UK Immersive Tech: VC Investment Report

supported by HTC's VIVE X







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Foreword Welcome

This report by Immerse UK and HTC VIVE X is the first of its kind. It features 31 highly innovative, fast-growing immersive technology (XR) ventures that have already raised significant amounts of external investment from a wide range of sources.

These companies show the huge potential of the XR sector, which includes virtual reality (VR), augmented reality (AR), mixed reality (MR), haptics, and a wide range of enabling technologies. The ventures highlighted here demonstrate some of the various cross-sector applications of this technology ranging from media and entertainment to medicine, manufacturing, education, training, fitness, and humanitarianism.

There have been some particularly interesting areas of growth in the industry over the past year. XR startups that have successfully been deploying pilots of their products have been scaling up, while major industry players have been making significant moves to solidify their long-term XR strategies. Snap's \$500M acquisition of Didcot-based AR displays developer WaveOptics, announced in May, is a prime example. Deals of this nature refocus the minds of many entrepreneurs and investors in the space, and may be a sign that similar M&A deals are on the horizon.

Although London continues to dominate the UK's tech investment sector, the immersive ventures featured here come from various regions across England, Scotland, Wales, and Northern Ireland. Together they already employ nearly 1,000 people around the world, and have raised over \pounds 135M.

Many of these companies have been effective in combining commercial investment - such as crowdfunding, business angels and institutional venture capital - with public funding - such as Innovate UK grants through programs like Audience of the Future. Some have also benefited from business support from other publicly funded programmes such as the Creative Industries Clusters programme and the Digital Catapult's XR accelerator, Augmentor.

Many companies have highlighted the well-timed combination of these resources as a contributing factor to their ability to scale, and transform R&D projects into commercial products.

Despite these successes, the report also shows that there's some way to go. The UK attracted more than \$15bn in tech venture funding in 2020 in spite of the Covid-19 crisis, according to <u>Tech Nation</u>, but immersive ventures are only taking a very small share of that capital. Meanwhile, an even smaller number of those companies receiving funding are led by women or people from diverse backgrounds. There's a lot more work to be done in encouraging company founders from a more diverse range of social, cultural, and educational backgrounds.

We hope this report demonstrates the breadth of talent that exists across the whole of the UK, and that it will inspire more investors to get involved in the immersive sector. We also hope the lessons learned by founders who have successfully raised VC funding will be of value to XR startups that are looking to raise.

Thank you to everyone who has continued to support KTN's Immerse UK innovation network, and has contributed to this report, as acknowledged on page 41. We would especially like to thank the KTN executive team and all of our colleagues from the wide range of cross-sector KTN teams for continuing to recognise the value of the immersive sector and helping us to invest in growing a stronger XR ecosystem in the UK.



Asha Easton Immerse UK Lead, KTN



Shaun Beaney Corporate Finance Faculty, ICAEW Chair, Immerse UK's Access to Finance Working Group

Introduction

Every 10-15 years we have seen a paradigm shift in the way we do computing (eg. from mainframes to PCs to mobile). When these shifts occur new capabilities and use cases are unlocked, disrupting entire industries and creating opportunities to invest in a new generation of billion dollar companies.

However you want to define them - Immersive Tech, Extended Reality (AR/VR) or Spatial Computing - the companies featured in this report are betting on these set of fast emerging technologies as a key part of the next paradigm shift. Whilst some are building key tools & infrastructure, others are set on disrupting the way we work, play, create and collaborate. From fundamentally changing the way we train surgeons to re-imagining how we keep fit.

In a PWC report, <u>Seeing Is Believing</u>, it is forecasted that VR and AR alone have the potential to add \$1.5 trillion to the global economy by 2030. And the UK is well positioned to benefit, with a predicted \$69.3bn boost to the economy and over 400,000 new jobs created by 2030. But in spite of the forecasts for what seems like an inevitable future, one key challenge cited by almost all the founders we interviewed is raising the required venture capital to build this future.

A new phase in the hype cycle

The question of timing seems key. Amara's Law states that humans tend to overestimate the impact of new technologies in the short term, but underestimate them in the long term. Sure enough, in 2016-17 we saw record levels of investment going into the immersive sector, and new startups created, as VR and AR first came to market in a serious way. However, the following 2 years saw the hype dissipate as we entered the 'trough of disillusionment' on the much-cited <u>Gartner Hype Cycle</u>. Some investors, including HTC's own VIVE X continued to invest through the cycle, but with many tech pundits writing clickbait headlines, the sector became unfashionable for many, leaving behind the most resourceful and ambitious founders.

Fast forward to 2020-21 and the mood music has notably changed. The founders interviewed for this report all reported an overall positive environment with 35% of investors surveyed expecting investment levels to increase over the next 12 months. But why? Well there are a number of factors, but over the course of our interviews three themes keep repeating themselves.

Sector gains as we move to the new normal

Firstly, despite its drawbacks for the overall economy, the immersive sector has been well placed to benefit from the global pandemic. Lockdowns all over the world have led to consumers looking to virtual worlds to spend more of their leisure time and connect with others. Whilst, workers and their employers have thrown out old ways of working, turning to technologies such as VR to collaborate, design together or host and attend virtual events. As we return to whatever the New Normal will be, many old habits will be replaced by new ones and many industries will turn to solutions such as VR/AR to train new skills to a workforce that must adapt. This hasn't gone unnoticed by investors. A third of our investors surveyed stated their appetite for investing in this sector had increased since covid.

Next generation hardware has arrived

Secondly, we're seeing a new generation of hardware emerge. VR has become more accessible at the lower end, pushing us closer to mainstream adoptions, whilst the higher end is well served for both enthusiasts and Enterprise customers. Running parallel to this, the ongoing rollout of 5G and increased sophistication of cameras and sensors in smartphones and other devices will unlock new use cases in augmented reality.

A maturing ecosystem

Thirdly, the immersive tech ecosystem has matured. The quantity, quality and distribution of consumer content has increased exponentially, whilst startups selling to enterprises can now do so by showing proven ROI rather than relying on hype to secure POC's.

So now is the right time to put the spotlight back onto the immersive tech sector for investors. The strength and breadth of companies highlighted in this report show that there is already real substance and we believe the investment opportunity is only set to increase over the next year.

