. Striking this balance is therefore an important ethical, but also strategic, way of ensuring greater for the medium.

I think we definitely need to think of issues in terms of generational and gender disparity—of who creates and who accesses these works. [...] Teens are doing tremendous work right now, creating worlds in the metaverse. A lot of technologies are also being developed for other fields, but we have to make sure that storytelling remains at the forefront. That different types of storytelling are at the forefront. **Ingrid Kopp — Electric South, Cape Town**

In addition, festivals and LBE venues are not the only actors that believe diversity is the only way to ensure sustainability within the sector. Although, stores and gaming platforms were identified as providing offerings that were "more mainstream" and strongly influenced by the gaming public and gamer culture, we were reassured by their conception of the importance of diversity—independent XR is considered something that inevitably has its place within a healthy future XR ecosystem:

I really believe that if there is hope of creating distribution scalability and, of course, monetization. It's really a rejiggering of mindsets of who you're making it for, and why. And really having a deep understanding of educating [about] what this medium is, getting new types of works out there, and making it for an audience versus just making it for yourself, for a store, or for buyers... It's really important. **Yelena Rachitsky — Meta [Oculus], San Francisco**

The end goal, in this case, is really to conceive of diversity of genres, voices, and makers as a way to ensure public interest in the long run, and not only consider current consumers as the target audience:

More independent experiences: It's hard to get it running on the store for now. But we're always paying attention and interested in supporting and following particular projects. [...] Facebook's³⁶ really into VR for the long run and I think it knows the importance of investing in exploring emergent experiences to understand what else can be made alongside the things that we already know people want now, like games. **Yelena Rachitsky — Meta [Oculus], San Francisco**

³⁶ At the time in 2021 that all interviews with Yelena Rachitsky were conducted for this study, she was an employee of the Oculus wing within Facebook. Since, both brands have been merged under the "Meta" umbrella.

Making sure new experiences and independent projects find their audience is thus exciting for many actors in the field who specialize in circulation, curation, or distribution. That said, not every venue, platform, or festival is prepared at the same level.

Here too, many highlighted the need to knock on and open up new collaborators' doors, evangelize about the importance of "new" or "different" work that falls outside of games, and even educate others on the implications of installations and technical setups. After all, at least a computer is required to run the experiences. Setups either require, for LBE projects, special preparations and spaces, or for stores, special technical requirements that are bound to change.

In this context, initiatives like LucidWeb are also trying to ensure that XR experiences are rendered more accessible by betting on innovations in WebVR and WebXR. In the case of LucidWeb, for instance, the only projects that are supported are 360° videos, but the LucidWeb team still believes that what should be learned from their approach has to do with the tremendous modularity of the *how* around an audience accessing content—on whatever device they may want to use, be it a phone, a computer, a headset, etc.

The case of the National Film Board of Canada (NFB) is interesting to note. As a public distributor, the NFB considers it an institutional mission to stand out in terms of how it chooses to reach its audiences. For one thing, too close of a partnership with a specific store or technology can be considered governmental favouritism. In addition, remaining tech agnostic allows the NFB to be in spaces that private players have yet to reach, all while continuing to adapt and have a presence where it doesn't have one yet. The NFB recently stated, for instance, that it chooses to stand out on two levels: It will continue to offer face-to-face viewing experiences of its works, through public screenings across Canada and around the world, and will continue to increase the accessibility of its productions by exploring formats that aren't tethered to a particular technology, platform, or company. Furthermore, they hope to also accomplish this by augmenting their discoverability on digital platforms, where an increasing number of Canadians consume audiovisual content.

To remain close to its audience, the NFB has stated that it plans to use all its distribution channels, whether they be festivals, cinemas, social media, schools, or community and public screenings in various communities and among different groups of interest across Canada.

This strategy is like the one described by our respondent at the Kaohsiung VR Lab in Taiwan. They too feel support for independent XR experiences is crucial in allowing the institution to survive long enough that it can expand, grow, and even help establish a market:

Facebook's really into VR for the long run and I think it knows the importance of investing in exploring emergent experiences to understand what else can be made alongside the things that we already know people want now, like games.

Yelena Rachitsky — Meta [Oculus], San Francisco

3.2 — The Pandemic Crisis and New Opportunities for Experimentation

We have a lot of gaming offers and venues in Taiwan: shooting arcades, escape games, haunted houses... That's why we present the VR film lab as a space for other types of experiments. For most VR creators, it's not that easy to find a way to sell their job. VR creation takes a lot of money. It's hard to live on that, but it's what is going to create a real public for the future. **Sebox Hong**
— **Kaohsiung VR FILM LAB (Kaohsiung)**

In a way, many consider it their end goal to ensure works can circulate. For festivals in particular, it can be complex—and even counterintuitive—to understand the place of their work as part of a “distribution” strategy. As Shari Frilot highlights:

Speaking of distribution... that's the industry. The circulation is what we do. The circulation, you know, speaks to the value of what we're trying to get at and create, especially at this nascent stage of the industry, or this being any kind of part of a nascent industry. But certainly, we want it to expand. And circulating innovative, experimental work that speaks and says something... You get to the technology and the UX and the UI. And it's just not there. **Shari Frilot** — **Sundance New Frontier, Park City**

Most respondents raised the feeling that the sector's crucial activity still needed to remain at a certain stage of R&D—as many say they aren't sure the sector is able to already establish particular standards since it is still trying to test what works best with a nascent, growing public.

The way that works are curated and programmed offers a view into what exists, what's being developed, what can work, what doesn't, and what new things can be tried. If some believe at-home experiences may extend into a market one day, others aren't as sure if that's the market they are more likely to see evolve:

I'm not sure what it will be... I think that people will use XR for other reasons [than] we're expecting them to. For instance, I love working out in VR... My husband also likes training in XR and AR... but for storytelling, I still prefer going to a festival. I love beautiful installations... It's a whole other type of work and reason for accessing XR. Downloading an experience on a headset is not as powerful as an installation. **Ingrid Kopp** — **Electric South, Cape Town**

In a way, the hope seems to be that XR will not always remain so niche, particularly as the equipment gets lighter, headsets get smaller and become untethered, and the overall tools become cheaper and easier to handle. However, people “getting used to XR” doesn't seem to be in contradiction, for many, with the need to continue to support and showcase “uncomfortable” unexpected explorations of technology:

I have not been buying any equipment for the Eye, because until now, you need something new again every year or so. If you buy the equipment, it will be old within a year. There's no standardization yet. And we don't want that [...] We prefer to rent it or try to get it sponsored. And often also, the artists bring their own equipment. **Anna Abrahams** — **Eye Filmmuseum, Amsterdam**

This dual way of conceiving of the ways of making experiences more mainstream and reaching a wider audience, while simultaneously supporting the more niche audience of early adopters and the tech- or innovation-curious, seems to have been heightened by the 2020 pandemic crisis.

Indeed, as many were foreseeing that 2020 would be the most promising and money-making year ever for LBE XR experiences and marketing, many events were cancelled, exhibit spaces were closed, and major festivals such as SXSW, Tribeca, and Venice witnessed a true menace causing them to close up shop. All LBE's hopes came crashing down.

However, the community of innovators within the XR field is quick on its feet, and highly resilient. Surprisingly, while we were conducting the study, we didn't note as much pessimism as one might have expected. Rather, many saw the situation as a much-needed push, a sort of inspiration and a "kick in the rear" to do what many knew would come into focus anyways—namely, the need to rethink clunky distribution and programming models and start to explore new hybrid forms that would allow audiences to access independent XR at venues or at home—a hybrid approach to XR circulation.

As Michel Reilhac, co-curator of Venice VR, put it: "In a way, it forced us to rethink the way we were sharing and engaging with our audience. And it's all for [the] good... There is no turning back."

For the XR producers we polled, as much as those interviewed, festival cancellations clearly meant a reduction in the number of projects circulating locally and internationally. However, many producers were also very optimistic and welcomed the opportunity to revisit models of circulating their experiences and work.

New COVID-19 lockdown limitations, combined with learning from inspiring trial and error, pushed many XR producers, festivals, and distributors to double down on their digital offering. The result has been a series of festivals—Tribeca, Sundance, Raindance Immersive, the London Film Festival, IDFA and the Venice Film Festival—choosing to offer a hybrid program for the first time, combining limited location-based experiences with a new way to exhibit selected projects online, made available to the public through ticketing and accessible either in desktop mode or in VR (for members of the public who owned a headset).

This hybridity proved beneficial but could also be tricky. Obviously, for audience members, being present at the festival would be the easiest way to access content with direct support when needed: You buy a ticket, wait for your turn, get help from an assistant or employee of the venue to set up the equipment, and can ask for help when in trouble. However, getting to a festival, particularly during COVID, could also prove costly, complicated, and would be reserved to a select few. The ability to access independent XR from high-visibility events via online content opened up the festival experience to many who wouldn't have otherwise attended. On the other hand, as we've seen, stores and platforms custom made for occasional events can also prove quite tedious.

For many festivals, a hybrid format enabled visitors to access limited but unique festival content, either via standalone experiences available through tethered VR headsets or via websites themselves (for 360-degree videos, for instance). Festivals' hybrid offerings also often included creating a form of lobby space, where visitors could access the works being presented, mingle, meet and greet, or simply discuss the content some were unable to successfully access.

There is no turning back.

Michel Reilhac — Venice VR, MELANGE, Amsterdam

Such social VR platforms became attractions in their own right. In many cases, they also helped expand the range of festivalgoers who could become interested in the festivals' XR sections. It even attracted a vibrant community of social VR users, such as the *VRChat* community, which festivals could then suddenly tap into.

Some events decided to bet on partnerships with the major stores such as VIVEPORT and Oculus TV to deliver festival content. HTC has been an ardent supporter of the immersive arts overall and had already established a beneficial relationship with the Venice Film Festival and the London Film Festival to get the experiences in people's hands. According to the individuals interviewed, browsing VIVEPORT and Oculus TV was fairly straightforward. Many even suggested that the collaboration was so fruitful that the platforms should consider taking further steps in future to support festivals via their distribution services:

We made partnerships with VIVEPORT. And some of the projects we had for the festival couldn't function with the VIVEPORT parameters. So, they had many of them quality assured first—before anything goes to the publishing platform, it has to work so there's no problem if someone buys it. It works, there's no bugs. That was a huge change for us and certainly made it more fluid. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

While many considered this hybrid experiment a great exploration of the ways future events could happen, it nonetheless also helped highlight points for improvement. For instance, many found that there was generalized confusion about how to access the experiences. While the users sometimes enjoyed losing themselves in the social VR lobby spaces, that interface didn't always allow users to actually access the festival's highly curated pieces. Lack of knowledge and unclear instructions meant that it was more difficult for people to access everything on offer and some remembered the social experience more than they did projects themselves. While that could still be considered a win for festivals, the same couldn't be said for producers who relied on said festivals to increase their visibility.

Some festivals also wished there was more support from commercial platforms, including about how they could help independent work be accessed by interested audiences, both during the festival and after it concluded:

The VR sector likes to reinvent itself. And with festivals, our partners with whom we interact a lot, we are thinking about hybridization, that is, events that are both physical and online. The online version should not be thought of as a saviour, but rather as an integral part of the presentation of the works. And that was somehow really hard to achieve. **Michel Reilhac — Venice VR, MELANGE, Amsterdam**

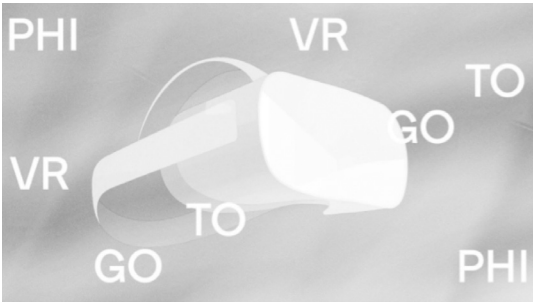
COVID restrictions also brought about new experimentation in the physical LBE space. Venues needed to generate new health protocols—and for many, the learnings about how to sanitize stations between visitors can only be beneficial in future. For instance, integrating and normalizing the use of Clean Box, a device that helps sanitize headsets using UV showers similar to those used in hospitals. Protocols had to be established for handling devices, having them returned, and ensuring there were safe spaces for visitors to explore and roam. Venue mediators and volunteers also had to learn to teach people how to adjust a headset rather than having to do so physically.

Lessons learned from this COVID-related experimentation had a massive effect on the independent XR ecosystem. As highlighted, location-based work, preparation, and setup is very hard to invest in. With pandemic-related social distancing, this became true for any medium. Allocating budget to spaces and LBE experiences, when no one knows if they will be closed down or cancelled, and without ever knowing how many people can come to it or what numbers of users will be able to access it simultaneously... is never a good investment.

That said, what was interesting in how the XR community had to quickly pivot to find solutions is the fact that it forced many to start thinking about how to modify asset production so that it could fit whatever might happen next—what parts of an experience can happen online? What can simultaneously be adapted or expanded into an LBE experience? Most of all, how can new formats address the major interest both audiences and festivals had in social VR platforms?

We built this fantastical version of Venice VR for social VR, that we had loads of fun, interactive stuff to do in. But what I've learned over the last year, is that I want to go to other worlds... Go world-hopping once or twice a week on these [social platforms]... I really think this could become a thing. **Liz Rosenthal**

— Venice VR, Power to the Pixel, London



Source: phi.ca

Finally, another experimental initiative launched in the light of early COVID restrictions that is worthy of attention is the VR TO GO experience launched by PHI on May 4, 2020, in response to the sudden closure of cultural spaces. Facing the consequences of an immediate lockdown imposed on most cultural venues, PHI felt the urge to reach out to its local audiences and keep providing the best creative VR experiences. VR TO GO brought VR headsets directly into the homes of their audiences through a combination of a headset and a content rental system. It ended up being a big success. As Myriam Achard, Chief, New Media Partnerships and PR at PHI, explained, already having 75 Oculus Go headsets on hand was naturally very helpful in quickly kicking off this unique program and using it as a testing ground.

The VR TO GO's pricing model was itself also very experimental. It initially operated at a set price of Can\$38.90 to rent it for a Tuesday-to-Friday slot and Can\$43.25 to rent it over the weekend (Friday through Monday). The rental included an Oculus Go headset, which included a multimedia player platform that was conceptualized and programmed by PHI, to minimize any friction points and really make it as much of plug-and-play experience as possible for the viewer. Content presented through this multimedia player was curated directly by PHI and featured 10 VR films showcasing an array of different styles and genres—mostly current or unique XR landmarks. It is important to note that the headset was delivered and picked up at home, and included chargers, a change of viewer, and wipes for cleaning the headset, as well as clear instructions for viewers to ensure an optimal run. After a few weeks, the curated content could change, enticing audiences to return for more.

The results were quite encouraging. At its highest point, VR TO GO reached 140 rentals per week, for a total of about 560 rentals per month. The program ran at 50% of its capacity over 50 weeks during the beginning of lockdown and reached a peak of 80% of capacity in December 2020. Demand was high enough that PHI decided to extend the program beyond lockdown and extend it to other cities as well (it is now available in both Montreal and Quebec City, and is still running as of writing, with a delivery fee at Can\$22 and free pick-up from PHI).

This experience was a good example of thinking out of the box and turning a problem into an opportunity to reach out to a new audience. PHI has extended the experiment in other parts of the world through partnerships with what would usually be competing venues—for instance, PHI launched VR TO GO in Paris, in partnership with Centquatre-Paris.

Collaborating and partnering with others facing similar problems, has been one of the major learning from these experiments. As we'll see, it may also be one of the traits that is the most unique about the XR ecosystem—where actors think of partnerships and exploration of uncharted venues first, and monetization as a future that inevitably depends on healthy diversity and collaboration within the ecosystem.

3.3 — Circulation and Distribution — For the Sake of the Market or Art?

Overall, the individuals we interviewed from both the private and the public sectors felt that there was a lack of formal structures for financing XR and digital art forms, but also that there was a particular gap when it came to supporting the circulation and distribution of independent XR works.

Many felt that financing partners (sponsors, and private or public funds), should really differentiate between production and distribution—since while supporting production is critical for XR in developing innovation, distribution has been a major challenge too. Most of the stress and risk of distribution lies solely on the shoulders of makers and producers, who by definition, aren't trained or supported in expanding and circulating works at the level required to reach profitability.

As noted in the quantitative data analysis, many festivals even recognized, for instance, that they understand that many of their venues insist that they only be self-financed by producers. In other words, taking part in a festival costs money. However, unlike in film, awards and visibility won't result in high sales. In other words, there is risk that presents no reward other than educating the public on the possibilities of the medium.

When a work earns an award at a major festival, in addition to the benefits gained in terms of boosted public interest, producers continue to help establish their chosen form of expression more generally. Furthermore, it is assumed that platforms will also gain visibility, since visitors begin to engage with more XR content, which in turn can attract new potential buyers, etc.

As many have confirmed, this amount of risk-taking is not sustainable in the long term. That said, it's important to note that festivals are often themselves reliant on public funds to be able to showcase XR works. The same goes for art exhibits and LBE venues. Ticket prices³⁷ can't be set too high, and yet, ticket revenue doesn't even begin the sums spent on presenting in such venues.