This was highlighted very recently with the \$500m acquisition of UK-based WaveOptics, a company that was set to appear in this report. This is one the first (but not the last) of many immersive tech success stories to come.



Dave Haynes Director of Developer Ecosystem & VIVE X EMEA, HTC VIVE

10 Featured Companies

Anything World

Last Round Raised: Pre-seed Total Financing: £600k

GARAGE & STUDIO







Developer Tools. Gaming







Currently focused on casual gaming, Anything World is a platform that can bring 3D models to life. With access to over half a million 3D models and implementing machine learning to add behaviours and animations, the Anything World system also features voice-activated commands, so that users can create and control a world with their voice.

Gordon Midwood, CEO and technical co-founder at Anything World, believes the power of voice is a natural interface when using a VR application. "You don't want to hold your device at an awkward angle," he says. "And when mixed reality headsets come out, it's going to be quite a magical experience to have anything you want added to your world just using your voice."

Anything World allows users to request limitless 3D objects with behaviours applied, which means, according to Gordon, the platform nexus will be mixed reality devices. Anything World currently has a few VR apps in development, including one for an autism charity that helps children relate to each other in playground situations.

Customer Success

Gordon says the company's biggest clients are Ubisoft and Warner Music, but other big names include Facebook's Creative Shop, plus a wide range of medium-sized independent game creators, including Choice Provisions, Spilt Milk Studios, Preloaded, Rehab and Nexus.

Working with Warner Music has been a game-changer for Anything World. After building an app for the music giant through which users can sing along to their favourite artists, Warner Music invested in Anything World and now the two businesses are working on several projects together.

Beyond casual gaming, Anything World is looking to develop opportunities in a number of different areas, including music, drawing on Warner Music as an investment partner.

Fundraising

Anything World joined its first accelerator programme with Ubisoft in 2019 after developing its minimum viable product. This brought the company credibility and a path to Techstars in late 2019, which provided Anything World with £100k funding and access to connections. Dave Haynes of HTC VIVE X made the pivotal connection to Warner Music, which led to a pre-seed investment of £350K. Anything World is currently working to close its Seed Round led by Supernode Global.

Anything World has achieved development without public innovation funding. After careful consideration, the company decided against undertaking lengthy application processes, opting instead to maintain agility and speed to get to market with the backing of accelerators and private investment. With further research and development planned in collaboration with a university for machine learning expertise, this seems like a good opportunity to consider accessing public innovation funding.

New Normal

The lockdown-induced growth in demand for gaming has had a positive impact on Anything World, with Gordon generally optimistic. After some of its partnerships went quiet in the early days of the pandemic, Anything World had time to focus on product development and to build a community of creators, leading to an Alpha launch in May 2020 and a Beta launch in October. The platform now has nearly 1,500 users.

Bodyswaps

Last Round Raised: Seed Total Financing: £549K















Bodyswaps is a B2B VR platform through which employees can practice valuable soft skills, such as communication, management, leadership and emotional intelligence, by interacting with virtual humans in workplace scenarios in virtual worlds. Participants can experience the scenario from different perspectives by switching places with the virtual human, or seeing a playback of their own avatar. This is a valuable tool that helps companies deliver effective soft skills training at scale.

Bodyswaps co-founder, Julien Denoel, says that the platform is *"a way* of combining the experiential impact of face-to-face learning with the scalability of digital solutions". Bodyswaps has worked with a range of customers, including major non-governmental organisations (NGOs), such as Save the Children, French telecom giant, Orange, and Sage Publishing. Its target industry is currently corporate learning, but Bodyswaps is also seeing strong growth in demand from the education sector, particularly in higher education.

Customer Success

One particular success story for the company was the development of Safeguarding VR. It is an innovative training experience developed in collaboration with the <u>Humanitarian Leadership Academy</u>. It combines embodied VR and conversational AI to train NGO staff on how to handle difficult safeguarding conversations. It is currently being piloted by a growing list of organisations, including: Save the Children, The International Labour Organization, The UN Refugee Agency and The Norwegian Refugee Council.

Using an analytics dashboard that includes behavioural and semantic data, learners receive personalised recommendations on how to improve. Data is aggregated to protect individual users' anonymity and transmitted in real time to a secure analytics platform for employers. Feedback for this product has been extremely positive, with 89% of learners looking to apply what they learned in the simulation to their work, and 85% of learning managers looking to expand the training further into their organisation.

Growing Market

The pandemic has forced companies to become more creative with the way they train remotely. Julien notes that, over the past year, the Bodyswaps team has seen a steadily increasing number of companies take the opportunity to get themselves equipped and start to roll out VR training solutions at scale. Julien hopes this trend will continue to be a priority for learning and innovation departments post-COVID.

Bodyswaps is also experiencing strong growth in demand from the education sector, particularly higher education as a result of COVID. *"We strongly believe that building a library of affordable, off-the-shelf simulations is a great value proposition for customers going forward,"* says Julien.

Why UK?

"From a technological point of view, the UK feels more advanced than the rest of Europe," says Julien. "It fits somewhere between the US & the rest of Europe." Access to exceptional talent was a major draw for the Bodyswaps team when it decided to be based in the UK. Access to a wider pool of investors, plus valuable government support available for innovation also played a significant role in its decision.

Bodyswaps

Fundraising

Bodyswaps started looking for investors at the beginning of 2020 for its latest round, which closed in September 2020. There were some challenges around raising at the start of the pandemic, says Julien, as many investors were less inclined to take risks and were focused on reinvesting in their existing portfolio companies. The team also spoke to multiple early-stage investors who in the end wanted to see more revenue and traction than Bodyswaps could offer.

Ultimately, the team was positive about the investment journey because it leveraged support from the public sector. It benefited greatly from being part of the Digital Catapult Augmentor programme, through which the team learned about product development and how to structure a pitch and find investment. The team then went on to win Innovate UK grant funding in the Audience of the Future Investor Accelerator programme, with funding matched by VIVE X.

"We used to be an agency and Bodyswaps started as a project for a client," says Julien. "We applied for grant funding with the prototype and this completely changed our trajectory. We scrapped our agency model, focused 100% on building a product and moved to a SaaS model. Without the grant from Innovate UK we wouldn't have been able to make that shift, and without that shift we would have never secured VC investment."

A seed round of investment led by UFI Ventures with D Moonshots and Haatch Ventures followed, bringing expertise necessary to grow the business. The combination of investment from VIVE X, a market leader in VR Hardware, UFI, experts in learning tech, and Haatch, a fund with founders who have previously exited businesses, has been extremely valuable to the Bodyswaps team.

According to Julien: "The investment has enabled us to grow the core team, mainly on the product side of things. We have made a key hire with our head of learning design and this is having a big impact in our company. We are confident we can hit our next fundraising milestone in 9 to 12 months."



New Normal

"It might have been easier to raise without COVID, but it's hard to say because we have never raised in a COVID-free time," says Julien. Last spring, many investors Bodyswaps would have, that were interested in XR, had frozen investment, he adds.

Julien says it is important to conduct due diligence on funds to make sure they are, in fact, investing in early-stage companies and suggests focusing on angel investors to begin with, and then speaking to funds that specialise in the target industry verticals, as well as XR-focused funds.

"Your investor is not someone who just gives money," he says. "Their real value is on what else they can do: they can open doors, they can give you advice, they can support you. It is really valuable to have this kind of relationship with your investors."



FitXR

Last Round Raised: Series A Total Financing: £6.91m





FitXR is a digital fitness company offering immersive fitness sessions at home that are fun and engaging for consumers. Formerly known as BOXVR, this popular fitness app has a suite of VR programmes designed by world-class trainers for all fitness levels. Users can track their performance in real-time and compete with others on a class leaderboard.

FitXR sees mixed reality headsets as the next computing platform after smartphones and the team believes that offering a visual content layer to workouts will completely transform the way people perceive fitness programmes.

Customer Success

With the release of FitXR at the end of 2020, the company has transitioned from being a boxing app to one that supports a variety of fitness verticals. It has further developed the product to offer a more holistic fitness experience as a result of customer validation and feedback.

"Oculus named us one of the top non-gaming applications on its platform, with one of the highest retention rates," says FitXR CEO, Sam Cole. "Our fourth quarter sales increased by 535% year-on-year, and our weekly active users have increased fourfold since the release of the Oculus 2."

He adds that the company's customer demographic is broad. **"The power of** *immersion, if it's done well, is that you can get lost in an experience with no distractions and get into a flow-like state while exercising,"* he says.

From a fitness perspective, FitXR is seeing customers, who have been sedentary and who have never found any form of fitness engaging, transforming into regular users. The team attributes this to the fact that the product offers something different from what people think of as traditional fitness and that it appeals to a wide range of users who are looking for something new.

Based on customer feedback and lessons from the group fitness industry, FitXR is set to roll out a new multiplayer mode imminently. This will offer customers a synchronous experience with other users and allow them to participate in group classes. The team is also working on a mobile companion app and additional ways to use wearables to track movement.

Hiro Capital

Growing Market

The FitXR team sees the release of more stand-alone headsets as a significant milestone in the growth of the XR ecosystem. These have been selling well and growing the consumer market. As a result, a wider demographic of consumers looking for uses beyond gaming is emerging. Sam believes that fitness is the next top use case.

"At the moment, just over half of our sales come from the US market, but we are seeing a real spread in terms of age, gender and fitness ability," says Sam. "The consumer side of VR was initially pitched as a gaming console, but now we are seeing all kinds of use cases for social experiences and productivity tools begin to scale. We believe that, as VR becomes more mainstream and as people start to buy headsets for different reasons, the spread of our customers will continue to grow."

Why UK?

Although the US has been the biggest market for FitXR from the beginning, both co-founders were based in the UK when they started the company and they feel they have never had a strong enough reason to leave.

Sam adds that the UK is a strategic place to grow the team. Despite a growing number of international hires, most of the team remains based in and around London.

FitXR

FitXR has also received valuable support from Innovate UK, which contributed to its last funding round in the form of an innovation loan. This enabled the company to continue to invest in making its content creation process more efficient, giving the company a long-term, strategic advantage.

Video games tax relief benefits have also been hugely important from a cash flow perspective, allowing the founders to reinvest in the company and the product. This has meant FitXR has only had to raise a fraction of the investment raised by its US counterparts to build the team and the company.

Fundraising

Sam has found the market to be bearish to VR in general. He found it particularly challenging to fundraise at the beginning because the team missed the initial hype that existed around VR in 2016.

Despite this, the founders met Adam Draper from BoostVC early on in San Francisco, who wrote a pre-seed cheque and then led their seed round. *"For us, that was really important because, despite being a London-based company, we built connections early on to the Valley, which helped secure future funding rounds and assisted with building our relationships with partners."*

All of the funds that supported the seed round, including TenOneTen, Maveron and BoostVC participated again in the Series A round, which closed in July 2020 and was led by a new British fund, Hiro Capital.

"It's been great for us to work with a more local partner for our Series A. We had fully expected it to be led by a US fund, but we have been very happy with the support we have received from Hiro," says Sam. "The fund partners that we deal with are now our board members so they are a key part of our journey."

Sam's team bootstrapped its way to a product that was released on Steam with early access so the company could start showing early customer traction. Back then, the industry was hungry for content and even though the space has now changed, his advice to founders is still to bootstrap to an early prototype and then gain customer validation and feedback to iterate the product.



New Normal

From a customer perspective, Sam feels that FitXR has been fortunate. *"We have seen people searching for new ways to exercise at home, and generally there has been a larger uptake of VR by consumers looking for new ways to entertain themselves during lockdown,"* he says.

The company did face some challenges in scaling and bringing new staff on board during the pandemic. However, it had managed to grow from 18 employees to 60 by the end of 2020.



FundamentalVR

Last Round Raised: Series A Total Financing: £7.6m













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Downing Ventures, Tern PLC, Epic Private Equity, Nexus Ventures, Brighteye Ventures, The Mayo Clinic, Sana Kliniken, Founders Factory

FundamentalVR has designed a proprietary haptic VR platform that is replacing wet labs and cadaveric training. It offers remote, collaborative virtual training that has the potential to accelerate life science product adoption by medical professionals. The platform is hardware agnostic so it works seamlessly across multiple haptic and VR devices. Further, it is highly accessible to potential users because it works not only with a tethered haptic system, but also with stand-alone, low-cost headsets that are readily available on the market.