Respondents interviewed as part of the study also highlighted that a mix of financing partners would definitely help ensure the most suitable funding. The current sources of funding support to produce independent XR include:

- Public media distribution funds and grants such as those found at the national/regional/European levels: France's CNC, the US's National Endowment for the Arts, the National Film Board of Canada, Quebec's SODEC, the Canada Media Fund, Ontario Creates, the Jerusalem Film Fund, the Makor Film Fund, the Kaleidoscope Network, MEDIA – Creative Europe, and Horizon 2020's XR4ALL, among others.
- Specific grants and support for innovation, prototyping, new ways of producing content, and research and development.
- Self-funding, which can be part of the financing with a return on the backend.
- Support for outreach (attracting new audiences or audiences less familiar with digital art) and for educational uses—all of which is sought out by some producers.
- Sponsorships, including investment from partners such as telecommunication companies (Orange, AT&T), where the timing is currently right with the rollout of 5G; TV broadcasters (the Bell Fund, Israel Public Broadcasting, Sky Arts, ARTE, France Télévisions—mostly for 360° videos); and tech partners (including through community growth grants, such as Unity for Humanity or Epic MegaGrants).

That said, the equivalent doesn't exist for the circulation, curation, or distribution of XR experiences. Some museums and galleries are starting to offer limited funding opportunities and even sometimes choosing to commission new immersive artworks directly—for example, the model followed by ARTEHOUSE and the Whitney Museum with their acquisition fund to buy new-media art. However, these examples are rather rare—and not very lucrative:

³⁷ When comparing data reported by companies for 2018 against their all-time numbers, there is a negligible difference over time, suggesting that the "sweet spot" is in the \$25–\$49 range, comprising 28% of the reported pricing information. Source: *Immersive Entertainment Industry Annual Report* (2020).

My first reflex is not to think of monetization, but the quality of content. Julie [Tremblay, Executive Producer, Installations and Touring Exhibitions] and myself work hand in hand at PHI. We hope, this way, to counterbalance both sides—content and distribution potential. [...] I look for content, usually in festivals (IDFA, Cannes, Tribeca, Venice, etc.), but not only [there]. I've increasingly been to contemporary art biennales. And we get a lot of people knocking at our door directly. Not so much at first. But it's been the case these last couple of years. **Myriam Achard — PHI, Montreal**

According to some respondents, commercial platforms have also started to become a bit more supportive of exploration of immersive art forms:

You have Oculus. There's Steam and there's VIVEPORT, which is a much smaller player but very important because they're big supporters of the arts. Cher [Wang] who owns HTC in Taiwan, it was her passion to set up VIVE Arts and to set up the HTC Contents group in Taipei. And they fund some deeply experimental artistic projects, even though their platform VIVEPORT is mostly for gamers. They've been very supportive of festivals. They're a partner of ours; they want to try and curate things. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

Here too, collaboration became the key word—not only with different festivals, but with venues, online platforms, commercial stores—any strategy to ensure the ecosystem keeps growing.

Yet in this context, some have also raised concerns and suggest that more organization is needed on the creators' end. Shari Frilot, of Sundance New Frontier, suggests:

There's a lot of money on the table to do this, by people who can actually see that money on the table. But with the participation of the artist... the people who are actually creating and producing this IP, how are *they* organized? How are *they* able to position themselves in this [ecosystem] to be taken seriously and to participate fully? This is what's missing in the current landscape, in my humble opinion. And I don't think it's such a difficult thing to remedy, but it's, you know, it takes some enterprising. And we need to watch out for that. **Shari Frilot — Sundance New Frontier, Park City**

Others strongly support this view—the primacy of respecting and supporting a community of artists to ensure that innovation in this field continues:

You need to keep the creative community on par with the financial engine that opened this up. **Shari Frilot — Sundance New Frontier, Park City**

Furthermore, making sure that this creative diversity can indeed be supported, logically goes hand in hand with support for the sectors and activities that can ensure that the best and most innovative and unique projects actually get seen by unexpected new audiences. In that context, curation becomes key.

The participation of the artist... the people who are actually creating and producing this IP, how are they organized? How are they able to position themselves in this [eco-system]? This is what's missing in the current landscape.

Shari Frilot — Sundance New Frontier, Park City

3.4 — The Importance of Curation

Many individuals interviewed—whether they are on the maker spectrum or focus exclusively on monetizing tickets for events, venues, and platforms that rely on the content created by these makers—consider that the game-oriented filter of the headsets, software, and stores doesn't allow for what really pushes XR to find its audience. This is why so many festivals quickly became musts for most independent XR producers—they became one of the only places where the media, journalists, and the general public could grasp all the new possibilities of the medium.

To counterbalance this filter, one strategy is to ensure the content is so powerful and relevant that it attracts audiences that reach beyond XR:

Actually, I have the same kind of criteria that you would have for any piece of art. It has to touch people; it has to somehow give people insight into something meaningful in their life. Make them see their world in a different way. It has to be technically good. If there's some kind of urgency, it's also good that it's connected to something important in society now or in life in general. **Anna Abrahams — Eye Filmmuseum, Amsterdam**

Finding such pieces is difficult and can't reliably be accomplished through unique encounters in short-lived events and festivals. This is in part why new innovative experiences made in the independent XR sector rely on a new focus on the importance of curation.

Following Venice VR, the idea started to emerge, among many other festival curators and programmers, of creating a “festival collection.” The goal being to incorporate and associate many high-visibility festivals and represent a collection of recurrently selected projects for commercial platforms, but with money going directly to the artists.

Interestingly, stores also seemed to find it beneficial to leave curation in the hands of those in specialized roles:

For VR to succeed beyond gaming, it needs to create spaces for the other niche groups of people to find things that they connect with [...] For the moment, distributors act more like they do in gaming—it's publishing, without a middleman. But I can see the benefit of someone whose taste you trust, seeking out projects, helping shape the production, and relying on them for content. **Yelena Rachitsky — Meta [Oculus], San Francisco**

The importance of curation was also highlighted by creators and producers. For Ricardo Laganaro of ARVORE, the lack of curation on platforms is itself one of the major problems:

Like MTV [...] I think having a sort of channel... I don't know how to make it, on which platform that would make this an easy translation for the audience... sort of like what MTV did for music—find a similar model for XR. Curation of experiences, [...] good curatorship, good communication with the public, making it popular... I think it would be, for me, the holy grail for making quality narrative content in XR more accessible. **Ricardo Laganaro — ARVORE, São Paulo**

The National Film Board of Canada is also investing in curation efforts and, in particular, in finding ways to create a clearer lexicon for projects, various genres, and uses of technology. Accomplishing this would make it much easier to catalogue, curate, and diffuse creative content that people could more easily search for:

XR encompasses so many things... We need to just even start to develop and curate a nomenclature. [...] We really need to start paying more attention to the language for creativity, even for the more technical lexicon that we are using. **Louis-Richard Tremblay — National Film Board of Canada, Montreal**

If curation itself has become paramount for festivals, stores, and producers, some initiatives were quick to tap into this need, providing successful experiments that show great promise for the future. For example, the advancements in terms of offerings made by the Museum of Other Realities (MOR) and by Sandbox Immersive Festival in China.

The Museum of Other Realities is a multiplayer VR art platform designed for PC VR headsets, which presents and curates the works from over 20 artists and has it on display, accessible through what resembles a virtual museum where visitors are invited to stream and explore selected experiences. The public version of the Museum of Other Realities launched on the Oculus Store for its PC version, as well as on Steam and VIVEPORT.

It opened its virtual doors to the public free of charge as part of a limited-time partnership with Kaleidoscope and Digital Catapult and aimed to bring British VR experiences and immersive films to the next generation of art galleries. Since, MOR has started to create a similar curated selection of the best XR projects coming out of Canada (the Canadian Collection) and is doing the same with other countries.

MOR quickly became a point of reference and is highly sought out by the public, increasing the curiosity of distributors and platforms hoping to see numbers coming from this unique and rather successful experience.

In China, Sandbox Immersive Festival, the country's biggest immersive media festival, has also proven how much its curation of experiences has helped strengthen audience engagement with content. Sandbox curates content that is very varied and attempts to offer a balance of games and multi-user escape experiences—all projects that can more readily attract an audience—but also tries to promote narrative content and artistic explorations to Sandbox visitors. With COVID restrictions, Sandbox decided that they would invest in constructing and building a platform/catalogue for sharing online those games and experiences that worked best for them at their locations.

Eddie Lou, founder and executive director of Sandbox Immersive Festival, sees how much the success of LBEs can become a mark of curatorial prominence to ensure wider Chinese success for projects:

I see a curated selection available on a unique platform [as] not only good for entertainment, but also for educational content—[like] science centres—or artistic content—for example, Les Ateliers Lumières. [...] A platform is not a store. I think stores are outdated [...] A platform would enable them to present XR narrative content, but also concerts, shows with social components. **Eddie Lou — Sandbox Immersive Festival, Beijing**

Many mentioned how inspired they felt by these new curatorial initiatives. That said, it's still not clear if such new types of activities would support monetization through ticket sales or through subscriptions. Nevertheless, this creates an opportunity to re-balance the power dynamics via curation of quality content, rather than just through games' entry price points and how poorly they compare to unique narrative and creative experiences.

3.5 — Key Learnings and Recommen- dations: Focus- ing on Hybrid Practices and Sustainability

Just as producers and creators felt they had had to adapt their roles and practices to face new realities and growing demand in the immersive sector, many programmers and distributors interviewed also perceived their role in supporting the circulation of independent XR content as having greatly evolved. In particular, many of these professionals had to reconceive their roles and practices to survive the 2020 COVID-19 lockdowns and resulting closures of exhibit spaces.

In fact, while the pandemic forced many events to go virtual, others took these developments as an opportunity to try out new ways of presenting innovative XR content online. In this push to explore a more hybrid direction, many found a new way to create a more permanent and flexible relationship with a nascent audience—which they feel will remain a normal practice for the future market.

Respondents highlighted, for instance, that what would really make this curation of independent experiences a viable business model would be to capitalize on the hybrid and combined online and location-based business models, offering a diverse range of narrative-led experiences.

Yet, as many looked for answers in these new models, most had to rely on trial and error. While respondents readily shared their excitement about experimentation and hybrid approaches, these initiatives nonetheless seemed too new to give anyone the confidence to share actual numbers. Deals and licencing practices and numbers are still too low for actors in this emerging sector to want to share—but this only reinforces our belief in the need to redefine the parameters and markers through which funders, investors, and institutional support for independent XR actually measure and consider success, growth, and areas of interest in this nascent market.

For instance, we had a hard time engaging interviewees on certain questions: “What are costs of broadcasting versus the revenues?” “Are you inspired by any repertoires of works that are already available?” “If you say curation is key, how should you start to list experiences and projects that can ensure return on investment?” “What are the strategies you use to make sure a project makes it onto such curated lists?” “Are deals made with these objectives in mind?” “What are the main challenges for distribution that stand out when thinking about monetization?”

Even if we never received clear answers to these questions (the parameters often used to assess the growth of the XR sector), we nevertheless heard responses that were consistent throughout all levels of the circulation chain. Furthermore, it is from there that we believe new evaluation parameters should be derived.

We nevertheless heard responses that were consistent throughout all levels of the circulation chain. Furthermore, it is from there that we believe new evaluation parameters should be derived.

Sandra Rodriguez — Sociologist of New Media Technology, Montreal

High-quality experiences can and do attract audiences.

Sandra Rodriguez — Sociologist of New Media Technology, Montreal

As we've seen, many funds for independent XR are project based. This configuration only helps producers finish a prototype and, if lucky, a production. From there, many creators actually need to invest their own time and money to have it circulate enough that it enables them to barely keep afloat... This situation leaves each producer and creator little time or money to keep other projects coming and prepare the pipeline for the next one.

In a way, even if the XR experience has started to become a media form in its own right in the eyes of the public, it still doesn't seem to receive enough support for more long-term goals.

A key learning from the interviews conducted is that many believe distributors' and curators' roles are crucial to ensuring the sustainability of this budding sector. More direct support for these roles would ensure distributors and curators could focus themselves on enhancing and ensuring the diversity and quality of projects needed to create and solidify a more long-lived ecosystem.

Among the biggest lessons we learned from interviewing people who are focused on ensuring that such experiences stand out is that high-quality experiences can and do attract audiences. Creators and producers work hard to make sure they are selected for high-visibility venues and festivals. The very minimal funding they can receive to support distribution only supports them in this exact strategy. However, curators and festival directors insist that creators and producers should also pitch to museums and public libraries as much as any other public, high-footfall venues, where these XR formats attract wide and unexpected audiences and seem to allow for a more sustainable business model.

Diversion cinema, for instance, chose to develop a new tool, called "Viktor Roméo" (to evoke "VR"), an easy-entry station that doesn't require the presence of a dedicated VR theatre operator. Diversion cinema installed stations at a variety of spaces and venues: the BOZAR Centre in Brussels in a 20-station partnership with Universcience as part of the roaming Micro-Folies digital museum, allowing venues to take care of the VR theatre on their own; and Grand Palais's Art # Connexion with 6 stations, in the Philharmonie de Paris as part of the Expo Electro exhibition showcase of a VR kit with the -22,7° production.

In a similar way to VR TO GO, the experience supported the view that audiences are ready for more: Previous limitations associated with the complexity of showcasing a work at a specific location can clearly be compensated for through a rethinking of the platforms and multimedia players used, programmed, and offered by such venues.

Another important lesson learned related to the value curators, distributors, festival programmers and museum curators—but also commercial platforms—provide to ensure a diversity of creative voices within the XR sector.

Many were insistent about the important role that artists play within this ecosystem and how much more support they would need to ensure they can retain their IPs—and by extension, their power. That aim wouldn't simply help garner support and respect for the art form, but would also be the most efficient way to continue to attract audiences who, after all, turn to XR because they want to see something different—not more of the same:

I'm thinking that the more we can keep the artists in that new tech space, that hopefully the healthier these other ecosystems will be. I don't know if that's an overly optimistic way of thinking about it, but I am actually more bullish about VR now than I've ever been—the more it tries to create a market, the more it turns to games, the less it attracts new audiences. **Ingrid Kopp — Electric South, Cape Town**

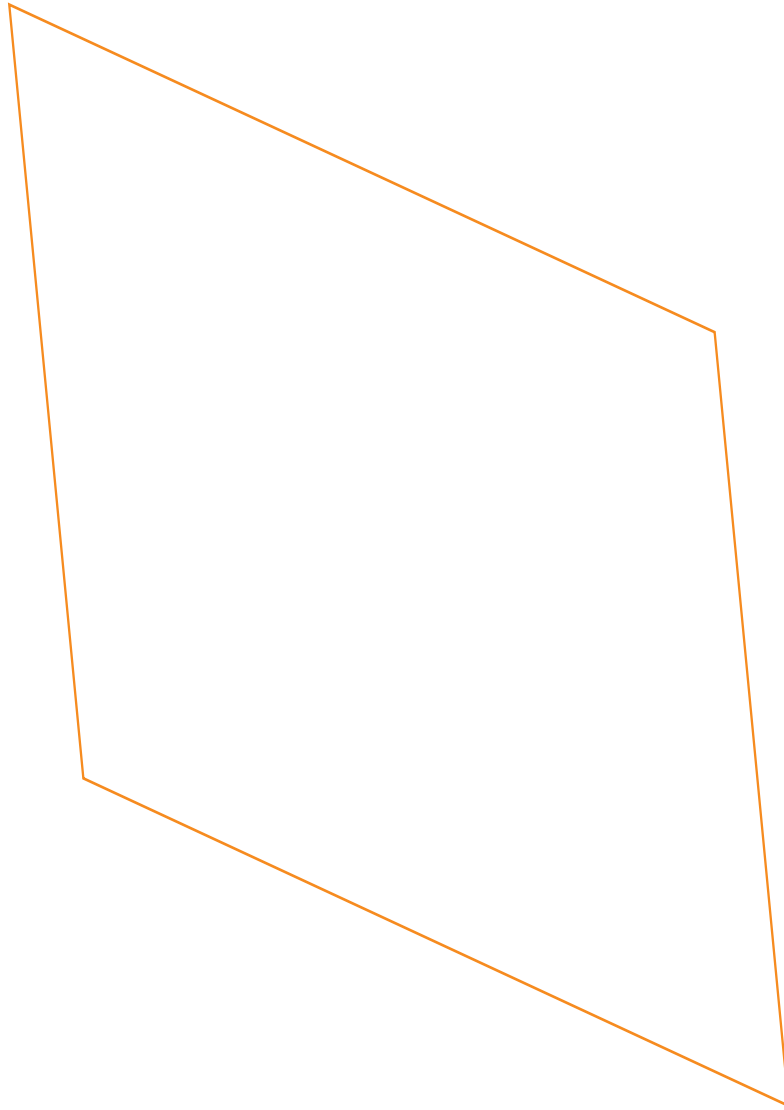
Kopp's vision echoes that of Anna Abrahams, at the Eye Filmmuseum:

We have a big responsibility because we are paid by public money... So, you have the responsibility to give this back to the public, to make things that really enrich people's lives. And I feel this responsibility also to give them really high-quality works that will remain with them and that will make them think about their world and about the medium [...] maybe that makes it more difficult but that's also part of this responsibility we have. You have to give something that is worthwhile. **Anna Abrahams — Eye Filmmuseum, Amsterdam**

In any case, a sound strategy seems to be to ensure the hybridity or flexibility of formats. Here too IP becomes of paramount importance: Producers and makers looking to grow their business on the XR landscape need a legal mindset as much as a business one. In the current context, many respondents highlighted how IP ownership is central. By extension, if digital IPs operate on an infrastructure that is owned by a (near) monopoly, a legal mind becomes necessary to understand and negotiate terms—and possibly even more importantly, to be able to envision innovative structures that advance and support a sustainable role for artists and independent content in the field.