Throughout 2020, FundamentalVR has focused on developments in two key areas: making the platform robust, scalable and capable of being used by unlimited numbers of concurrent VR users at a time; and building software development kits. The first development allows collaboration across all parts of the platform between surgeons around the world without them having to travel – this was vital when Covid hit. The second development allows customers to amend, tweak and adjust simulations themselves.

Customer Success

FundamentalVR works with a range of clients from around the world from pharmaceutical and medtech companies, such as Novartis, Stryker, and Medtronic, through to institutional organisations, such as the Mayo Clinic, the NHS, Sana Kliniken and NYU Langone.

Precision and cost-effectiveness are two of the most important requirements for FundamentalVR's clients. According to Richard Vincent, FundamentalVR's founder and CEO, the platform has dramatically reduced the cost of bringing a product to market for its pharmaceutical clients. It has also significantly increased its training efficacy when compared with traditional approaches.

Growing Market

"Nobody would have wished Covid on the world," says Richard. "But when we look back, I believe we'll see it as the inflection point in our market. In the life sciences space, precision VR has gone from an innovation project to a mission-critical requirement."

After a challenging year of lockdown, life sciences organisations are looking ahead to the next 10 years, says Richard, and are concluding that VR training is becoming an essential part of their go-to-market strategy.

He adds that customers know that product adoption in their markets depends on effective training, education and building confidence and competence. Pharmaceutical and medtech companies will therefore need to consider adopting VR solutions with precision haptic capabilities.

Why UK?

FundamentalVR's primary market is the US, so long-term plans for the company include the continued development of its US base. However, the company's UK HQ proved beneficial during the early stages, when it was securing angel and Series A funding.

Richard also points to *"an incredible talent pool of technologists, machine learning experts and VR specialists in and around London"*, which makes the UK an ideal base for immersive tech businesses. Additionally, being in the GMT time zone helps, he adds, especially when it comes to staying connected remotely to people in different time zones around the world.

FundamentalVR

Fundraising

Raising investment has been essential for FundamentalVR to scale up. "We're a classic technology business," says Richard. "We're investing heavily ahead of the revenue curves coming through. We've always made good revenue as a business, and that is developing fast. Building platforms such as ours needs funding fuel."

FundamentalVR's funding history includes securing angel investment, participating in the Founders Factory accelerator programme, and attracting seed funding (led by Tern) and Series A funding (led by Downing Ventures). Additionally, it has also received funding from strategic investors with which it had previously partnered (including The Mayo Clinic), as well as around £450K from Innovate UK in 2018. *"The grant helped us with some of the core, early-stage build - our haptic intelligence engine. It was a significant grant, which was really, really helpful. And it wasn't just the money, it was also the other services that were useful."*

Richard describes the company's investment journey as a very long education process. The challenges FundamentalVR has faced, and continues to face, in securing funding are common for companies working in the immersive tech space.

"We're technology, we're med device, we're med tech," he notes. "The positive side is that we can go and talk to lots of different VCs. The downside is that we don't fit any one of them perfectly. We're a SaaS business, but we have significant up-front configuration."

With FundamentalVR at the point of seeking Series B funding, Richard also highlights the ongoing and intensive efforts that immersive tech businesses require to secure investment. *"With every VC that we're working with today, we have spent at least 12 to 14 months in building up their understanding before they invested,"* Richard says. *"That process is important. When you're in a start-up, even when you are in Series A and going to Series B stage, you're still building your market. People want certainty at a time when that's hard to deliver, particularly when you factor in that it's a new market in a new space, plus COVID and then Brexit on top. It becomes an interesting matrix of challenges."*



Having been through the process, Richard has some great tips for companies seeking investment. "Start early and build relationships as quickly as possible," he advises. "Don't expect to turn up, have two meetings and secure your funding. You might do it, but you'll be the exception, not the norm."

He adds that start-ups need to be clear about what they want from their money and investors - there's more to it than simple finance, particularly during the early stages. *"It's worth thinking hard about the value the investors can give you because, as you go through the journey, you really start to see what that value is and how important it is to get that right,"* Richard says.

New Normal

The pandemic has accelerated the adoption of immersive technologies across the life sciences sector, but it is also making FundamentalVR's plans to make new connections in the USA with potential investors uncertain because face-to-face meetings are impossible during lockdowns. *"It appears to not be holding us back at the moment, but there are some VCs who are saying 'we won't invest unless we at least meet the founder,"* says Richard. *"There are others that seem to be happy to go through the process without making that connection. But we'll see; we're in unknown territory right now."*



Gravity Sketch

Last Round Raised: **Seed** Total Financing: **£4.25m**













Gravity Sketch is a 3D design platform that uses VR technology to streamline design workflows and support collaborative working. Clients can create their design ideas in real time, at any scale, from concept sketches through to detailed 3D models. Gravity Sketch's technology can be applied to transportation, from bicycles to aircraft, as well as to industrial design and particularly to designs that involve the human body, such as footwear. These are the company's target sectors, but Gravity Sketch is also used widely in games assets creation and media entertainment.

Customer Success

According to Gravity Sketch co-founder and CEO, Oluwaseyi Sosanya, 2020 was a turbulent year for customers, but its software solutions, along with its customer support service, have helped clients address the challenge of teams working remotely while unlocking brilliant design with clearer communication. For some, the platform has streamlined timelines and saved money.

"A tremendous part of the design process is working together and creating mood boards in real time in the studio," explains Oluwaseyi. "The shift to working from home has therefore been a huge challenge for some of our customers. This meant we just had to step up to the plate and help them understand the space in a very short period of time... So we ended up sending out a tonne of headsets to different customers to help then scale up and work in real time collaboratively."

Gravity Sketch's creation tools have been great for customers, adds Oluwaseyi, but the most compelling stories for its VR software adoption have been around the impact on communications and getting teams to work together collaboratively in the same virtual space. One of Gravity Sketch's customers, a Czech-based car designer, has adopted Gravity Sketch to develop car designs for manufacturers, such as Skoda. Its VR technology helped reduce elapsed time by around 40% and man hours by 60%. Additionally, it reduced the need for clay models – traditionally, the design process required around five clay models and five people working together, at a cost of between \$150k and 250K per model. VR technology meant that just a single physical model was necessary, which significantly lowered design costs, their carbon footprint, and increased staff safety during the COVID pandemic.

Growing Market

Oluwaseyi is positive about the future opportunities for the immersive tech sector. He notes that design customers are looking for innovations that can foster team collaboration and amplify creativity, while also cutting design time. Customers are also looking for ways to gain an edge over, or level up with, their competitors, and using VR platforms can help them achieve this.

With some of the world's largest companies now investing billions into this space, Oluwaseyi believes that timing is key because there will be an inflection point where immersive technologies take off. At this point, he adds, the full picture of the immersive product ecosystem will become apparent, making it a more attractive and understandable investment proposition.

Why UK?

The UK provides an attractive location for emerging immersive tech businesses with ambitions to grow, according to Oluwaseyi. This is because the UK's creative industries are an intrinsic part of the overall economy and the country has strong expertise in design and design engineering processes. This can help with connections to customers and investors - even if they don't have a strong understanding of VR, they have an appreciation that design is an essential part of everyday lives.

Gravity Sketch

Oluwaseyi also points to the UK's talent pool. Gravity Sketch is based on physics and computational mathematics and has been able to draw on crucial graduate expertise in these fields.

He adds that the UK's startup environment is pragmatic. *"There isn't this aura of a start-up bubble,"* he says. *"You either put the numbers up or jump ship - and that makes for a more resilient founder."* This can make developing a business in the UK more difficult, but it has the advantage of building credibility in individual companies and in the wider immersive ecosystem.

The UK's geographic position is also beneficial for Gravity Sketch, which has a customer base on both sides of the Atlantic.

Fundraising

In addition to a first round of VC funding, Gravity Sketch has also raised around €2m of Horizon 2020 funding and approximately £1m Innovate UK funding, plus smaller grant funding from several sources.

Securing VC funding has been a learning curve for Gravity Sketch. As for many tech start-ups, investors not understanding the technology was a key challenge to address. Investors also perceived Gravity Sketch's work as niche, which raised questions about the viability of the businesses as an investment prospect.

Oluwaseyi says companies therefore need to commit time and resources to educating investors on immersive technologies' potential. Gravity Sketch's participation on the Digital Catapult Augmentor Programme offered the company the chance to do just that, making crucial connections with investors as well as gaining support for growth and learning as an emerging company. *"It gives an environment where it's not so risk-averse,"* says Oluwaseyi. *"When I meet investors through Augmentor... it allows for us both to be educated. I'm learning about the investor ecosystem and its reservations; they're learning about VR."*



New Normal

For Gravity Sketch, there have been few negatives stemming from the COVID pandemic. The nature of the business, and its customers' immediate changing needs as a result of the pandemic, have brought Gravity Sketch faster growth, as well as time and space to grow. *"It gave us a laser focus,"* Oluwaseyi says. *"All our customers started to understand and think about cloud as an option, because people were working from home. It accelerated what we thought would take two years and compressed it into six months."*

For example, during 2020, Gravity Sketch developed four trials with large sportswear and automotive companies. *"Essentially, we laid the foundations in 2020,"* Oluwaseyi notes. *"We have everything teed up for 2021 to start monetising. We'll really see growth."*

A main challenge during lockdown was the team having to spend more time focusing on customer success, undertaking new procedures, such as sending out headsets. *"But other than that, it's been an awakening for our customers that we've been waiting for for a long time,"* says Oluwaseyi.



LoveShark

Last Round Raised: Seed Total Financing: Undisclosed















Founded in 2018, LoveShark is a London-based studio that produces camera games for mobile phones, harnessing technologies such as augmented reality and computer vision. Its games are designed to be short, creative and played using the phone's camera.

LoveShark's aim is to build an alternative social game space for Gen Z girls and women, aged 13-24, using content designed just for them.

Customer Success

As a B2C company, LoveShark's customer success relies heavily on connecting with consumers. Its first game, Laser Draw, which launched in 2018, was featured by Apple globally and had over 100,000 downloads. LoveShark achieved this with no marketing, giving a hint of social games' potential traction. When Apple featured LoveShark's dance.io game, a significant proportion of players shared the videos at the end, which demonstrates the commercial potential for social game downloads, as well as for the viral sharing of content.

Growing Market

The success of LoveShark's first social games dismisses the outdated idea that *"typical gamers"* are male and in their teens/twenties. LoveShark's CEO, Tara Reddy, believes that developing games that appeal to a broader audience who wouldn't necessarily label themselves as gamers, plus making games more accessible, are key to opening doors to new markets.

"You have grandmas playing on their iPad and mums playing Candy Crush," she says. "Little kids are playing children's games. Nearly every single person. We know women tend to spend more in-game than men. And the fact that now you have games like Fortnite launching on multiple platforms within months of one another, which never would have been possible in the past, means it's all more accessible." Tara also highlights the trend towards user generated content (UGC), which is offering exciting growth opportunities. "Now you're starting to see a new type of UGC that creates games and interactive experiences for others to play," she says. "So, you already see this in games like Fortnite and Minecraft in their creator modes, but now we're starting to see it on mobile, where people can create games for others to play. That's an area that we're super excited about because we are working towards making UGC camera games, so anyone in the world could create a camera game that others could interact with."

Why UK?

As a UK native, setting up business in the UK was a natural choice for Tara and the LoveShark team. This meant they were able to draw on their market knowledge from their previous roles, as well as draw on great networks and access to world-class talent. Tara also suggests that a good starting point is to build the business where your market is.

Fundraising

In 2018, LoveShark raised a round of angel investment, followed by an Innovate UK Smart Grant and funding from Hoxton Ventures in 2019. In 2020, LoveShark's seed round included funding from Index Ventures, Moonfire Ventures, and Progression Ventures.

LoveShark

Despite this success, Tara has found the funding journey a challenge. This was particularly the case in the company's first year, when the team found it hard to be taken seriously – and this, she says, is where businesses need support to attract their first cheque. *"At the start, we had a lot of misses, a lot of people didn't really get what we were doing,"* adds Tara. *"People were over AR, people were not interested in social media, so it was definitely a bit of a hard push for the first 18 months. After that, when TikTok started to go mainstream, the power of the camera and vertical video was revitalised. The second year we had a little bit of traction.... and then the third year, the market just heated up suddenly. I don't want to say [it became] easy, but it became fine."*

Tara notes that, although AR and VR has had a funding dip, investor interest in immersive technologies is on the increase. *"Products like SnapChat and TikTok are showing that AR, or AR-powered companies, can grow into billion-dollar-plus companies. The market is proving that this space is important,"* she says.