After all, most agents are lawyers. **Liz Rosenthal — Venice VR, Power to the Pixel, London**

Key Learnings



- It is essential to establish context when curating a selection of XR content.
- Build for accessibility: Design festival user experience so that they can make content as easy and painless as possible to engage with.
- Compromising on user experience can also mean a risk of losing returning audiences and thus, customers.
- Add quirks and shared social spaces to immersive worlds. This added flair provides life and joy, which makes it fun to discover content and interact with it.
- Pick your platform wisely and test it as much as you can. (Festivals cannot risk glitches on launch day.)
- Hybridity is a way to widen audiences but also a way to create a sustainable strategy for returning consumers—and thus a sustainable strategy for monetization.

3.6 — A Case Study: Venice VR Expanded

Among the festival programmers and curators interviewed, one case seemed to stand out as an inspiration for the future of XR programming—that of Venice VR Expanded. The experience simultaneously explored new ways to interact with a festival audience and was cited by a few of our respondents as an example of future trends. The unique case of Venice VR Expanded also brought to light new opportunities and paths for curation and collaboration with other venues, festivals, and LBE spaces.

Venice VR Expanded offered a selection of virtual reality works from the 78th Venice Biennale and partnered with a network of more than 20 other venues and LBE spaces in as many cities, to open Venice VR Expanded lounges locally. In parallel, that section was also accessible online. LBE centres located in the various partner cities could each boast to be the only cultural venues in their respective countries or cities to host the festival’s selection—and could even make their own curated list out of the 30 or more selected works, the majority of which were international premieres by world-renowned studios.

For partners in this venture, the promise to the audience was a unique opportunity to experience “the best in XR”—and become part of this prestigious event without needing to go to Venice. The experience was so successful in 2020 that it was repeated in 2021.

This interview was conducted by Monique Simard, with the technical support of Philippe Bédard.

MS

How would you define yourself? I know you’ve created a virtual reality work.

MR

I’ve made 15 virtual reality films! And I’m working on the next one. So, yes, I’m continuing to produce works. But I don’t really define myself as a virtual reality auteur. I don’t have enough time to dedicate myself to it fully. [...] It’s a way for me to deal with my creative aspirations first by using VR but also by dealing with virtual reality from the inside—to understand what’s at stake, what the challenges are, what the possibilities are, but experiencing all this from the inside.

This experience has allowed Michel Reilhac to gain a better understanding of issues such as circulation and distribution since, right from the beginning of project development, he has closely dealt with the challenges that VR works face in finding viewers. So, together, we discussed the issues of distribution and, above all, discoverability.

As is the case with several other respondents, Reilhac believes there is an audience for high-quality work. The challenge is to find venues, spaces, and platforms where indie works and content can be made accessible to this audience.

MR

In my opinion, the fact that there is no real market yet is completely normal, because it’s something that’s just getting started... This is a form that is entirely dependent on users’ equipment. I mean that in this case—contrary to, for example, applications created for smartphones—to reach your audience, it needs to be equipped with completely new technology. Acquiring this technology is a bit frightening because users aren’t familiar with it, and it is constantly evolving. [...] It’s like when mobile phones first came out. I had one. It was a bulky device. People would say: “But why? What’s it for? Why are you carrying that huge thing around? It’s pointless.” But look what it’s evolved into! I think the same is true of virtual reality—it’s now at the point where mobile phones were back then. It’s unpleasant, heavy, and complicated.

As Reilhac reminds us, there wasn’t great demand for smartphones either at one time. It wasn’t the tool’s attractiveness that led to today’s market; instead, it was the industry’s perseverance that gradually gave rise to consumer demand.

The same will happen with VR. In my view, what will bring about this transformation—possibly in the next two or three years—is usage. For example, the launch of Horizon by Meta [formerly, Facebook]. I think Meta will launch its social VR platform only when it's really ready to do so. The launch of Horizon is constantly being delayed because Meta wants to get it right. It doesn't want to provide a buggy product that delivers an unreliable experience. But once it's launched, Horizon will have a significant boost on Facebook users. It will become the thing to do. The second thing that will speed up VR's development is the replacement of headsets with glasses. The moment when all you'll need to experience VR [is] glasses instead of headsets will represent a huge change. We're starting to see developments, as in the case of Facebook and Ray-Ban: collaborative agreements between platforms, eyewear manufacturers, and fashion designers, to produce collections of VR glasses. We may see Oculus glasses by Gucci and another brand by Prada. Apple has just announced that it is delaying, until 2023, the launch of its VR/AR glasses. This launch will have an enormous impact. The technology will become increasingly available to designers and products will become much sexier and easier to use. [...] I believe that the way the hardware evolves will play a critical role—and that's the reason in part that the market hasn't taken off yet.

Drawing on key takeaways from Venice VR Expanded, Reilhac insists that the lack of spaces and platforms for showcasing works is also the biggest obstacle to market development.

The potential audience for these independent works is easy to identify. It's the same as the audience that goes to virtual reality events, keeps up to date with new developments, and is curious about innovation. [...] At the moment, the problem is that the people who make up this audience—which is only a niche market in all countries—can't be brought together. Nor is there a platform or structure to bring artistic content together. Currently, you can go on Steam or Oculus and find things, but they're drowned out by a huge number of games. [...] Maybe you can also find things on a platform like Within, [which] provides free access to works that it selects. But the real issue today is how to generate revenue. That is to say, the sector that produces independent works cannot survive if it doesn't begin to generate revenue through distribution. So, the real question right now is how to create a platform or platforms that are clearly identifiable as showcases for high-quality, independent, and artistic works, and how to let an audience of curious and interested people know where they can see these works. I think the time for that is now. The industry is ready.

The example of Venice VR Expanded has demonstrated how successful these practices for consolidating content distribution can be. The public was able to identify where the selected works were presented in each city where the festival had established a partnership. The initiative opened up a new opportunity: by having a prestigious festival curate and showcase a VR work, it was possible to attract as many, if not more, visitors as a gaming or entertainment experience.

As Reilhac points out, and as we have seen as part of this research effort, there are a growing number of initiatives that strive to consolidate content and curate independent experiences. However, Reilhac reminds us that these initiatives encounter many technical difficulties because, inevitably, the only way to offer these platforms to the public is still through stores and headsets (such as Oculus Quest), which, by default, prevent these initiatives from seeing the light of day, as commercial platforms prefer to maintain their monopoly over exclusive content.

The sector that produces independent works cannot survive if it doesn't begin to generate revenue through distribution. So, the real question right now is how to create a platform or platforms that are clearly identifiable as show-cases for high-quality, independent, and artistic works, and how to let an audience of curious and interested people know where they can see these works.

Michel Reilhac — Venice VR, MELANGE, Amsterdam

MR

I'm waiting to make our selection for Venice, which we'll do in June. I can't wait to see how many projects per platform we'll receive... I expect to see a very large increase in projects for Oculus Quest at the expense of other formats. But there aren't that many alternative formats. That's why I think Chinese equipment and standards may emerge as a counterweight. But for cultural reasons, they don't have the same desire for artistic works as we do. They have to be interested in the international market and at the moment they don't need it.

The challenge for consolidating content spaces remains, on the one hand, the technology and platforms that are currently in use and, on the other, the modes of consumption they would provide the public with. There, too, Reilhac envisions a hybrid solution.

MS

Do you see this platform as subscriber-based? Or pay per view?

MR

You need to offer both options. In any case, at the start, it has to be flexible. Users have to have the option of paying a few dollars to view a work they're interested in without having to subscribe. I think there are three ways of generating revenue, namely: subscriptions; pay-per-view, where you pay to view the work once or within a 24-hour window; and pay-per-download, where you can download the work and add it to your library the way you do with games, for example. You have to have all of these options if you're going to last. [...] You can't have one at the expense of another.

According to Michel Reilhac, one of the ways to nurture and strengthen the relationship with future audiences is to remain attentive to the differences among the audiences that consume the most XR: the Asian and North American markets.

MR

I was just reading an account of statistics on virtual reality that shows that in January 2021, China represented 51% of the VR market. That's expected to increase. When I went to China, I was able to meet people who are active in the field of virtual reality and test their equipment. They make incredible things over there that we know nothing about in Europe and Canada, including devices and headsets that are getting smaller and smaller as well as lighter and more versatile. [...]

In this regard, Reilhac emphasizes the fact that practices in East Asian markets are the complete opposite of those found in the West: In China, in particular, the majority of VR content and experiences are designed as location-based entertainment (LBE), whereas in the West, the majority of distribution strategies favour at-home consumption through headsets and platforms, such as Oculus or Steam. LBEs, notes Reilhac, are growing in the West but are still in a minority position, unlike their place in the Chinese market.

MR

In China, people don't own individual headsets so much, although this is starting to change. LBEs [account] for most of the country's VR consumption. As a result, the type of work sought out for LBEs is much more spectacular, in keeping with [their] vast physical facilities. The market is different, but there's a possibility that this will change gradually and that we'll see real change emanate from China. In my view, it'll take three to five years to develop real competition against Oculus.

The Venice VR Expanded initiative also demonstrates that LBE spaces don't always have to be pre-defined. The primary objective is to find a location (platform or physical space) where the public is invited to access selected and pre-approved content lists and collections. The hybrid approach is a solution that enables production to adjust to markets while sustaining interest among various audiences. Once again this year, the Venice festival will take place physically. The section devoted to the virtual reality market will also take place physically, but presentations and exhibitions will be virtual.

These decisions are made for financial reasons and due to COVID-related restrictions. However, these choices also allow us to see other ways of developing markets, by relying on the need to curate and consolidate content, as recommended by our respondents.

To that end, Reilhac evokes a new initiative that he calls the “Festival Collection.”

MR

Being in charge of a festival, in Venice, I wondered about our effectiveness or responsibility as a festival in helping to develop this market, and what we can do to create a kind of natural extension from exhibition to promotion as represented by the selection of works to show at a festival—and to follow this through to the next step, which is to endow works with markets and revenue sources. On the one hand, as we were saying, platforms need to be created to generate a multiplier effect for works under a single banner. The platforms must be recognized for their quality and as fitting showcases for high-quality works. There’s something I’m interested in creating, and on which we’re working on at the moment, which is to develop a label of quality for platforms. For the time being, we’re calling it the “Festival Collection.” Here’s the way it works: When a work is selected by one of the main VR festivals around the world, it is automatically eligible for inclusion in this collection of works and available on the platforms. You can have films selected in Venice, at Sundance, Tribeca, South by Southwest, IDFA. [...] You’d be able to find all of these works under a single label, namely: the “Festival Collection.”

This initiative has quickly found many takers. Of course, obstacles to new distribution practices are not only technological: They’re also of a legal nature.

MR

We’ve created a collective of festivals and a task force to work on this. We’re currently in the legal phase to determine in which country we have to incorporate the collective so that it can own the label. We’re doing this solely to settle the issue of the ownership of the label. Once we’re incorporated, the label will be offered to all platforms and will consist of works that will eventually differ from one platform to another. They’ll share a key characteristic, however: a guarantee of quality resulting from the fact that they were featured at a festival.

Reilhac insists that the objective of this initiative, as was the case for the Venice VR Expanded initiative, is to explore other means of enhancing the discoverability of independent XR works and to publicize XR auteur experiences, creative projects, and works of art in a market that is being discovered.

MR

All the components are in place. [...] I think that in order to attract and encourage investment, we need to prove that there is an audience for this content. And that’s difficult to do [due to the aforementioned challenges]. But that’s why, at the moment, the solution for going forward is to create distribution platforms. That’s what will change everything.

Finally, encouraging the discoverability of works also depends on the attention given to accelerating social practices, which have nothing to do with gaming or independent XR—and which, in Reilhac’s view, are just as interesting as finished works.

MR

I think we need to expand our vision and our curating practices to include social VR. When you go to a platform like *VRChat*—which is probably the most popular platform today—you have an impressive number of people who don’t consider themselves artists at all and yet have created incredible, extraordinary worlds that are works of art that are spaces for interacting, meeting, working, and partying; and that are very exciting and open; and that serve as a hub for groups of people who engage in collaborative thinking and effort, who make films together. Recently, in *VRChat*, I saw several absolutely incredible films shot entirely within *VRChat*.

In fact, Michel Reilhac and Liz Rosenthal have both thought of creating a new approach for the next edition of Venice VR, which is increasingly based on these social platforms.

MR

We are going to create something completely new that has never been done before in a VR festival. We're going to select about 30 of the best *VRChat* worlds and we're going to provide guided tours. We're going to lead viewers by the hand from one world to the next and show them what's going on. It's the same for the creation of avatars: there's extraordinary creativity in the making of avatars. [...] There are things happening in this area that are shattering the patterns we're used to seeing in what I would call "standard productions." These are phenomena that are occurring on the margins of work production and distribution. Because these are community dynamics, dynamics of encounters and events that take place spontaneously in settings that have been created beforehand. [...] I spend a lot of time exploring these social platforms. There were about 210 of them for the Venice Biennale College.

Finally, Reilhac highlights an important component of the parameters that, to this day, govern the thinking surrounding sector growth and the assessment of the value of independent XR experiences, and which need to be overhauled. In particular, when planning or assessing a market with respect to distribution, it is important not to think of it as a duplication of traditional and existing models of distribution for films or audiovisual works. It is imperative to take into account the social dimension of these XR distribution platforms. In Reilhac's view, this is the only way that these new platforms for high-quality XR content can succeed.

MR

The people who are considering a particular distribution platform or various platforms have to include all the dynamics of social platforms and navigation within existing worlds, recognize the people who make these worlds, [and] take into account the events that take place, such as concerts—for example—fashion shows, or parties. This is another type of behaviour that becomes inherent to the use of VR. And I don't think you should consider a distribution platform merely as a kind of shop where you can pick things up. It's a friendly space where you have access to works and events, so it requires different thinking.

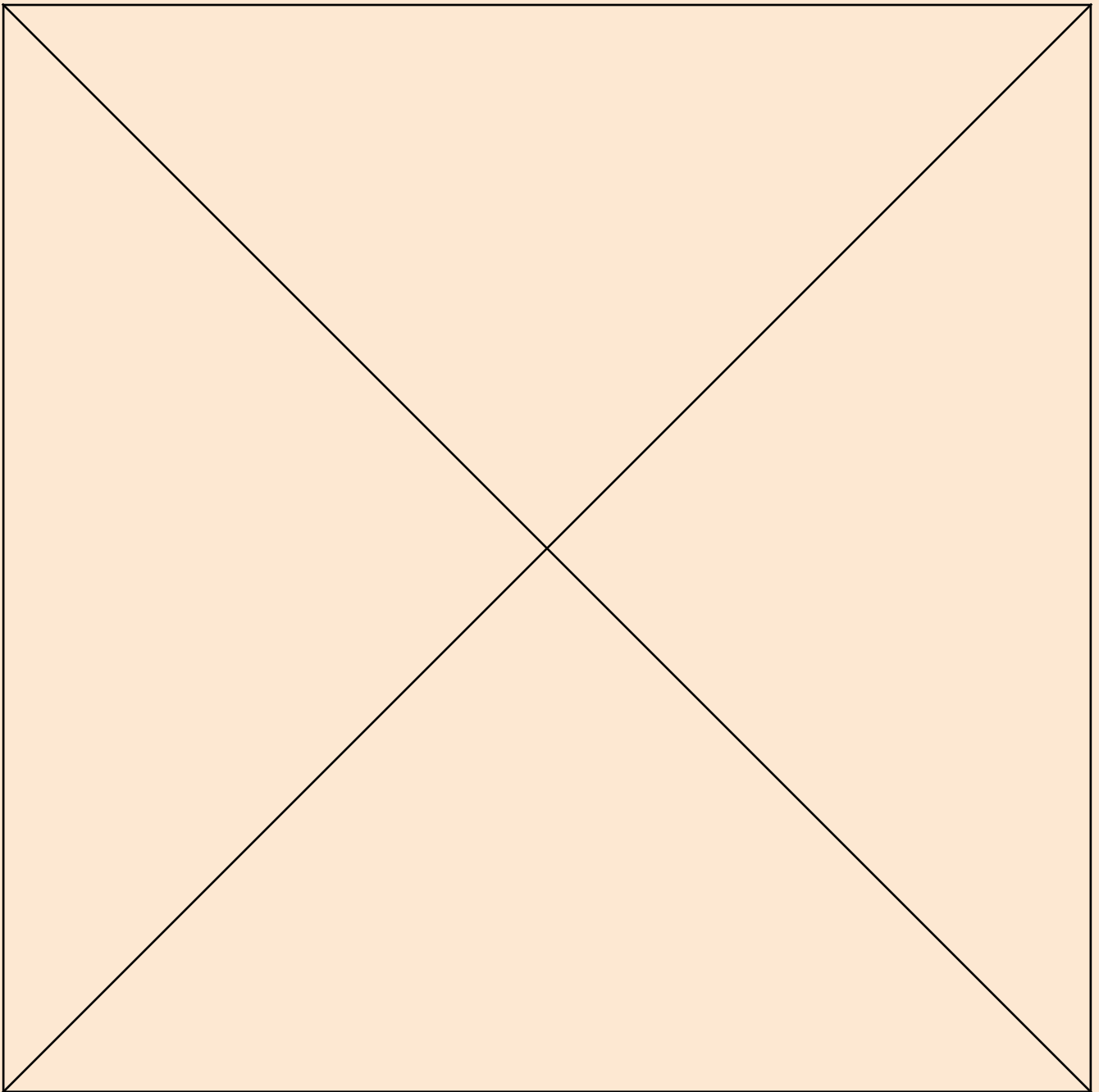
Finally, from the ideas put forward by Reilhac, we also take away the importance of heeding the communities that develop on these platforms on the fringes of the target audiences and which are, quite simply, the market forces of the future.

MR

I want to be fully aware of this. In my work, I really want to assess the impact and usefulness of the virtual reality works we create. I'm not promoting the idea that only documentary modes provide answers [...] but I think that we need to stay very aware of the ethical issues relating to what we're developing.

4 — The Elephant in the Room

Monetization Challenges and Crafting a Market



Chapters 2 and 3 have helped establish a better understanding of the needs, challenges, opportunities, and strategies of creators, producers, distributors, and exhibitors of independent XR content. However, as many respondents have highlighted, none of these efforts are sustainable without *seriously tackling the arduous question of monetization*.

Therefore, this chapter examines current technological developments that point to changes in VR and AR adoption in the near future, which could yet again force the sector into rethinking trends, practices, and strategies. We explore the realities and parameters of a market still constantly being redefined and contested.

Case study: We learn from *Marshmallow Laser Feast* and its unique approach, which combines a diversity of technologies, platforms, and partnership opportunities.

Key Learnings

For XR creators	<ul style="list-style-type: none">— Diversification of partners and increased interest from telecoms.— Hybridity and co-productions as ways to split risks, share knowledge, and expand reach.— Monetizing curation is about finding the right partners.
For funders/supporters	<ul style="list-style-type: none">— International consumption differences and trends.— Situating cultural offerings within the international market.— Ensuring legal support for IP explorations.— The need to revisit partnership and co-production models in licencing.
For analysts/pundits	<ul style="list-style-type: none">— Defining the nascent market as a commercially thriving cultural sector.— Rethinking the role of licences in expanding cultural consumption.— Hybridity and trust as valued notions.

4 — The Elephant in the Room

Monetization Challenges and Crafting a Market

Inevitably, in scouting ahead at upcoming challenges and practices in XR distribution, respondents raised questions and made comments on the state of the current market.

As we have seen, the independent XR sector is situated within a platform market that is evolving technologically and is increasingly lucrative. Nonetheless, the sector simultaneously needs to situate itself as a field within the media and arts landscape and the entertainment industry, and it also must take up its position and role in a quickly expanding market for social experiences and community building.

In the interviews conducted, we found it difficult to discuss examples of deals or clearly identify monetization possibilities: For instance, which projects sold the most? For how much? Is there “real money” to be made within independent XR? As mentioned earlier, respondents were much quicker to admit that deals and licence agreements were rather limited. Therefore, sharing them doesn’t reflect, in their perspective, the real growth of the market. Let alone the reality of quickly expanding public interest:

It’s confusing, it feels like there’s a bit of a veil around how VR distribution works right now. [...] One, there aren’t enough cases [where] this work [goes and makes] money that we can clearly know of or hear about. And two, even [among] those places or projects that do exist, a lot of people just don’t really know how it works. How they make their money. **Ingrid Kopp — Electric South, Cape Town**

Rather, conversations with interviewees pointed us to what respondents felt were more pressing issues. For instance, the need to identify emerging trends for attracting new audiences—examples of new initiatives that work and force all players to rethink the parameters through which they measure commercial success, return on investment, longevity, and sustainability.

Crafting a market, as many highlighted, takes time. However, signs keep pointing to the notion that the sector is heading in a lucrative direction. As a result, we wanted to explore a final axis with the producers, distributors, and decision-makers we met in the context of this study: What do they consider the most important tools for creators, producers, and distributors to have when they need to establish a business plan? What needs to be rethought to be able to raise new, and much needed, support from private and public funders and investors?

As a general note, for many, crafting a market meant wisely selecting one’s platforms. Monopolies among stores do not help the ecosystem grow quickly enough. Furthermore, if platforms remain tethered to headset manufacturers (such as Oculus), then the complexity of creating curated content platforms becomes even more troublesome for new distribution practices. Establishing better partnerships with said platforms was therefore one of the most important monetization issues raised.

Diversify your partners, your projects, your creation, and your production and distribution models.

Eleanor (Nell) Whitley — Marshmallow Laser Feast, London

Another facet is the need to prioritize accessibility over graphical fidelity or technical prowess. As many have highlighted, technical innovation is also itself already compromised by overreliance on the current standalone VR headset market. Therefore, new explorations on other headsets, alternate social platforms, and at LBE venues becomes a potential solution that should be explored more often.

Many of the distributors we interviewed felt it particularly important to define a scalable business model in parallel to a virtuous model, to ensure the sustainability of this very expensive new technology. When talking specifically about business models they felt worked, respondents pointed either to new practices in licencing models or raised interesting learnings from large installation ticketing models. Alternately, they took inspiration from subscription models for curated collections of XR content or named public media funds and grants, as well as commissioning and sponsorship—or even blended all these approaches together: “I think you need to diversify it all. Diversify your partners, your projects, your creation, and your production and distribution models.” (Eleanor (Nell) Whitley — Marshmallow Laser Feast, London)

Respondents listed various ways of monetizing independent XR productions:

- licencing with minimum fees on existing digital platforms
- ticket sales at festivals and museums for special events or exhibitions
- subscription models to access certain curated streams
- touring exhibitions as a way of showcasing the same content in different locations and thereby share distribution costs
- shipping headsets with special programming for at-home VR (as demonstrated during the pandemic by PHI's VR TO GO initiative launched in Montreal, Quebec, and Paris)
- bringing experiences directly to events for semi-permanent installations to attract new audiences

Today's producers, distributors, and curators of independent XR content need to simultaneously think about how to educate an audience about XR's potential, while having to currently do so on platforms that want to suggest that the answer is gaming. They also need to consider the increasing parallel practices of social uses of XR tools and headsets and the move toward remote platforms and LBEs.

In short, while there are many challenges, what helps actors in this ecosystem to navigate these complex situations is to constantly understand their own roles as being “evangelists.” This manifests as a commitment to keeping one's focus on long-term monetization goals and ensuring the growth of practices with more diversity, flexibility, and hybridity to respond and adapt to the changes and minor adjustments that will inevitably occur when looking so far into the future.

In this chapter, we'll explore some emerging practices that we feel are also good indicators of a healthy, growing sector and that demonstrate some of the emerging monetization trends in curation, as seen by our respondents.

The main goal for today is still to be evangelists for this new technology and inspire a new generation of visitors and artists.

Michel Reilhac — Venice VR, MELANGE, Amsterdam

4.1 — A Commercially Thriving Sector

The people interviewed in the context of this study highlighted that there is no “market” as such yet—and if there is a market, it’s still “nascent,” evolving, and growing. Some also clearly didn’t feel comfortable with the idea that XR could be labelled as an industry, let alone a market. Therefore, a more generally accepted classification for independent XR could be to simply consider it as a commercially thriving cultural sector.

To craft a market not only means educating the public on the possibilities of XR itself, but also educating the media, funders, and investors about the nomenclature needed to perceive where the real monetization opportunities actually lay.

For instance, an extremely popular exhibit co-produced by PHI and Felix & Paul Studios, *THE INFINITE*, attracted impressive numbers of people that weren’t usually considered main targets for XR. The experience was able to accommodate more than 100 visitors per hour. It relied on meticulous crowd management mechanics (with respect to health and social-distancing measures imposed by COVID-19), and indicated that for many, the way to plan for an alternate monetization model that embraces LBEs as much as IP parsing and fragmentation for a wide range of platforms, including stores and online (YouTube 360°):

VR is still in such an exploratory state... Even with *THE INFINITE*, we learned things that worked better, and others that still don’t work. We had breaks and glitches. We don’t know how long the headsets we’re using will be available. It’s a constant state of risk. [...] There is still a lot of communication work to be done with the public. The word “immersive” is very popular, and it actually becomes a problem for us. We need to work on the proper language to develop with the public and with the media. From one exhibit to the next, the pool of audience members we are targeting is constantly growing, and they respond to our calls. **Julie Tremblay — PHI, Montreal**

Myriam Achard and Julie Tremblay, both from PHI, feel they witnessed a huge change in how the media relates to particularities of XR exhibits. This manifested itself in press exposure for PHI’s first exhibits, then with *Carne y Arena*—which they also hosted in Montreal—to the way media then spoke of *THE INFINITE*. They feel this change demonstrates a major shift in what the general public understands XR to be, in how the media relates XR’s value as something to be experienced by families and general audiences. How experiences are described and categorized as either “niche” or “mainstream” also changes how they are valued.

Surprisingly, respondents also noted that even if this evangelization of XR seems to have successfully expanded its audience, a more mature, older crowd seems to be most receptive to this strategy. Younger VR consumers are instead exploring social VR apps in larger numbers but still don’t show up as much to these large-scale exhibits. Therefore, growth in both younger and older audiences’ attention points to two different and unexpected ways of reimagining the XR monetization and how audiences can be targeted.

I do think there is a future for at-home VR. The more exclusive content will become accessible on VR devices (concerts and theatre plays that are happening abroad and that I can experience in my home), the more I think we'll see a demand for [these types] of shows. **Julie Tremblay — PHI, Montreal**

What limits the expansion of such experiences is also how heavy the technology is, and how it currently still relies on complex and powerful computers to offer the visual graphics quality and multi-user capabilities that can make such experiences more pleasurable. However, 5G-related advancements offer new hopes for facilitating at-home distribution and enjoyment of such experiences.

Early tests have begun to explore how 5G can support more experimental high-quality, multi-user XR experiences, which has opened the door to new potential partnerships with investors that were previously reluctant to jump into XR—in particular, companies from the telecommunications sector.

4.2 — Emerging Trends, Here and Abroad

Distribution and circulation were central issues discussed with XR creators and producers, and we wanted a better idea of who they thought they could see involved in independent XR projects, today or in the future. Also, where are the promising initiatives creators and producers draw inspiration from or try to establish and follow?

The Role of Telcos

We found it surprising to hear a sizable number of respondents mention telecommunication companies as a potential new sector willing to partner in independent XR distribution. In particular, telco examples came up when discussing how to reassess promising partners with which to establish platforms for curated content.

In this regard, an emblematic case is that of Iconic Engine, which is currently the leading company in terms of the distribution and licencing of XR content. Iconic Engine is a spin-off of Digital Domain (which was founded by James Cameron in 1993) and focuses on developing content platforms for telecommunication companies.

For instance, Iconic Engine is currently negotiating with over 14 telecoms around the world, including Deutsche Telekom in Germany, Orange in France, LG Uplus in Korea, PCCW in Hong Kong, and others in China, Japan, Thailand, and Malaysia. In recent years, Iconic Engine started to also focus parts of its activity around curating XR content for telcos. Cheng explains:

We support telecoms by helping them develop their content platforms, offering to licence and distribute VR content. For my part, I'm basically focusing on acquisition and distribution. Iconic Engine currently represents about 160 studios in the world—including Atlas V, Diversion cinema, Lucid Realities, the big names. **Jimmy Cheng — Director of Content at Iconic Engine**

How experiences are described and categorized as either “niche” or “mainstream” also changes how they are valued.

Sandra Rodriguez — Sociologist of New Media Technology, Montreal

The company is notably supporting Orange in the development of their first VR platform. Jimmy Cheng, who was Director of Content at Iconic Engine at the time of this interview, highlights, there is an important reason that explains this growing relationship between VR and telecoms: the new developments in 5G technology.

We started helping telecoms build their XR offering. Iconic Engine came to me: We need someone to handle content licencing... We are supporting Orange and we need to help them with 5G [...] Big telco companies need to find a way to showcase 5G to a normal user, because even today, I would say more than 90% of people, they have no idea what 5G can do. And XR helps open [the] imagination. **Jimmy Cheng — Digital Domain, Taipei**

Of course, one could think that an easier target would be gamers, who are already on XR platforms and may also be early adopters (and therefore interested in 5G adoption as well). However, this public is actually more niche than the one open to storytelling and narrative-based entertainment. Therefore, by targeting narrative XR content, telcos see a way to offer family-oriented, inspirational, experimental projects that suggest to consumers that 5G can support a “wide array” of content—not just games. The strategy, therefore, becomes to leverage the diversity and originality of independent XR content as a proof of concept—a way to show that 5G is not just a tech gimmick and that it can be beneficial to all, no matter their taste, preferred genre, or consumer profile:

Simple home Wi-Fi is already good enough for users to stream most of the game or usual VR content they can find in stores, [for] download and upload. But telecoms are basically trying to show multiple usage, to showcase the bandwidth of 5G. So, they invest a lot of money in finding alternative ways of creating content. That’s why Orange, Deutsche Telekom—they are basically the leading telecom to step into this since 2017, or early 2018. And we’re helping them to develop the process. **Jimmy Cheng — Digital Domain, Taipei**

Surprisingly, if curation with a diversity of experiences in mind was a mantra for festivals and arts-driven venues, the same arguments seem to hold for telcos implementing a similar strategy to broaden marketing and monetization with new audiences. This is where the importance of curation remains paramount to creating such opportunities:

Telecoms want to develop their catalogue, but they don’t want to deal with 200 studios to do so... Digital Domain used to produce our own content (including XR) [...] So I thought that the best way for us to proceed is for me to build a catalogue. I started contacting every studio that was in the media, or that won big awards and asked them, “Is it possible to represent your work?” [...] I started to write emails to whatever studios I could find, whatever the email I could find on LinkedIn... **Jimmy Cheng — Digital Domain, Taipei**

We support telecoms by helping them develop their content platforms, offering to licence and distribute VR content.

Jimmy Cheng — Digital Domain, Taipei

Telecoms want to develop their catalogue, but they don't want to deal with 200 studios to do so... Digital domain used to produce our own content (including XR) [...] So I thought that the best way for us to proceed is for me to build a catalogue.

Jimmy Cheng — Digital Domain, Taipei

For Cheng, it remains important that creators be the ones to make the ultimate decisions on which licence they want to have and with whom. However, having someone create such a catalogue facilitates searchability and discoverability of projects for both ends—for the telecoms as much as for the producers themselves, who would otherwise not necessarily knock on doors they feel are too out of reach or network.

It was very hard for me at the beginning, because I think doing licencing is really based on reputation and trust. [...] I would contact producers and I would say “I am Jimmy, I’m working for Iconic Engine Digital Domain. Our background is more like a visual effects company for a lot of feature films, but we’re also working on XR distribution, platform development, and we do have potential telecoms that are looking for VR content. So, is it possible for us to represent your work and then see if we kind of find a potential licencing deal for you?” **Jimmy Cheng — Digital Domain, Taipei**

For Cheng as much as for other respondents who see a future in partnering with telcos, trust will become an issue with new distribution practices, which could possibly evolve and ease in during the next three to four years. That period would represent the time needed to create a visible return from licences signed with telcos and to understand the value that can be found in partnering with someone else to handle licences and deals.

In parallel to the 12 or so telecoms with which Iconic Engine is currently negotiating around the world, the company also has dealings with Oculus TV to support producers in licencing their content on the platform. The monetization strategy includes having Iconic Engine be part of revenue share on the licencing fee generated with the artists and producers:

BattleScar or *Gloomy Eyes*... both are interactive and have 6 degrees of freedom (6DOF), but with them, we asked that they also provide a 360° version of the same projects—which is cheaper and offers a more simple access to first users in VR—and they are very different from the 6DOF versions! But in distribution, we want to offer the best access possible to users, even if that means having two or three versions of a single project—360° video is a big thing for telecom platforms to try new experiences, to study the growth of users, and develop their platform. [...] So my advice to producers and creators is always to consider 6DOF for the bigger, flashier interactive part of it and also a 3DOF version that is lighter and easier to distribute. **Jimmy Cheng — Digital Domain, Taipei**

In a way, the example set by Iconic Engine quickly and surprisingly became a point of reference for the whole sector, because it enabled both ends of a spectrum to better understand and appreciate their needs. For independent producers, working directly with buyers might be a more efficient way than spending too much time, effort, and money circulating complex works, and would allow them to find monetization and a return on investment in a shorter term. On the other hand, for telcos, having go-between companies curate and select projects for them that target the collection of experiences that best showcase what VR can do (and how 5G can make VR even better) is also hugely beneficial. The possibility of outsourcing distribution work to someone else who understands the unique landscape, therefore fills in an important gap for many:

[Producers] may do a lot of deals in a particular region of the world, but based on such a notion of trust, they also come to someone specialized with the Chinese market for sales in China—and they now come to me for telecoms. Even *Diversion* is in contact with me to deal with telecoms... **Jimmy Cheng — Digital Domain, Taipei**

It is also interesting to note how the role of artists is still considered central to ensuring the quality of independent content, even in the context of dealing with telcos. The reason is simple—XR artists are innovators. Instead of responding to demand, they create demand. Furthermore, as telcos strive to inspire audiences with what could be “the future of entertainment,” a blockbuster approach is much less efficient than a more original and unexpected one.