LoveShark's investment to date has supported the company to scale up. "It's been amazing to be able to hire people before we absolutely pass capacity, because in the past, that's how it has been.... now we can think ahead, we can plan ahead," says Tara. "It means that we can spend much more on our marketing and testing budget so we can do marketing tests, to test the proposition and the conversion rates... and get good enough sample sizes onto the product so that we have significant data to make decisions. It means that we can start to build the brand a bit more as well, because we can promote ourselves in more channels rather than having to be very, very lean on budget."

New Normal

The behavioural change brought about by the pandemic has, in many ways, affected the gaming sector positively. Tara says that COVID has made fundraising more founder-friendly in some respects because it has removed geographical limitations. *"You can have those calls and investors are starting to become way more open to investing internationally,"* she says, adding that this coincided with the sudden reduction in the range of companies that could be funded, so that game companies garnered much more attention from potential investors.



COVID also meant that investors started to focus on entertainment and activities you could do at home, including social gaming. *"Social media started to see a bit of a renaissance in investing after TikTok broke out,"* says Tara. *"Until then, investors thought that Facebook and Snapchat owned social media and that no -one would be able to dominate that space again. So I think the combination of the rise of TikTok, COVID and the increase in gaming, plus fewer available options for investors, have all made the fundraising landscape more lucrative for us."*



Maze Theory

Last Round Raised: Seed Total Financing: £1.85m investment















Maze Theory is an immersive entertainment studio that focuses on games. The company produces narrative-based and dramatic storytelling for VR, console and mobile. Its recent Doctor Who game trilogy, for example, started out in VR but the studio is currently developing a mobile and console game to accompany it.

Ian Hambleton, CEO at Maze Theory, describes the company's passion for 'story universes' like Doctor Who. *"We've created three games that have sub-stories within the same time and world,"* he explains. *"However, we're not massive fans of just replicating the same game on different platforms. We try to tell an immersive story in the way that is best for each device."*

Customer Success

With the Doctor Who story universe as Maze Theory's initial game in the market, it is no surprise that Ian and the team have built a strong relationship with BBC Studios. This has led to the development of further stories, including Peaky Blinders VR and console games in conjunction with EndemolShine, with further announcements to come. Maze Theory works with partners to develop their own IP and games to launch to consumers.

Growing Market

Maze Theory's sales have been impressive, even with just one game currently in the market. Sales totalled over \$1,000,000 in the first five months with current sales at around 5000 copies a month. This long tail of sales has surprised lan. "We've found that the VR market is starting to tip and is growing considerably." November and December 2020 were the company's highest revenue-generating months, with a boost from Black Friday and Christmas activity. "The momentum is there now," says lan. "VR had five years of being overhyped but now it's starting to live up to the early promise. I think more headsets are focused on usability and people. That's what excites me for 2021."

Why UK?

Innovate UK's grants and continuity loans provided support to fund Maze Theory's Peaky Blinders and Al narrative character projects. From this, the company was able to create a prototype, after which it incorporated Al in characters.

Maze Theory's aim is to create human-like interactions for users as opposed to creating an AI super engine. With the prototype delivered, the company received further funding support for the hardware platform.

Maze Theory has also worked with the Story Futures Gateway Cluster. This helped the company create story workshops mixing traditional TV writers with gaming and interactive writers in workshops together to produce interactive narrative.

SEIS video games tax credits have been another of the UK's attractions. *"Before launch, when making games you're burning through money so anything that mitigates that is huge for us,"* says lan.

Fundraising

HTC VIVE was a lead investor in Maze Theory through match funding for the Innovate UK Audience of the Future Investor Accelerator competition. The company also closed a £1.1m round from Calculus Capital. This has allowed it to hire a technical director, art directors and grow the leadership team, increasing staff number from 12 to 38 people.

Maze Theory

New Normal

COVID has both helped and hindered Maze Theory, according to lan. The gaming market exploded and all platforms were sold out, with gaming engagement hours up by around 200%. This has clearly benefited the gaming industry and lan predicts this boom will continue even as markets open up because there may be a downturn. *"Gaming does well in recessions because people can choose to spend £50 on games to provide entertainment for a couple of weekends instead of spending £100 going out,"* says lan. *"If you look at some of the industry curves, like the 2008 recession, the games industry went up."*

Increased appetite among investors has been another upside, according to lan. Maze Theory has had new approaches from investors keen to capitalise on the booming games industry, especially around VR. *"There's less scepticism today and clued up people are starting to recognize that this industry is doing quite well';"* he says.

Assembling products remotely has been challenging, but Maze Theory may continue to operate this way. It has a small office in Farringdon, London, which can take 12-15 people. This will be an option for employees when they can go back.

Remote working has some benefits – the company has been able to draw on a bigger talent pool and has started to hire people from all over the UK and some European countries. The tech director is in Falmouth, some of the artists are in the Lake District and a couple of coders are in Liverpool. COVID has removed the barrier of looking for people in London to come to the office.





Poplar Studio

Last Round Raised: Seed Total Financing: £2.75m







Marketplaces









Poplar Studio is a creative platform that helps brands, retailers and companies produce 3D and AR marketing and advertising campaigns. Using a network of more than 2,000 creators around the world, the company achieves this simply and affordably. Founded in 2018, Poplar has built a community of developers, animators, and 3D modellers that it connects with AR campaign briefs from brands, such as L'Oréal, Nestlé and Universal Music Group, and from media agencies, such as Havas. Poplar CEO and co-founder, David Ripert, says that "this is a more affordable way for brands to produce AR content and campaigns than using an agency or studio".

Typical AR campaigns include face filters and AR worlds that audiences reach through Poplar partners in the social media space, such as Snapchat, TikTok, Facebook and Google. Poplar is also seeing strong growth in demand for using AR in retail, where it provides embeddable 'virtual try-on' units under a SaaS model in mobile shopping and e-commerce.