I’m lucky to be invited to festivals and workshops more and more as a decision-maker—to meet with producers and creators, and to discover at very early stages their future experiences. I test the prototype concept, I try to provide my feedback as a distributor and try to understand who they are targeting as users. And it has become a very important thing for me! It is a much better way for me to understand what the technology is. What if there is something new or what are these creators thinking about next? **Jimmy Cheng**
— Digital Domain, Taipei

Asian Versus North American Trends

Other trends that respondents seemed curious about, or were paying close attention to, were related to how different audiences showed interest in XR projects but with two starkly different perspectives on how they are approached.

On the one hand, the North American and European markets seem to dedicate attention to a complex strategy of targeting audiences through LBEs and festivals, with the intention of making most sales and profits through at-home consumption (and through the use of platforms designed for gaming). In other words, LBE venues, festivals, and curated programming or events are perceived as being crucially important. However, this is the case because of the visibility and evangelization opportunities they represent, rather than as part of a monetization strategy.

On the other hand, what some called the “Asian XR market” has demonstrated an opposite approach: Strong audience interest in LBE venues and experiences is perceived as a monetization opportunity and evangelization is done through at-home consumption.

Korea has been at the forefront for producing and manufacturing headsets, hardware, and software. They established themselves as a clear contender in terms of HMD offerings. China, Taiwan, and Japan fall close behind Korea. Japan and China have also demonstrated some of the highest numbers so far for VR consumption. However, in China, this has been accomplished through Chinese headsets and platforms that seem tailored to the Chinese market. As many have pointed out, the opportunities that the Chinese market consequently represents for monetization seem impressive. However, the Chinese XR sector would first need to demonstrate interest in opening its doors to international distribution, let alone acquisition.

Southeast Asian markets have also seen growth in interest in more experimental or independent XR content (which is similar to what Orange and Deutsche Telekom saw a few years ago), but as some producers have suggested, their vision of narrative-led XR is still more oriented toward family-friendly content, followed by wildlife, travel, extreme sports, and animation—where a story’s accessibility and non-reliance on a specific language become important factors. As Jimmy Cheng highlighted: “Documentary is usually a no-go, except when it comes to space.”

4.3 — Monetizing Curation – Find- ing the Right Partners to Ex- pand Reach

The need for the south Asian platforms is basically the same. They need to set up a platform, iOS [or] Android, and they mostly will need to choose a headset to also integrate the platform. And then at the very beginning, only traditional 360° content. That is the easiest way for them to demo to people or to engage with users and for the content they want to choose, it's very funny. All the telecoms are looking for content that is family friendly because they're engaging with families, no matter [whether they're] kids, teenagers, grown-ups or elder people. So, family-friendly is really a core element for the content of the licence. **Jimmy Cheng — Digital Domain, Taipei**

Generally speaking, though, Cheng himself recognizes that deals made in licencing may be very promising, but are still small compared to mainstream cinema, for instance:

So, for France and Germany, [on] each side, I already signed 400,000 for each telecom. And then from China, I signed about 800,000; Taiwan I signed 150,000 and then there will be another 150,000 coming in very soon. In Japan, [it was] a small deal [...] 10 to 20,000 for one content or two content [...] Most of the big companies will have their platform ready this year. The ecosystem is growing up; it's a really good sign! **Jimmy Cheng — Digital Domain, Taipei**

Here again, sharing numbers becomes problematic to prove a growing trend for adoption: These figures nevertheless feel quite optimistic to Cheng, even if they don't compare to an older, more established sector. It is the price to pay, it seems, for being the new kid on the block.

In a similar striking example, the case of Sandbox Immersive Festival, in China, helps us understand what types of projects can speak to both ecosystems, and where both the AR and VR worlds can benefit from observing how the Asian market of early adopters points to directions which may be our near future as well.

The Sandbox Immersive festival first launched in 2018. It was the first of its kind in China, as far as we are aware, and the festival worked on its third edition in the summer of 2021. The festival is thus very new. However, it quickly became China's biggest XR festival and venue. It presents a wide array of XR experiences via an LBE setup, including international productions, games, multi-user experiences, and more artistic and independent experiences (including work from the National Film Board of Canada).

The response was so overwhelming that the festival started experimenting with broad-scale LBE installations and exhibits as well, and is now looking to expand to new cities, including Beijing.

The diversity represented at Sandbox demonstrates that artistic content has also proven to be quite popular in Asian markets as long as contextualization is clearly established. For instance, *Ayahuasca* worked well with LBEs and stores but also with Asian telcos. The core need is to find one's audience by proper curation of international works.

The Sandbox Immersive Festival has also become a showcase for industry leaders and allowed for a public curious about games and technology to be introduced to more immersive experimentation and to narrative-based XR in general. The feedback was incredibly positive, and monetization clearly proved there was a way to create a sustainable space for XR experiences.

Tickets for XR films are usually priced between US\$7 and US\$10, while bigger exhibits are priced between \$US10–20. These prices are lower than those in North America, but as Eddie Lou—founder and executive director of Sandbox

Immersive Festival—suggests, that lower price point is key to welcoming a Chinese audience that is accustomed to participating in collective experiences and shared artistic venues:

Right now, we're showing *SPHERES*, which was shown at the Rockefeller for \$50, but [that] is much too expensive for a VR experience of this kind in China. So, we're adapting to our public and we are showing it [at] closer to \$20. **Eddie Lou — Sandbox Immersive Festival, Beijing**

Eddie Lou explains how they chose to invest in creating a wide selection of experiences rather than opting to acquire or adopt a particular technology. This enables the festival to remain agile and focus on the content it offers:

Sometimes we rent a venue and sometimes we do a revenue share with a venue. [...] We sometimes rent the headsets too. But we also have a scenography around the experience. **Eddie Lou — Sandbox Immersive Festival, Beijing**

Contrarily to Cheng, Lou is a bit more skeptical of how much the telecom strategy can really widen audience interest. In his perspective, the telecoms are still a bit too conservative in the types of content they seek to add to their collections. Lou believes, on the contrary, that experiences need to surprise and inspire audiences with uniqueness and originality. Playing it safe is, in a way, contradictory to what a public curious about “tomorrow’s tech” seems to be searching for.

His thoughts echo those of major festival curators interviewed, who also pointed out the importance of ensuring that the next step for distribution is inevitably monetization—the market needs to mature to a point where content can, in and of itself, generate revenue:

How can we help the market structure itself so that the “independent” [offerings] can be aggregated and curated? So that there is an identifiable collective that makes it easily accessible for buyers, funders, and the general public to find these works? **Eddie Lou — Sandbox Immersive Festival, Beijing**

In Lou’s perspective, stores are “outdated.” They still follow a model where one comes in to “purchase” content as one would a product (the store-based terminology used to describe such platforms is a clear indicator of the philosophy behind the sales strategy). For Lou, this strategy is not the same as creating a dedicated space where users can search, stumble upon and find creative, cutting-edge, artistic content for VR or AR:

I think a future for us is really to put our efforts into building a curated platform to showcase the best experiences that are produced in XR. This will be an online platform. Definitely. I think over the next three years, location-based will be at its lowest point—as in barrier to entry—to getting into XR. And that’s where our platform can come in with curated, high-quality pieces. **Eddie Lou — Sandbox Immersive Festival, Beijing**

His perspective is that figuring out a way to ensure high-quality content gets distributed is, in itself, a way to better plan monetization strategies, by becoming mediators of independent XR circulation.

Some of the strategies for monetization that Lou discusses as promising explorations are quite similar to the previously mentioned monetization strategy used by PHI:

When we think of monetizing work, we really think of two things: Often, we’ll complete the investment in a particular work, and then we’ll take charge of its distribution. So, we start by reimbursing our own investment, and then we split the revenue share (60% for the artist, 40% for us). [...] On the other hand, when we welcome an artist’s work that we exhibit ourselves, we pay a licence to the artist, but there is no revenue share. Yet we pay for the installation [...]

And a third model is that we sell an exhibit at international centres. We split the revenue share with the location or space, but we still pay a fee to the artists.

Julie Tremblay — PHI, Montreal

THE INFINITE, for instance, is a multimillion-dollar project, and with such sums comes accountability to funders and investors: “[T]here inevitably needs to be a recoupment!” (Julie Tremblay — PHI, Montreal)

In this case too, PHI noted that they find support to ensure wider distribution by partnering with collaborations that can open doors in realms and sectors where they are less known or about which they are less knowledgeable. For instance, they recently partnered with Round Room, a company specialized in family entertainment, arena shows, concert and theatrical tours, touring exhibitions, etc., to help them open new doors:

Thanks to their help, we’re now planning to have the show tour in 12 cities over 5 years, to be cost effective. This means that we plan on selling a minimum of 59,000 tickets in Montreal, which means 60% of capacity in times of COVID, and aiming for 150,000 tickets sold per city targeted. **Julie Tremblay**

— PHI, Montreal

Partnering with others that have more knowledge of a more established, lucrative sector—such as telecoms in the case of Iconic Engine, location-based venues and headset rentals in the case of Sandbox Immersive Festival, or large family-oriented showcases and exhibits in the case of PHI—all serve to demonstrate how much more willing XR promoters and distributors are to share the parts of the same pie with others, as long as it helps push a commercially viable sector into a more full-fledged, recognized market.

4.4 — Key Learnings and Recommendations: Hybrid- ity, Targets, and Trust

Whether we spoke to producers and creators or to specialists in content distribution and circulation, all seemed to converge on the need to move the nascent sector into more hybrid approaches that enable a given project to be launched in parallel in more interactive, larger-scale exhibits, while also targeting at-home audiences via an accessible spin-off. New platforms conceived for curated collections and content also seem to be made with the goal of enabling the hosting of hybrid content:

We want to move our Sandbox Immersive Festival to allow people to access it online [...] The platform we’re creating to that effect will include projects we’ve produced ourselves, but it will also host virtual live performances and virtual interactive art pieces, and perhaps even some light social games. **Eddie Lou — Sandbox Immersive Festival, Beijing**

In the multiple conversations we had, there was no defined payment structure that seemed to emerge more clearly than another. Rather, it seemed inevitable that most payment planning and approaches would rely, here too, on a hybrid model where many respondents plan on a mix of ticket- and subscription-based offers.

Generally speaking, the goal of the individuals we interviewed was to first ensure the stability of the sector and bet on its growth to plan monetization in the long term. In other words, respondents still didn’t need to primarily consider making money as their main objective—at least not yet. For the moment, revenue is created from LBE experiences or through limited licencing fees. However, the goal is still to ensure a simple recoupment of costs for production and distribution—and of course, to be able to redistribute any small profits made to the artist. Supporting and securing artists’ and creators’ work is indeed believed to be a priority—a way to ensure they keep providing the content all these new platforms so desperately need.

I think we proved a point. People trust what we do, why we do it... we now commercialize the platform we created for our festival partners and collaborators.

Julie Tremblay — PHI, Montreal

Hybrid approaches thus feel safer: They have proven useful to producers and distributors when they needed to adapt to new COVID-19 realities. The lessons learned from experiments that were tried and tested as part of new lockdown-related circulation initiatives, allow producers and creators to cast a much wider net when it comes to targeting who the audience is for XR.

In this sense, an important learning has been the emerging role and place that specialized curators play in the new XR ecosystem. Curating becomes a way to ensure that different audiences can be approached by people who clearly have a better understanding of particular XR subsectors. Understanding the particularities of each public, market, and network of supporters becomes a seal of approval—a branding of festival collections, a clear signature of particularly innovative XR content, or a profound knowledge of growing Asian markets—which becomes highly sought out. This demonstrates the importance of building such networks and curation on trust.

As many found out through trial and error, it is quite difficult to find a platform that can run different types of content. As of yet, there is no real standardization, and if standards do start to emerge, everyone is aware that they may quickly change due to technical changes or the marketing strategies among major headset companies. The terrain is slippery.

As producers and distributors find it hard to adapt platforms to each project, some have interestingly started to find a solution in the developed of their own application, taking charge of the content they also curate:

I think we proved a point. People trust what we do, why we do it... We now commercialize the platform we created for our festival partners and collaborators. It's compatible with different headsets, and festivals trust that we have a keen eye for quality and content... **Julie Tremblay — PHI, Montreal**

Licencing is based on repetition and trust [...] At the beginning, people were nice but most didn't feel like trusting us yet. [...] I think they now know that we understand who the audience is and for which platform. [...] To define your target audience is to target your profit. **Jimmy Cheng — Digital Domain, Taipei**

Of course, among new opportunities mentioned by those we interviewed, telecommunications companies took many by surprise, and although there is some interest in exploring how this stream of support could give way to new monetization strategies, producers aren't completely fooled—and demonstrate that they are very much aware that most telcos are using XR to market 5G. XR has become an investment, which means the support could also be short-lived. The opportunity is nevertheless still there and ready to be taken on by those who are the most adventurous.

Yet, as producers, curators, and distributors test and research new business models, it is useful to note how many among them highlighting the role of the artist—the fact that these creatives must be given proper support or to ensure they

To define your target audience is to target your profit.

Jimmy Cheng — Digital Domain, Taipei

are compensated with respect and the ability keep their own IP. If we paraphrase what we've heard, what is crucial to making any progress sustainable and to establishing a true market is respect for creator's and producer's roles in feeding the ecosystem with innovative content.

Many continue to insist on the need to ensure the ecosystem can indeed support a wide range of voices, approaches, and artists to ensure just varied an array of experience that can help feed the growing demand for innovation, quality, and content:

I think it really is our role, and an important role, to expose and circulate diversity. We even diversified our operations, in order to meet new audiences we didn't first target, but that keep showing up [...] We scout projects and people, but people also come to us. We found new partners, like Arsenal, we do curation for other events and venues... We're now planning to tour exhibits in Milan, London, New York. **Myriam Achard — PHI, Montreal**

Everyone understands that it is not the setting up of a platform that is hard. Even finding content for a particular platform is not that hard. What can become tricky is how distributors, programmers, and curators actually choose to target or generate users; this is the main challenge:

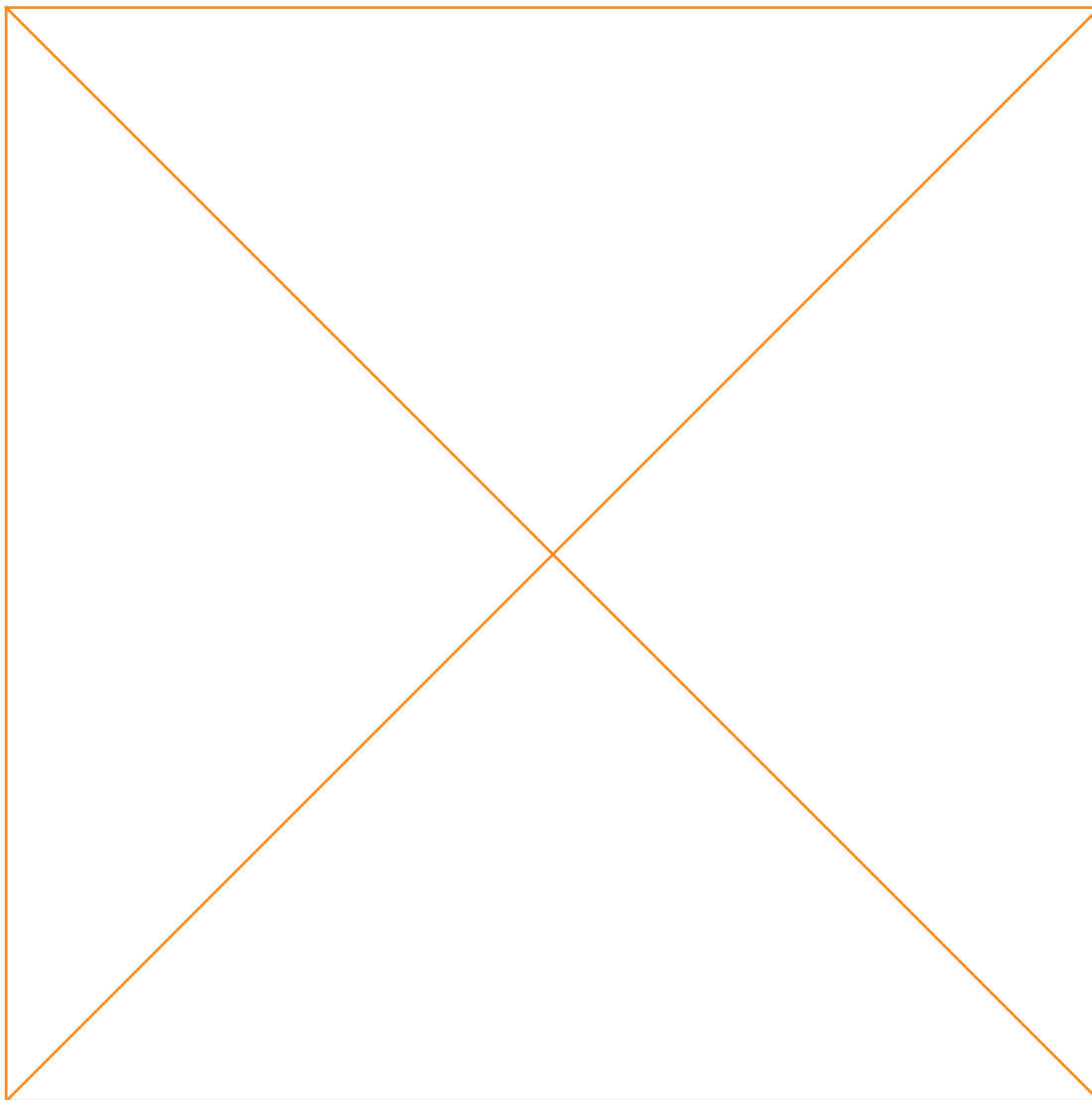
I would say one of the biggest platforms we have right now is Oculus; [the] second one may be HTC; and the third one is whatever the ecosystem is in China. [...] If I have US\$5 million, I can definitely set up a company, set up a platform, licence the content back, and start to do pay-per-view. But the problem is, how do I promote those headsets? How do I make sure people will choose my headset and not Oculus? The problem is that the hardware and the public, in the ecosystem... they are not connected. It's not *Ready Player One*; it's still very isolated. **Jimmy Cheng — Digital Domain, Taipei**

Finally, many agree that to ensure a curious public keeps returning, it is paramount to work on how to manage communications around experiences and promote their discoverability. Ingrid Kopp of Electric South states it eloquently:

I am wondering if there are better ways of... packaging projects. Are there, for example, subscription models? Putting a price tag on most projects in a store doesn't really work. Most people, they'll buy a game... they'll buy a *Beat Saber*. They're not going to buy an amazing short animation project by artists they've never heard of, but would they buy a subscription to some kind of thing where they would get five story experiences a month or something? [...] We don't know. And this links back to communication and discoverability where we could maybe package up things so that it would be a better deal for the audiences. **Ingrid Kopp — Electric South, Cape Town**

As many shared their thoughts on the future, we noticed a general sense was that the XR ecosystem would inevitably become cross-platform by, for instance, creating platforms dedicated to games or sports, social meetings and events, independent XR, or festivals. In order to get to that point, the goal for all is to create, generate, and circulate content; to have it seen by a public; to inspire them—and hopefully, ensure that they are wowed enough that they keep returning. From that perspective, the general prognosis is very positive.

Key Learnings



- Diversification of partners, including an obvious increased interest in telecoms.
- Hybridity and co-production strategies as ways to split risks, share knowledge, and expand reach.
- Opportunities to rethink a project's outputs and iterations to situate it in an international market.
- A strong need to ensure support for IP explorations, recognition, and sharing between co-producers.
- Hybridity and trust as valued notions, as well as an increased recognition of the value and expertise of specialized curators and distributors.

4.5 — A Case Study: Marshmallow Laser Feast

Among the companies and studios interviewed, we felt that Marshmallow Laser Feast (MLF) demonstrated a unique approach to hybrid models of monetization and distribution that echoed what many were pointing to as future trends and ways of doing business.

MLF has long established its reputation for works that simultaneously succeed at continuing to explore and experimenting with the limit of technology—using different sensations: smell, taste, wind, etc. The arts collective continues to surprise, with the desire to push audience expectations. Their success lies with widely distributed projects that stir the imagination about the limits of what XR can encompass: highlighting ambitious works that tap into a unique use of digital tools, including immersive work, robots, collective and interactive installations, projection mapping, light games, haptic devices, and more.

Yet, the company has managed to establish itself in the ecosystem as a creative, experimental studio rather than a tech-driven company. In other words, it is the quality and innovation of their content that drives MLF's reputation.

While many look to them as a model, MLF is also a strong example of how to collaborate and partner with others in a variety of ways. The team has worked with the public, private, and tech sectors. They have shown that they see value in co-productions and have not shied away from sharing IPs internationally. Finally, where others usually have general reservations about sharing their numbers and marketing strategies, MLF has been notably transparent and generous in discussing their strategies, deal models, and successes:

It's all about building a community. We experiment, and we share what is useful from these experiments. **Eleanor (Nell) Whitley — Marshmallow Laser Feast, London**

For all these reasons, we wanted to focus on MLF's activities and strategies and highlight what makes their recipe for success so unique. We met with Eleanor (Nell) Whitley, Executive Producer for the art collective. The interview was conducted by Monique Simard with support from Philippe Bédard.

MS

NW

So, what would you say you do at MLF? What is it that you focus on?

The main challenge of Marshmallow Laser Feast is to place people at the heart of our work and always engage with our audience. I think the most important thing we have learned from the different projects is that trying to speak to a niche group is not enough for ensuring sufficient revenues. You need to look further. At the core of our mission, we want our projects to create agency and empathy, especially with the use of technology to re-engage people with the natural world.

As a business model, the organization's activities are diversified in a way that can make it hard to know where to slot them. They provide services usually offered by advertising and design agencies, and digital- and new-media studios—but also design and create one-of-a-kind in-house productions and focus on distribution practices and opportunities that enable MLF to preserve its works' unique points of view.

NW

Our first successes with festivals like STRP and Playgrounds (both in the Netherlands) really rooted us in the new media scene or digital art scene, where the idea of artists exhibiting and touring work was the norm, right? So, we didn't invent anything new—we just played on these networks and just chose to present some things that were sometimes evolving the form. Our strategy was initially always to build a piece, tour it, and exhibit it in the context of big festivals or events—but really we've all cut our teeth, if you like, together and as an organization as the sector kind of grew.

This explains partly how much MLF has learned from experimenting with different tools that stretch the definition of XR beyond a simple VR experience or project. Exploring, for instance, questions such as: How do you move beyond a flat plane and explore volume? How do you explore interactivity [...] on the Internet, as opposed to in a 6DOF environment? How do you explore the future of motion graphics? Where can all those good things come together? From Whitley's perspective, MLF's work follows a thread of innovative storytelling via emerging technology that has allowed the company to create compelling immersive experiences that continue to inspire venues and their audiences.

To ensure monetization for their productions, the studio looked at a variety of business models, including film financing, commissioning, sponsorship, touring—and decided to blend them all together.

NW

We're trying to put fingers in all pies. So, at the moment we're doing a 5G research project, [and] we just released a piece called *Dream* with the Royal Shakespeare Company (in March 2021), which explored live performance on the web—in that we are using the web as a kind of live performance venue and exploring what that means for audiences and performers.

Another clear example mentioned by Whitley is the success story of MLF's project *We Live in an Ocean of Air*. The experience uses backpacks, VR headsets, and projection mapping, but also smell and breath sensors. It launched at the Saatchi Gallery in London in December 2018, with the goal of touring major cities and cultural venues. However, their ambition of supporting the cost of production with five exhibitions and of generating profits using subsequent stops was slowed down by COVID-19 restrictions. To find solutions, MLF had to look elsewhere:

NW

As a producer working in the field, I'm interested in how the fine art market works, how the film industry works, and how arts centre's work. I am interested in all the silos of the cultural industries and try to learn from them, but I also want to know: How can we bring them all together? Because we are offering something new for audiences who are actually interested in all of those things!

MS

What would you therefore say are your economic models?

NW

Well, it's definitely a blended approach. So, we do three types of work: One is developing our own work, where we work to proactively fund and get commissioned for our ideas, through private investment or other state funding as a lot of other creatives do. Secondly, we work where someone else has the principal idea and they come to us to create and execute it—but process is a big part of what we then need to do. That might be collaborative, like the project with the Royal Shakespeare Company, so we work on it together. Or it might be a brand that comes to us and says we want you to explore this, or we want this type of particular experience, and we develop it as a commissioned work. This usually has some basic parameters or a kind of brief. We tour our work as well. So, then we have another third revenue stream, which is effectively sales or distribution of all these IPs that we already created.

MS	How do you get your financing for your projects? Do you get it mostly from public programs or public funding ?
NW	It's a mix of brand/commercial money (people, kind of, putting money into our work) and public funding. For instance, the <i>Dream</i> project was mainly funded by the UKRI (UK Research and Innovation) council's Innovate UK fund. That was part of a three-year-long research project [...] We have some other commissioning funds that came from the [UK] City of Culture—so again, public. We also have a project at the moment for a museum and another for a jewelry brand, which is a more straight up commercial relationship.
MS	Well, that's interesting because you have three kinds of roles: a creation role, a production role, and a clear circulation role. Would you call it circulation or distribution?
NW	Distribution. I mean, yeah, you can have distribution for free so you could release something—open standard, open stores— absolutely, which is part of a marketing strategy. But really, for me distribution is very much a revenue stream or it's sales of your existing portfolio of work. And we've learned that we really need to focus on this to ensure we can keep sustainable as a studio.
	However, as Whitley highlights like many other respondents, defining what “distribution of immersive work” entails is not, in and of itself, straightforward.
NW	Even with our most successful projects—in particular, with exhibitions—very quickly, we realised that we should focus on the success of this exhibition first and, from it, try to learn from the questions it raised. Such as: How many visitors can go through per day? How many tickets can we sell and what kind of new revenue can be generated? And most importantly, who else might partner with us to exhibit the work?
MS	And how early do you think of these issues? Is the sales and distribution of a project integrated from the very start?
NW	Integrated from the start but it hasn't always been the case. We've learnt the importance of this process [...] For instance, the project we did in Montreal [<i>A Colossal Wave</i>] is a good example of not doing that! The creative part of our project involved a shipping container that we turned on its short side. It was wonderful to do from an experience point of view but absolutely impractical when it comes to touring. [...] A big lesson for us was: OK, this was great; it proved a point; it did something really interesting for our audience and helped us establish something. But—for the stage we were at with our profile at that point—it didn't have the ability for us to tour it and contribute to the company's income revenue strategy. Perhaps once curators or others know an MLF show is a sure-fire hit, they'll be willing to fund the movement of such colossal installations around the world! So, what we learned is that from then on: “The recoupment strategy is what your sales strategy should be” is very much part of our thinking from the very beginning of a project.
	Here too, the example of the <i>We Live in an Ocean of Air</i> exhibit provided many important lessons. For instance, the experience relies on individual use of VR headsets and backpack computers, which certainly limited the exhibition in terms of numbers of visitors who could try it at once. To counter this, the studio decided to set up spaces around the headset play area, to allow people to sit and relax while watching the performances of the other people who were using the headsets. Those spectating could still enjoy the projection screen and the ambient soundscapes and smells that the experience created for them.

By tapping into this multiplicity of ways for visitors to appreciate the exhibition, MLF proudly noted that over 300,000 visitors were able to engage with the experience when it first launched and visited the rest of the Saatchi Gallery during the same occasion.

MLF also started to incorporate this strategy into their business model—reaching out to venues who believe in immersive experiences such as PHI, or Nxt Museum in Amsterdam, from the very first moments of developing a project, in order to shape their exhibitions tour and build their first distribution strategy according to pre-established partnerships.

Here too, Whitley feels that this new form of collaboration can quickly point to the need of having more specialized channels for communication between creators and exhibitors. The role of specialized curators or distributors is centred:

MS

We've heard many mentions of a lack of distribution resources. Do you think it should be integrated into studios or outsourced to dedicated distribution companies?

NW

Well, I think one of the fundamental problems right now is that we don't have what other art forms have in our industry, which is a group of people or a segment of the industry that specifically handles sales and distribution. [...] We used to think "nobody knows the field as well as we do," but now, we're progressing from this view and more and more considering that some people might actually know better in the field of distribution. [...] We need people to support that process. However, we also need to understand the value for that role—are there good enough financial returns to genuinely make that role work (or can we do it more efficiently in-house)?

Whitley notes the audience success of *We Live in an Ocean of Air*, but also its dependence on a touring strategy to succeed:

NW

I think we have very few examples of success right now from a commercial point of view. [...] We have a piece called *We Live in an Ocean of Air*, which was on in London for five months. It's sold out, repeatedly (the run was extended twice). It was a real success story in terms of audiences being interested in the content. Is it a success story in terms of finances, yet? Yes, in comparison to lots of immersive works, which never make any money—but also not completely as yet. Because of the pandemic and various other things, it hasn't done its touring strategy properly. The overall recoupment strategy depends on more than one show (as with many works in and out of the immersive sector). So, I think there's ways to learn from places like PHI, you know. We're working very closely with them on two other projects right now, which have really benefited from their intervention in this sector in terms of backing bigger projects that can scale up and adapt in spite of COVID realities...

We used to think “nobody knows the field as well as we do,” but now, we’re progressing from this view and more and more considering that some people might actually know better in the field of distribution.

Eleanor (Nell) Whitley — Marshmallow Laser Feast, London

Whitley, like many other creators we have interviewed, understands that the value of hybrid and scalable models ensure a more sustainable approach to negotiating a landscape that is bound to change and keep changing until the market is more clearly established. Even then, if that market is based on the curiosity of an audience for innovation in tech-based storytelling, constant change may be what enables monetization in the first place.

NW

Well, assuming we go back to how we were before the pandemic, we pay for collective experiences. As human beings, we enjoy having shared experiences that are “live” with groups of people. I don’t believe that that will disappear. I believe that XR has a huge future in that, as do traditional kinds of art forms. It’s just an enrichment of what already exists. I massively see the potential for innovative work, and we definitely have started to prove, I think, that in terms of the kind of tickets we were selling at the Saatchi Gallery for *We Live in an Ocean of Air*, there are clear indicators audiences really want to spend money on these types of experiences.

MS

There’s not a one-size-fits-all model, right?

NW

I think there’s a distribution model that works for touring work but, yes, [there are] challenges associated with the type of work you have and where you want to reach people. Location-based VR is just its own beast and needs to evolve and have its own understanding of success or parameters for evaluating scale, cost efficiency, and all of that. Out-of-home experiences, which use immersive technologies, can offer a lot to venues, art centre, etc. but there are challenges around curation and affordability. And then, there’s a completely separate conversation which is about the success of online distribution—either through app stores, or through unique releases on platforms, or directly on the web. So, I think that there’s really very different measures of success—or, at least, there’s different potential avenues for exploring what works. And I think that we should acknowledge that they’re separate and mean [there are] separate design challenges. It doesn’t help if we just muddle everything together and try to call it a market. I think there are such different needs and parameters to be dealt with to evaluate this progress correctly.

Among the explorations of new ways of reaching an audience, a recent MLF project stands out: *Dream*, a co-production with the Royal Shakespeare Company, which could be described as a virtual play that performed by live actors in motion-capture suits, who are animated in real time using game engines, and which is accessible to the public through the Internet.

The approach ultimately depends on who we are looking to reach, how are we looking to reach them. Do we have physical control of their experience, from the moment they enter a space to the moment they leave, or are we reaching them at a distance?

Eleanor (Nell) Whitley — Marshmallow Laser Feast, London

MS

NW

Can you tell us a bit more about the success of *Dream*?

It was good! I mean... the reach was phenomenal in comparison to what we would have gotten for doing a show for 10 days at a film festival or whatever... So, in terms of live audiences, it was really successful. It was also really expensive to do! It was complicated technically, but it was liberating in terms of how we think about reaching audiences in different ways for the future. And in terms of the technologies we were using: It provoked loads of creative thinking about impact, immersiveness, story, and interaction. They're obviously very different propositions—physical and virtual live shows—but as a content-driven studio, we very much describe ourselves as platform-agnostic and technology-agnostic. We will approach anything which allows us to best tell the story we want or illustrate the point of view that we're trying to make within a particular piece. We're still very interested in what, for example, virtual and augmented realities will offer for embodied learning (for some of the other kinds of work we do to understand the natural world, for example). The approach ultimately depends on who we are looking to reach, how are we looking to reach them. Do we have physical control of their experience from the moment they enter a space to the moment they leave, or are we reaching them at a distance? As creators, we have to think about that for distribution strategies too.

Whitley also interestingly highlighted the importance of establishing standards for open source as a way to counter the monopolies of Big Tech and the stores. For example, their recent project *Dream* was presented on a website open to all types of formats and hardware—phones, tablets, PCs, and VR. To counter-balance such tech giants and their control over formats, Whitley calls into questions each element of the sector's responsibilities.

Perhaps creative studios should unite to form a more cohesive front. Maybe part of the responsibility lies in tech companies themselves. Overall, there needs to be support to compensate for a gap: a lack of support Whitley that feels is much needed on the distribution side of the XR sector.

NW

Sure, we can create open platforms, and often for creative reasons—for example, how the work looks and how an audience can interact [with it] —this is desirable. But the major platform companies have a role to play. In the context of a live show like *Dream*, if you release an app and the storefronts take 30%, that's often your profit margin! [...] I think we need recognition of the value of the independent sector as much as the blockbusters, and we need to consider how much infrastructure is needed. Independent producers could choose to band together but will need funding agencies and governments to also play a role.

MS

NW

Try to change the rules of the game?

Perhaps. If you want to help the sector evolve, you've got to fund content, but also you need to fund infrastructure. How do we build a streaming infrastructure, and build the other tools that are needed to get different types of content to different types of audiences? Create the infrastructure to allow you to support a broader base of independent creators. I think the state funders have a visionary role to play. I think the NFB is a good example, in the past, of supporting and bringing innovative projects to audiences, but I don't see them taking a step in that direction of supporting distribution and or streaming infrastructure as well, right? These are expensive challenges, though.