Customer Success

Poplar uses three KPIs for customer success, according to David - brand awareness, engagement time and conversion. He offers three examples: an AR filter campaign on Instagram and Snapchat for UK artist Big Shaq, which resulted in 25m impressions; an interactive AR campaign with Purina's Felix The Cat for Nestlé, which led to above-average engagement time on the advert; and a virtual try-on experience for over 35 different variations of swimming goggles for Speedo, which increased customers' intent to buy by 11 times.

Growing Market

David is bullish on the global AR mobile market and is seeing huge growth in customer appetite. Figures back this up: a recent ARInsider report said that the market will be worth \$21B by 2024.

There are three main drivers for this. First, David is seeing a broadening of customer type interested in AR. The company started out serving predominantly the entertainment sector, but it now also sees demand right across retail, food & beverage, fashion, luxury and beauty.

The second is the growth in distribution as more platforms adopt AR. TikTok recently opened up AR functionality to select partners (including Poplar Studio) and Poplar Studio has also recently started experimenting with the new Google Swirl 3D format. In eCommerce, Poplar Studio is now able to embed virtual try-on and product visualisation units into Shopify, BigCommerce, Magento, Woo, and any website directly.

Finally, the tech is improving too. The big tech platforms, including Facebook (SparkAR), Google (ARCore) and Apple (ARKit), continue to invest, while a whole slew of AR-native companies, such as 8th Wall, Zappar and Blippar, are developing innovations, such as body tracking and using new LIDARequipped phones to map rooms for deeper experiences.

While Poplar is currently focusing on mobile AR, David is excited about the future of visual search with head-worn and 'glass' AR, too. Mobile AR works well at home, but it becomes more powerful when walking around and receiving contextual information overlaid on the real world without the need to hold a phone.

Why UK?

As someone who has lived in both New York and Paris, it's notable that David chose to set up Poplar in London. He explains that London provides the perfect intersection for the different parts of Poplar's business. The US has many different centres, he adds, such as San Francisco for technology and investment, Los Angeles for entertainment, Washington for power and regulation, and New York for media and advertising. London, however, has all this in one centre and, despite Brexit, is still a hub for Europe. Yet the company has a keen eye on the US for expansion and will likely look to US investors for at least part of its next financing round.

Poplar Studio

Fundraising

David also admits that fundraising hasn't always been easy. *"As a founder you have to get used to a lot of rejections"*, he says. *"It felt like we had at least 100 rejections in the process of raising the £2.75m we have attracted to date."*

David's first piece of advice for founders is to focus on making the right connections. "Building a strong network is key," he says. "Whether that's through other founders, organisations like Immerse UK, or just helpful and well-connected individuals in the industry." David himself is also an active connector, leading the UK chapter of the VRAR Association and mentoring on the Digital Catapult Augmentor programme for immersive start-ups.

He also suggests learning to pinpoint the right investors for your business. *"The UK is very rich in investors"*, he says, *"but it's important not to waste time on the wrong ones."* Poplar was able to find a strong mix of backers, each with particular interests and expertise. For example, Haatch is strong in retail and B2B, Ascension Ventures has expertise in media and tech, Fuel Ventures focuses mostly on marketplaces, while Super Ventures has AR knowledge and brought a US connection.

New Normal

For Poplar, the pandemic has brought huge opportunity among the obvious challenges. *"The pandemic has been tough for many,"* says David, *"but a positive side-effect for us has been a big shift in advertising budgets from traditional media to digital."* His outlook is also positive on the current fundraising environment. He believes it may be easier for AR companies to raise in 2021 as AR now solves more problems beyond well-known use cases, such as face filters.





Ultraleap

Last Round Raised: Series C Total Financing: £63m









Bristol



IP Group, Mayfair Equity Partners, Cornes Technologies, Dolby Family Ventures, Hostplus

Ultraleap develops technologies that enable users to interact with computers in a more natural way. It uses two technologies: handtracking, which takes a 3D hand and joint position model so that interaction can be hands-free; and mid-air haptics, which use sound waves projected through the air directly onto hands to vibrate the skin's surface so that users can feel feedback from what they are doing. Together, they remove the barriers between users and content.

Ultraleap has a team of more than 150 people worldwide, with locations in Silicon Valley in the US and HQ in Bristol in the UK. Its team includes world-leading experts in interface design, acoustics, machine learning and computer vision.

Customer Success

Ultraleap has a major deal with Qualcomm, says Tom Cater, the company's CTO and co-founder, that sees its hand-tracking technology integrated into Qualcomm's XR2 platform, which will power the next generation of XR headsets. The deal means that users no longer have to buy an Ultraleap camera as the software will be already embedded into the XR2 platform, which makes it much easier to integrate and use with other supporting cameras.

Ultraleap's other significant development in the last year is TouchFree - an application which makes touch screens contactless. Users plug in an Ultraleap camera module and existing screens can be retrofitted to become contactless without requiring any changes to the interface. This has become a major advantage in the current climate as it can prevent the spread of pathogens.

This particular use case was already in the company's pipeline, but trials in temporary deployments, as well as in larger full-scale deployments since the pandemic has accelerated its development. Tom offers an example of current trials in airports where immigration screens that use touch will be converted to TouchFree.

Growing Market

The market is growing as content developers increasingly design for hands as opposed to controllers, says Tom. While previously, users bought this technology as an add-on, it is fast becoming factory-standard on headsets. Chris Olds, Ultraleap's chief financial officer, added, "Qualcomm have directly highlighted how hand tracking is becoming a table stakes feature in next-gen XR devices."

Why UK?

Before raising its first round of investment, the company considered a move to California, but the founders opted for Bristol in the UK. Access to talent was a big factor, especially in deep tech and aerospace through the silicon industry around Bristol. The presence of large tech companies, such as HP and Oracle close by, has also helped. And, along with a growing creative industry, Bristol's relative proximity to London is an additional factor. Ultraleap is keen to support the South West - it is part of a £46m programme, alongside Netflix and Google, that aims to develop an immersive hub in the region.

Ultraleap

Fundraising

Ultraleap has so far raised three rounds of investment: Series A was about £10m, Series B just under £18m and Series C £35m. Tom says that attracting patient capital at an early stage has really helped the company build a supportive board and shareholder base.