As a general strategy, MLF's approach to the distribution of innovative work met with repeated success in terms of audience outreach, is quite inspirational. By first keeping a close eye on the creative and artistic intentions and the needs of the project's vision, the MLF team can then think about how said project can be versioned for different platforms, audiences, and industries. That may be where MLF's success has been most unique:

NW

So, to check the question: What kind of projects will be dominant in the XR field? [...] I think it will be projects which successfully can reach and speak to people, to their audiences. As we watch the success of streaming services and high-end television, and as film develops a particular relationship within that, I feel like we, as creators of works that use technology, have to understand how this technology works to reach audiences and capture them in similar but quite different ways. I think we have to get deeper in terms of our subjects, our stories and content. Maybe we have to be long-form and move from this culture of shorts, to features. We need to understand how much that costs and that's not something that the independent sector is necessarily very well equipped for financially. I think we'll see things working on the web a lot better—the interactive web is really taking off. I think we'll also see more projects land on technologies and infrastructure that exist in a more permeated way within society, and perhaps the most successful projects will allow multiple ways to experience the story.

MS

And in all cases, you keep your IP?

NW

As much as absolutely possible. The reality of getting projects funded is sometimes we end up sharing the IP. Being able to exploit our IP is obviously a way of futureproofing or securing a sustainable future. IP for us can be the content or end-product but also, in places the specific technology developed, to produce that content. Both, of course, have value and mean we can explore technology across multiple projects and formats. This is where the blend of being creative and a technical studio comes together.

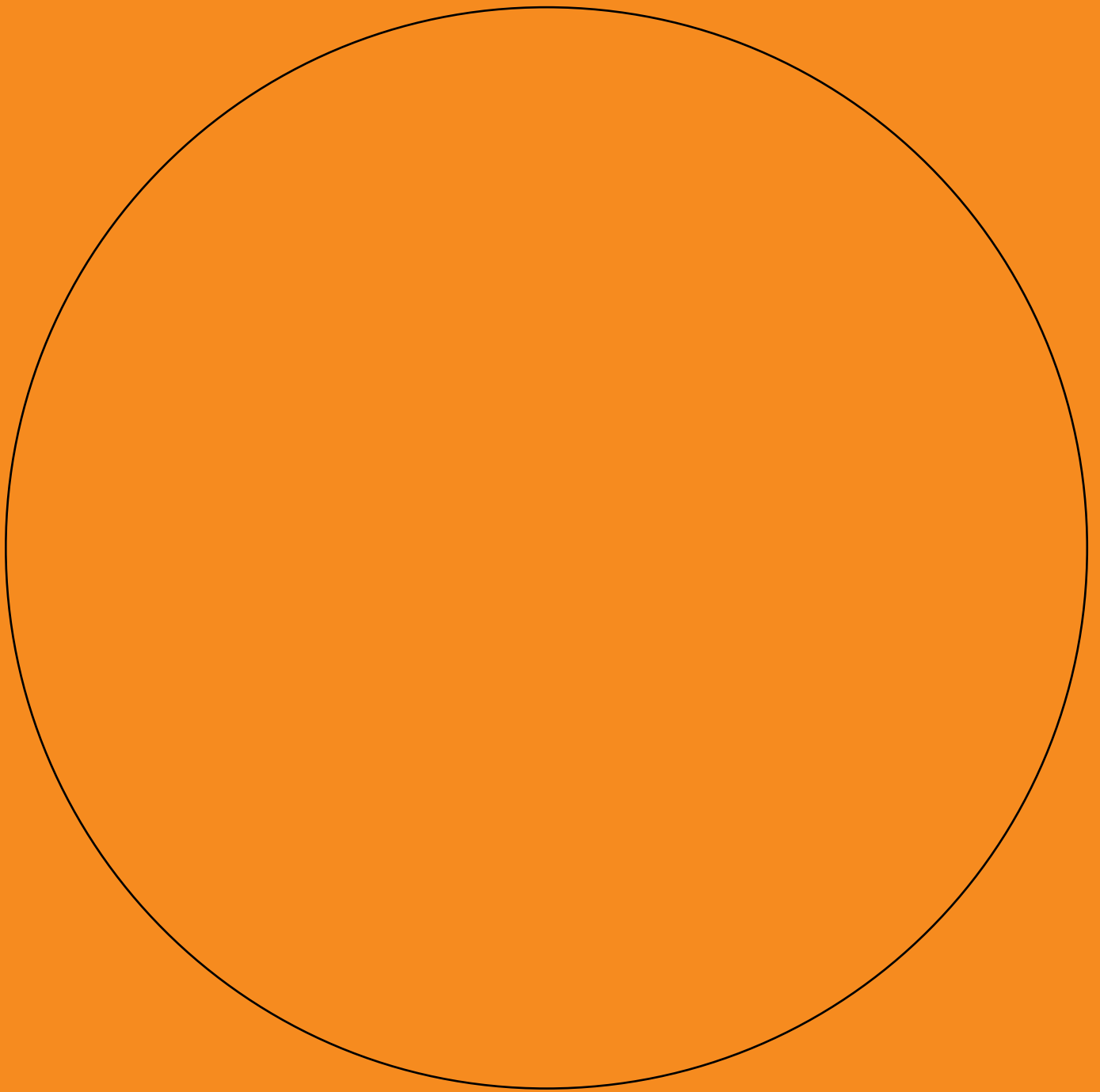
MS

Of all your projects, what's your favourite?

NW

Oh, that's a good question. Probably the ones we haven't made yet! I'm a sucker for always dreaming about the ones that are coming, but in terms of projects that have gone out there and reached the world, I think that *A Colossal Wave* was amazingly fun in exploring connected physical and virtual worlds—a real precursor to so much we have done and want to do. *We Live in an Ocean of Air* is up there because we proved to an industry what we thought was possible, and it worked. I'm also really proud of *Dream* for similar reasons and because it reached audiences through technologies we are still exploring, and we made it in about six months—having had to completely change direction because of the pandemic... And I'm excited about the longer-form works we are developing... and really, extending the idea of what the future of screen and story will be—and that just excites me personally a lot.

Conclusions



Conclusions

A Growing Sector in Search of New Parameters

The challenges for independent XR distribution, circulation, and discoverability are many. However, so are the opportunities for reaching new audiences with inspiring and original content.

The research conducted for this report has reinforced our belief that the diversity of approaches, values, and needs highlighted by the creators, specialists, and decision-makers met in the context of this study can and should provide the XR community—but also industry professionals, institutions, and funders—with useful strategies and a better understanding of the independent XR sector and its needs and realities.

The experiences and visions shared by the many voices polled and interviewed strengthen our desire to provide the necessary support to creators and promoters of independent XR works, in the circulation, monetization, and discoverability of projects made in Quebec, in Canada, and elsewhere in the world.

To be sure, the XR landscape remains largely uncharted. However, we believe there is much to learn from the adaptations, common pitfalls, and great finds shared by the members of our community. After all, the independent XR sector is made up of innovators. We adapt, we experiment, we learn from each other:

I always like to say that a pioneer has to go out, but [...] also has to come back, and I think that's something that we've learned over the years: [...] It doesn't make sense to go first, if you don't bring everyone with you. **Mads Damsbo — Makropol, Copenhagen**

Adapting to the current pandemic was an important obstacle for many, but it also added to the ongoing explorations of more relevant ways to distribute and circulate innovative XR content to an increasingly interested public.

A pioneer has to go out, but [...] also has to come back, and I think that's something that we've learned over the years: [...] It doesn't make sense to go first, if you don't bring everyone with you.

Mads Damsbo — Makropol, Copenhagen

Creators in this field are constantly searching for ways to reach their audiences. Quantitative studies and qualitative interviews conducted here both pointed toward a general observation: The public seems increasingly interested in innovative content and experiences that can offer glimpses into what the future of entertainment and art consumption will hold—be it through games, music, theatre, opera, or another medium.

As XR practices become increasingly accepted and appreciated, new technological developments continue to arise, ceaselessly pushing the limits of the ways creators choose to innovate in terms of content, emotion, and experience. In the context of this report, few respondents discussed their newer, burgeoning practices. Even if many conversations still focused on VR and AR practices, it is clear that immersive installations, interactive exhibits, artificial intelligence, and NFTs are increasingly part of the XR community's vocabulary, practices, and long-term outreach strategies. Use of NFTs, in particular, has picked up drastically in XR distribution, promotion, and marketing strategies in the last year alone. One can only hope new studies take into account how these new tools shape and frame the way independent XR actors will choose to push and establish their ecosystem and market.

This constant emergence of new creative tools feels like it represents a unique type of momentum needed to position XR between leveraging tech innovation and producing quality creative content. We believe this tension is what makes the independent XR sector so compelling and important to observe and assess.

The compilation and analysis in this study was conducted with the intentions of highlighting these unique realities, strategies, and difficulties, while also attempting to learn from the trial-and-error process of the creative minds pushing and expanding the limits of XR.

As we looked at the numbers using quantitative analysis and general polls, we tried to gain a better understanding of the most important grounds on which a market is crafted. We discovered new emerging consumer profiles, which echoed new trends and opportunities tested out by producers when planning for the distribution, circulation, and discoverability of independent XR.

From this first overview of the general sector's trends and needs, we went on to test and challenge some of our initial ideas and preconceptions by discussing three main topics in greater depth with creators, producers, festival programmers, curators, and distributors of XR content. Through these semi-structured, in-depth interviews, we wanted to get a more detailed picture of a few things: What did the leading voices in XR consider to be the most overlooked realities and opportunities? What were the new realities of distribution and circulation of independent XR that deserved attention? Finally, how could we provide better tools, parameters, and measures of success when thinking about the infrastructures that needed support for this nascent sector to grow?

By focusing on the types of needs and deals related to independent XR distribution, circulation and discoverability, we wanted to raise awareness among funders and supporters and better inform them of the needs that XR producers and exhibitors have. In addition, we wanted to equip the members of our creative community with examples, models, and new

experimentation in the circulation of independent XR to help them navigate emerging issues in distribution, monetization, and discoverability, at this moment and in the future.

A first important learning from the study was that the current balance in the sector is not that of a competitive market, but more of an ecosystem. There is a definite need to ensure sustainability and monetization for independent works: being open to collaborating with different actors at various levels of circulation, sharing IPs while also reinforcing and protecting the role of artists and creators, and reinforcing public and institutional engagement toward a diversity of content, makers, and voices.

We need to all take responsibility for our own part of the pie. How does everyone make sure that you're gaining, documenting and sharing knowledge—not only within the industry, but also with consumers, with venues, etc.? We're creators, but we also have the role of educators. It's about showing what immersive media can be—how it can inspire. **Mads**

Damsbo — Makropol, Copenhagen

As a strategy for remaining creative, many compensate for the lack of support for content that is more innovative and independent, by splitting their time and investment between work that inspires them creatively and the projects they consider the most commercially viable.

Yet, here too, we noticed a general worry that focusing too much on what will work commercially can be counterintuitive to creating and supporting the XR market of tomorrow. An easy go-to, for instance, is the production of games, which sell more easily on platforms. The public is already there, it's easier to cost using pay-per-use practices, but it also inevitably constrains XR offerings into a shape set by current audience expectations—an audience who has shown its desire for novelty and the unexpected. Therefore, the current audience remains, but it can also quickly become niche and stagnant. How can we learn from the successes and strategies of incentivizing this “desire” for the unexpected?

An alternate strategy developed by some of the respondents in this study involved developing innovative, independent content and target one's offer toward less expected venues: museums, art galleries, concert halls, or the Internet. In such cases, the public seems to respond surprisingly well to these exciting, new offers and experimental practices show optimistic attendance numbers, yet become harder to gauge in terms of profitability, since such experiments are still rare.

That curiosity among a budding public is something most of our respondents highlighted. They work hard to feed and grow it. They invest their own time and money to ensure that this curiosity for novelty and for future-oriented projects persists, despite the lack of support they sometimes feel in this regard.

This may be the element where raising awareness among funders and financial partners is the most pressing. Indeed, the usual parameters for assessing the success of projects and distribution strategies will seldom include frames or tools for evaluating—and proving—a public's interest outside of ticketed or pay-per-use revenue. Yet, other fields and cultural practices—such as art museums, theatre touring, and international exhibitions—do have tools from which we could draw inspiration to better estimate and evaluate where public interest lies, how to

promote the visibility and discoverability of independent XR in venues and events, and how to ensure circulation of content. For instance, one can think of tools that combine the number of tickets sold with the number of times a piece was part of a curation or evaluating the circulation of the derivatives from said piece, alongside its visibility, etc.

In the context of this study, respondents also highlighted their interest in different strategies they either use, or have on their radar, when it comes to sharing and circulating independent XR content—among which are various distribution methods including, but not limited to:

- at-home use (for example, content is distributed online to users’ own devices and is expected to be consumed in a home setting on a paid platform)
- on-the-go (for example, content is distributed online to users’ own mobile devices and may be consumed anywhere)
- location-based experiences (for example, content that is part of a fixed installation or exhibit in a specific location, with no device ownership required by users)
- multi-platform experiences (a combination of the above)
- experiences delivered through the Internet (for example, *Dream* by Marshmallow Laser Feast)
- experiences delivered via social XR channels (for example, new explorations in social VR made by Venice VR)

Yet, to adequately explore these different approaches and formats, new actors are needed in the ecosystem. In particular, many respondents have highlighted a strong need to differentiate the role of producer from that of specialized curators or distributors:

We often have to explain the nuance of what we’re doing or what we’re trying to do. [...] So, we get external help. Legal is really supportive; accounting as well. They help us help people understand the value of our work. Not because the numbers talked for themselves—but trying to leverage multiple tax credits across different projects, access different public spaces; to have someone who’s kind of one step ahead of the game, in terms of how we work and knows where the sector is really growing, where there is potential to reach our audience.

Eleanor (Nell) Whitley — Marshmallow Laser Feast, London

As many have highlighted, museums and cultural institutions are increasingly open to new types of experiences. They need to adapt and understand the added value of VR, AR, interactive, and immersive content. On the other hand, producers need to invest time to explain how this emerging form of artwork can add a new narrative to exhibitions and offer a choice of points of view to the public. At the other extreme, telcos also consider the same experiences valuable in light of how they can help market new technological developments (in particular 5G) to a broad audience. This goes to show the scale of the possibilities and the potential power of independent XR projects—which funders and investors should learn from.

Finally, in these varied discussions on distribution and monetization, we found a broad agreement that the role, value, and democratization of the artists supported by this nascent sector was not only an ethical choice but a potentially lucrative one. The goal, after all, is to inspire and attract new audiences and, as such, “democratizing the imagination” of XR is, and can and should be, a way of ensuring the strength of the design and outreach of future media.

To that end, funders and actors in the XR sector have to invest to ensure the continued flexibility, diversity, and hybridity of their content and the offerings. This investment represents a choice and a belief that diversity within the ecosystem is necessary for the sector to thrive.

Individuals interviewed in the context of this study are investing in what they believe will be the future of XR. That said, they also want to invest in an equitable, diverse future. As true innovation seekers, they forge a community that works hard at offering exciting, inspirational experiences to a constantly growing, shifting public—as a way of sharing and experiencing stories together:

The funding landscape keeps changing: money comes, money goes. What we really need is funders committing to the space and field-builders: You know, infrastructure to support the artists. Because the artists can only grab so much of that if there isn't so much to grab, right? And they are the ones creating the content! Ingrid Kopp — Electric South, Cape Town

The end goal, for many, is to find a way to craft a market out of a cultural sector that has already proven it can spark public interest but that now needs to become financially sustainable.

This sustainability requires working with a combination of cost, quality, and discoverability activities that need to be properly balanced. We believe there is much to learn from these new reflexes. Respondents identified the importance of taking a fresh look at—and adopting a new take on—the parameters used to evaluate the health and growth of this market. We hope this assessment will make its way to this nascent sector's private and public funders, and to tech platforms trying to better understand the ecosystem's need to keep pushing content.

Finally, we hope to reach curators at cultural venues and festivals to encourage the circulation of Quebec, Canadian, and international experiences, with the goal of achieving greater public awareness and engagement with these works.

Only through research and ongoing collaborations and conversations in the sector will we all be able to better articulate, engage with, support, and critically question how new forms of independent XR projects come to life and are discovered and enjoyed by a budding public. It's a question of trust and of viability, but also of considering the long-lasting impact these years of experimentation will have on tomorrow's XR productions, ecosystem, and market. The question is, what role do we want to play in crafting new futures?

We find our audiences where they are. We rethink experiences that touch and speak to them. We reinvent the models for their circulation.

Sandra Rodriguez — Sociologist of New Media Technology, Montreal

Biographies

Research Team

Author and Research Lead

Sandra Rodriguez
PhD, XR/AI Director and Producer,
Sociologist of New Media Technology

Sandra Rodriguez is an award-winning director and producer of XR and AI content and a sociologist of new media technologies. Exploring new media forms for two decades, her work spans from film, interactive animation, webdocs, virtual and mixed reality, to now AI-led experiences, immersive theatre, and large scale XR/AI exhibits. Her work has garnered multiple awards, including a Peabody, best immersive experience (IDFA DocLab 2016; Leipzig DokNeuland 2018, Numix 2018), best storytelling (UNVR and World Economic Forum tour 2018), and the first Golden Nica award given to a VR project at Ars Electronica (2019). She is a Sundance New Frontier Fellow and a Sundance Institute/MacArthur grantee, and has showcased independent XR experiences at SXSW, Sundance New Frontier, Tribeca, IDFA, Cannes, Rotterdam Film Festival, Busan and more. A sought public speaker, Sandra has collaborated as an emergent media and XR expert with events (MIT Virtually There Conference, PHI New Storytellers II, III and IV, MUTEK), the United Nations, national public news, national and foreign ministries of culture and communication, academia, international orchestras, game studios and NGOs. As a scholar, Rodriguez leads and lectures the course *HackingXR* at the Massachusetts Institute of Technology, MIT's first official course on immersive media production and design. Fascinated by the platforms and tools we create to share stories, she has published articles, white papers, a book and book chapters on reception studies, emergent technology adoption, meme culture, and tech disruption for social change.

Interviews

Monique Simard
Producer and Cultural Manager,
Chairwoman of the Board of Directors
— The Quebecor Fund,
Chairwoman of the Board of directors —
the Quartier des Spectacles Partnership

Monique Simard has been working in the cultural sector in Quebec and Canada for more than 25 years. She first distinguished herself in the production of documentary films, including many award-winning productions, then as head of public cultural institutions such as the National Film Board of Canada (ONF-NFB) from 2008 to 2013 and the Société de Développement des Entreprises Culturelles (SODEC) from 2014 to 2018. From 2018 to 2020, she was a member of the Expert Panel for the Review of Broadcasting and Telecommunications Legislation (Yale Report).

In 2009, she opened the NFB's first interactive studio, a studio that produces internationally recognized works to this day. She was Chair of the Board of Directors of the Cinémathèque Québécoise, a founding member of the Rencontres Internationales du Documentaire de Montréal (RIDM) and a member of the Board of Directors of the *Association des Producteurs de Films et de Télévision du Québec* (APFTQ). Renowned for her dynamism and commitment to the cultural world, she is the recipient of several awards and tributes: she was Honorary President of the Sunny Side of the Doc in 2016 and named Hot Docs Mogul in 2017. Also in 2017, she was appointed Commander of the Order of Arts and Letters of the French Republic.

Monique is currently Chair of the Board of Directors of Montreal's Quartier des Spectacles, the largest cultural district in North America, as well as Chair of the Board of Directors of the Quebecor Fund, a French-language audiovisual content investment fund.

Survey and Interviews

Philippe Bédard
PhD, Project Lead — Québec/Canada XR

Philippe Bédard is a postdoctoral researcher in virtual reality at Carleton University. Since 2019, he works as researcher and writer, and more recently as Project Lead for Québec/Canada XR, a think-tank focussed on independent XR in Québec, Canada, and French-speaking world at large. In addition to his writing about all things XR for Québec/Canada XR, XR Must and Immerse, his research has been published in *Alphaville*, *Synoptique*, *The Canadian Journal of Film Studies*, *Écrans*, *Écranosphère*, and *Animation*, as well as in the books *Versatile Camcorders: Looking at the GoPro-Movement* and *Un cinéma en mouvement: Portabilité des appareils et formes filmiques*. Finally, along with Alanna Thain and Carl Therrien, he is currently co-editing a book entitled *States of Immersion: Bodies, Media, Technologies*.

Data Crunching

Coline Delbaere
Producer of Immersive Experiences and
Touring Exhibitions — PHI

Coline is a graduate of Political Science with a degree in Cultural Expertise. Her previous experiences within an embassy cultural service, a theatre company, a label, or on cinema shootings characterise her versatility. Since 2017, she has been working as a producer on immersive experiences involving actors from a variety of artistic disciplines. In 2018, she was appointed as a member of the Digital Experiences Commission of the Centre National du Cinéma (France). In 2019, she joined the PHI team, with the aim of participating in the development of new forms of storytelling, and works skillfully in the production of complex interactive projects. She approaches these with a global vision, always keeping in mind the evolution of the conditions of exploitation of the creations, and the encounter with the audiences.

Content Editor

Jesse Damiani **Founder — Postreality Labs**

Jesse Damiani is a curator, writer, and advisor in new media art and emerging technologies. He is the founder of Postreality Labs, a curatorial studio and strategic advisory based in Los Angeles, CA. He is Curator & Director of Simulation Literacies at Nxt Museum, a Research Affiliate at Institute for the Future, and an Affiliate of the metaLAB at Harvard. Recent curated exhibitions include *PROOF OF ART* at Francisco Carolinum Linz, the first museum retrospective on the history of NFTs; *Synthetic Wilderness* at Honor Fraser Gallery; and *Elsewhere is a Negative Mirror* at Vellum LA. Other ongoing curation includes XR For Change, the XR summit at the Games For Change Festival. He writes about art, media, and emerging technology on *Forbes*, with additional writing in *WIRED*, *Billboard*, *Entrepreneur*, *Quartz*, and *The Verge*. Damiani is Founder of the *Best American Experimental Writing* anthology and formerly served as Director of Emerging Technology & Insight at Southern New Hampshire University, where he led the Future of Work initiative.

Interviewees

Anna Abrahams **Programmer — Eye Filmmuseum (Amsterdam)**

Anna Abrahams is programmer for Eye, the film museum based in Amsterdam. She is specialised in the relation between film and the other arts. It is in this context that she curates the series *Xtended*, with virtual reality installations by artists and filmmakers like Alejandro G. Iñárritu, Laurie Anderson, and Tsai Ming-liang, who are cued by the new immersive technologies to offer alternative and challenging views of our world.

Antoine Cayrol **Producer and Co-founder — Atlas V, Astrea, Albyon (Paris)**

Antoine Cayrol is a producer with 15 years of experience in the production of immersive works, transmedia documentaries, short films, music videos and high-end commercials. He is the co-founder of Atlas V, a company that specializes in the development, production, and distribution of virtual-, augmented-, and mixed-reality works.

Chloé Jarry **CEO and Executive Producer — Lucid Realities (Paris)**

Chloé Jarry is the co-founder of the immersive and interactive productions company Lucid Realities. Previously, she was the New Media Producer at Camera Lucida, where she worked on major immersive projects for over eight years, like *The Enemy*. Lucid Realities has recently launched several new XR projects, such as *Claude Monet – The Waterlily obsession*, by Nicolas Thépot, showcased at the Musée de l'Orangerie and more than 10 different museums around the world; *The Starry Sand Beach*, by Nina Barbier and Hsin-Chien Huang (official selection Mostra in Venice 2021); or *Seven Grams*, by Karim Ben Khelifa (Sundance 2022).

Eddie Lou **Founder — Sandbox Immersive Festival, Sandman Studios (Beijing)**

Eddie Lou is the founder and executive director of Sandbox Immersive Festival, China's biggest immersive media festival. Eddie is also the founder and CEO of Sandman Studios, a Beijing-based creative studio dedicated to creating and publishing premium immersive and interactive experiences. Sandman Studios' recent works *Free Whale* and *Fresh Out* were officially selected by 74th and 75th Venice Film Festival VR Competition. Eddie holds degrees from Imperial College London, University of the Arts London, and the London Business School.

Eleanor (Nell) Whitley
Executive Producer — Marshmallow Laser
Feast (London)

Eleanor (Nell) Whitley has a reputation for driving forward ambitious work in a variety of forms—live events, art installations, and digital media—her collaborations with Marshmallow Laser Feast (where she is Executive Producer) demonstrate a unique vision for the future of creative experiences.

Ingrid Kopp
Co-founder — Electric South (Cape Town)

Ingrid Kopp is a co-founder of Electric South, a non-profit initiative to develop virtual reality, augmented reality, and other new forms of storytelling across Africa. She is passionate about developing the immersive media ecosystem in Africa, expanding access to artists and audiences. She is also co-founder of *Immerse*, a publication on emerging nonfiction storytelling.

Jimmy Cheng
Director of Content and Business Operations
— Digital Domain (Taipei)

Jimmy is focusing on the acquisition and licensing of XR content as the Director of Content & Business Operations at Digital Domain Holdings Limited in Hong Kong / USA. Representing over 170 XR studios (Atlas V, Baobab, Secret Location, etc.) and servicing Oculus TV and 10 global telecoms (Orange, Deutsche Telecom, LG U+, Softbank, etc.) for finding suitable distribution/licencing opportunities. The distribution/licencing model of XR content was immature until 2019, which is why Jimmy saw the opportunity to form a solid business model for supporting the creators/studios to distribute their projects and generate reasonable revenue. From November 2018 till today, Jimmy has signed over US\$2.5M as licencing fees from all the licencing deals to support the XR ecosystem / licence model growing more mature.

Julie Tremblay
Executive Producer Installations and Touring
Exhibitions — PHI (Montreal)

Julie Tremblay has over 20 years of experience in project and team management on experiential and immersive projects that have continued to grow in complexity. Since 2017, Tremblay has been busy developing PHI Studio's location-based expertise. She produced the touring exhibition version of *Carne y Arena* and its presentation in Montréal and Denver. She is currently working on the production of the experience *THE INFINITE*, in collaboration with Felix & Paul Studios and Time Studios.

Laurianne Désormiers
Marketing Manager, Interactive — National
Film Board of Canada (Montreal)

Laurianne Désormiers has been working in the arts and new media sector for the last decade. Over the years, she's developed a growing interest for XR with the positions she held in

communications, marketing, and digital content strategy at PHI and the Canada Media Fund. She is currently employed by the National Film Board of Canada, working on immersive and interactive project distribution. In parallel with her work with the NFB, Laurianne is pursuing a master's degree in Communication at UQAM, with a specialization in cinema and moving images.

Leen Segers
Co-founder — Women in Immersive Tech,
Venture Studio Manager — Miles Ahead
(Brussels)

Leen has worked with startups in B2C online media (Netlog, Tech.eu) and B2B SaaS online video (Kaltura, Saffron Digital) in Ghent, Brussels, and London across marketing, product, and business strategy roles. After, she co-founded a deep tech startup in web-based VR/AR, Lucid-Web. She is a finalist of Inspiring Fifty Belgium, the 50 most inspiring women in Belgian tech and co-founder of NGO Women in Immersive Tech Europe, a community of 2,600+ members.

Liz Rosenthal
Co-curator — Venice VR, Founder and CEO
— Power to the Pixel (London)

Liz is Curator of Venice Biennale's International Film Festival's Official Selection and Competition programme *Venice Immersive*, Executive Producer of immersive content accelerator programme, *CreativeXR*, led by Arts Council England and Digital Catapult, and the CEO & Founder of trailblazing innovation company *Power to the Pixel*.

Louis-Richard Tremblay
Executive Producer, Interactive — National
Film Board of Canada (Montreal)

As an Executive Producer, Louis-Richard Tremblay works at the converging point between documentary and technology and is involved in projects where interactivity helps to explain phenomena that affect individuals and societies. His recent productions explore mobile experiences and immersive environments in virtual reality.

Mads Damsbo
Founder and Lead Producer — Makropol
(Copenhagen)

Mads Damsbo is a creative producer from Makropol, a production studio based in Copenhagen. Makropol focuses on creating new narratives, using new technology; provoking unexpected emotions and experiences in diverse audiences. He is currently developing a slate of projects that challenge the premises of traditional filmmaking and utilize cutting-edge technology to achieve unimaginable results.

Michel Reilhac
Co-curator — Venice VR, Head of Studies — Venice Biennale College Cinema and Cinema VR, Founder — MELANGE (Amsterdam)

Michel Reilhac is an independent author and producer of interactive storytelling and virtual reality. Since 2016, he has been the founder and curator of the official international immersive content competition Venice VR as part of the Venice Biennale for the Venice International Film Festival. Since the beginning of 2013, he is also co-founder and director of studies of the Cinema College and the VR College of the Venice Biennale.

Myriam Achard
Chief New Media Partnerships and Public Relations — PHI (Montreal)

As Chief, New Media Partnerships and PR for PHI, Myriam Achard seeks out the most innovative and immersive new works from across the globe to present in Montreal. Over the past years she has devoted a great deal of her energy to representing PHI internationally, creating a distribution network for projects in which PHI takes part today as a co-producer, operator, and distributor.

Paul Bouchard
Head of XR Sales and Acquisitions — Diversion cinema (Paris)

Having worked for 10 years in the film industry and notably in international sales business, Paul has gained a unique expertise regarding VR sales and distribution. In 2018, Paul Bouchard joined Diversion cinema to open the international VR distribution department. Convinced that immersive technology opens a whole new field of creative possibilities for artists and storytellers, the goal with Diversion cinema is to develop a virtuous distribution model and to give the public access to the best immersive productions.

Ricardo Laganaro
XR Director — ARVORE (São Paulo)

Ricardo Laganaro is an award-winning Brazilian director and Chief StoryTelling Officer at ARVORE Immersive Experiences. His last piece, *The Line*, has received several prizes globally, including Venice Film Festival and the Primetime Emmy. Ricardo entered the immersive world in 2012, creating a full-dome experience for the Museum of Tomorrow, in Rio.

Sebox Hong
Brand and Business Development Manager — Kaohsiung VR FILM LAB (Kaohsiung)

Sebox Hong is the Brand and Business Development Manager at Kaohsiung VR FILM LAB. He is in charge of local and international VR production, routine curation of VR FILM LAB theatre, and any possible cooperation of immersive experiences.

Shari Frilot
Chief Curator — Sundance New Frontier (Park City)

Shari Frilot is the founder, and chief curator of the New Frontier program since 2007, where she leads programming of new experimental film and has developed an exhibition space at the Sundance Film Festival which hosts «cinematic works at the intersection of art, film, and emerging media technologies» including cinematic and artistic projects that make use of various XR technologies.

Stéphane Rituit
Co-founder and CEO — Felix & Paul Studios (Montreal)

Stéphane Rituit is a co-founder of Felix & Paul Studios, a unique content creation studio producing groundbreaking immersive entertainment experiences in virtual, augmented, and mixed reality for audiences worldwide and distributing its content to both markets: at-home and location-based entertainment.

Tammy Peddle
Manager, Marketing and Distribution — National Film Board of Canada (Montreal)

Tammy Peddle currently leverages her vast experience to help emerging and established makers navigate endless possibilities to tell their stories and reach audiences. For over 20 years, she has worked on a number of award-winning and critically acclaimed realizations. As an experienced founder, Tammy's know-how spans the fields of marketing management, business development, sales & distribution, and digital strategy.

Yelena Rachitsky
Executive Producer Media AR/VR — Meta [Oculus] (San Francisco)

Yelena Rachitsky is Executive Producer of Media AR/VR at Meta. Yelena was the Creative Producer of the Future of StoryTelling (FoST) summit, curating and programming an invitation-only event that gathers top executives, marketers, creatives, and technologists with the vision and influence to change how people communicate and tell stories in the digital age.

Partners

MUTEK

mutek.org

Established in 2000 in Montreal, Quebec, Canada and today rooted in several countries around the world, MUTEK is a non-profit organization committed to supporting artists who push the boundaries of digital creation. The annual MUTEK Festival is a reference event in its field, showcasing audiovisual performance, live electronic music and a wide range of digital works, including immersive and XR projects, interactive installations, and projection and screen-based works.

In parallel to the artistic program, the Festival's professional component, MUTEK Forum, provides a joint platform for artists, companies, researchers and other industry players to explore the latest practices and tools, make new business connections, and nourish critical thinking with regards to technology and society.

Xn Québec

xnquebec.co

Xn Québec (the association for digital experiences producers) brings together the key players of the Quebec digital creation industry, namely more than 155 studios specializing in the production of content (original or commissioned) for various technological platforms.

PHI

phi.ca

Founded and directed by Phoebe Greenberg and based in Montreal, Canada, PHI is a multidisciplinary organization positioned at the intersection of art, film, music, design, and technology. Offering a panoramic perspective of radical ideas focused on collective experience, social impact, and audience interactivity, PHI is committed to future generations of art consumption.

PHI consists of the PHI Centre, PHI Studio, artist-in-residence programs, and PHI Foundation for Contemporary Art. Through eclectic programming and a strong emphasis on content creation, PHI fosters unexpected encounters between artists and audiences.

Festival du nouveau cinéma (FNC)

nouveaucinema.ca

A lively, bold, popular, innovative event! For 50 years, the FNC has been making national and international auteur cinema accessible, treating audiences to works of diversity and originality by emerging and major filmmakers. Our focus on the NEW is threefold: new creators, new approaches and new technologies. Dean of Canadian film festivals and a major Quebec event, the FNC presents every year over 200 works from 60 different countries to celebrate the best of today's cinema!

Rencontres internationales du documentaire de Montréal (RIDM)

ridm.ca

A non-profit organization founded in 1998 by a group of Quebec documentary filmmakers, the RIDM aims to present a selection of the year's best documentaries. Early editions showed about 40 films over five days; today the festival has grown to have a schedule of more than 150 films along with retrospectives, debates, and parallel activities. Since 2004, it has also included a documentary market, Forum RIDM.

Contacts

MUTEK

PO Box 855 – Desjardins
Montreal, QC H5B 1B9
Canada

mutek.org
info@mutek.org

Québec/Canada XR

Digital Experiences Producers
Association – Xn Québec
PO Box 32029 – Saint André
Montreal, QC H2L 4Y5
Canada

quebeccanadaxr.co
qccaxr@xnquebec.co

Study by

QC
CA **XR**

Partners

MUTEK



QUÉBEC

PHI



With the support of



Canada Council
for the Arts

Conseil des arts
du Canada