Tom initially developed the IP at the University of Bristol during his PhD, bringing it to a point where he was ready to turn it into a company. The company spun out of the university two years later once it had attracted enough attention from customers, investors and the media. Tom believes that there should be more focus on entrepreneurship as a pathway through university. Ultraleap was one of Bristol's first university spin-outs and so it was a slow and bumpy process, although much has since improved. During the initial spin-out stage, SetSquared provided support by offering a commercial setting and the right start-up environment to get a head start.

Ultraleap has also successfully accessed public innovation funding, including a £1.2m EU Horizon 2020 grant, which accelerated technological development between seed and Series A rounds. It has also used grants to collaborate with universities, PhD students and Knowledge Transfer Partnerships.

New Normal

Chris and Tom's perspectives on the outlook for a company fundraising this year are yin and yang. Tom is optimistic about increased investment in late 2021 as businesses move back from Zoom to face-to-face meetings. Chris is more circumspect about how the government might recoup pandemic spending and the implications this might have for Capital Gains Tax and incentive schemes, such as Company Share Option Plans, Enterprise Management Incentives and the Enterprise Investment Scheme. While he doesn't see this having a direct impact on Ultraleap, it may do for earlier stage companies. His take-home message? Those looking to raise capital and find an investor aligned with their business objectives should do so now.





VividQ

Last Round Raised: Seed Total Financing: £6.5m



Holographic displays, AR



Consumer electronics, Automotive







Sure Valley Ventures, OSRAM FluxUnit Ventures, University of Tokyo Edge Capital, Essex Innovation

Growing Market

There are four main types of technology that OEMs look at for AR displays: micro-LED displays, which result in simple AR overlays; laser-beam scanning, which is used for example in the Microsoft HoloLens; light-field displays, and computer-generated holography.

Aleksandra says, "The major advantage of CGH is that it projects fully 3D digital images rather than relying on stereoscopic projections, like most other AR technologies. This helps eliminate certain issues, such as users feeling nauseated when they use the devices for too long. CGH also produces extremely bright images at low power, which heavily reduces the battery requirements and prevents overheating. This is important to manufacturers, and necessary to meet consumer expectations for AR."

In 2020, VividQ completed a range of proof of concept projects in the consumer electronics space, including the development of the holographic headset prototype supported by Innovate UK SMART Grant. Alongside with major advances in image quality and speed, VividQ has shown that Computer-Generated Holography can meet the requirements of consumer grade products, and is therefore ready for commercialisation.

VividQ is expecting to see the first product using their software for CGH in 2023, with an automotive Head-Up Display as its first commercial application. This will allow users to see contextual GPS navigation through their windshield while driving their car. Simultaneously, the company is licensing its Software Development Kit and IP for next generation AR hardware, to overcome the remaining technological hurdles for this consumer application.

VividQ is a deep tech company powering a digital display revolution with an entirely new display technology, known as Computer-Generated Holography, that has applications across a wide range of products. The company is developing software and IP for holographic displays that project digital data in 3D by mimicking the light patterns humans perceive when they look at physical objects. VividQ's technology has a variety of commercial use cases in augmented reality (AR) headsets, smart glasses, automotive head-up displays, large-scale displays and consumer electronics.

Customer Success

VividQ has a strong partner ecosystem, including companies involved in manufacturing processors, such as NVIDIA. It also collaborates with some of the biggest optical systems manufacturers working on next-generation immersive displays, such as Taiwan-based company, Himax, and Londonbased company, TruLife Optics.

It typically works with ODMs (original design manufacturers) within the automotive and consumer electronics sectors, which then sell their solutions to OEMs (original equipment manufacturers). OEMs use these display and optical designs to build end-products sold directly to customers.

"For our automotive projects, one of our biggest clients is a Shenzhenbased ODM, which already sells the first generation of its Head-Up Displays to the most innovative auto companies in the Chinese market," says VividQ COO, Aleksandra Pedraszewska.

"Our joint development efforts with ODMs, who license our software and IP for their system designs, have resulted in truly ground-breaking digital display solutions, especially in Augmented Reality. However, we also work directly with the R&D teams of some of the biggest consumer electronics companies that are planning to release AR products developed in-house."

VividQ

Why UK?

VividQ originated from a project that started at the University of Cambridge, from where most of the founders graduated. Indeed, the founders are still heavily involved in the Cambridge ecosystem, which they find extremely valuable and, while the team plans to expand abroad, it will keep the technical team based in Cambridge where it has access to a world-leading photonics department. Access to talent and a supportive community there has been invaluable, according to Aleksandra. In April 2021, VividQ was named *"The One To Watch"* in Science and Technology Awards by Cambridge Independent.

Fundraising

"CGH is a very visual technology," says Aleksandra. "So we relied on a simple demo of our holographic system early on, when we started fundraising with angel investors." VividQ found excellent and supportive angels from the London finance ecosystem, who understood the company's long term strategy to power all digital displays in the world with its software for Computer-Generated Holography, she says.

"We have a different development path than, for example, a SaaS company" says Aleksandra. "That's because our products are highly technical and we rely on our intellectual property a lot. Therefore, our licensing deals are strongly linked to the royalties that we charge on devices that end up in consumer's hands, be it an AR wearable, or any other holographic application in the display industry."

Sure Valley Ventures, a UK/Ireland-based fund, led the company's seed round. The fund has a mature focus on AR/VR investments, offering valuable contributions to VividQ's business strategy.

"We were looking to differentiate our fundraising geographically because we generate most of our revenue outside of Europe at the moment – our commercial activities are based predominantly in the US & Asia Pacific," says Aleksandra. "This translated into early interest from international funds like University of Tokyo Edge Capital, whose team has been pivotal for our business development in Japan – a great market for holographic display. It was also very valuable strategically to get OSRAM FluxUnit Ventures on board, with its strong connections within the semiconductor and automotive sectors." VividQ has also received an Innovate UK SMART grant, which is being used to fund R&D into solutions for holographic headsets. Overall, its fundraising to date has helped the company to grow the team and expand in-house R&D capabilities.

Aleksandra's tip for founders currently raising is to understand whether they need funding to grow (and exit) rapidly from the start, or whether they need more patient capital for a longer development and value creation process so they can target the right type of investor.

New Normal

Before the pandemic, VividQ won most of its projects as a result of inperson product demonstrations around the US & Asia. That clearly had to change last year.

"In 2020, we had to shift our sales strategy entirely," says Aleksandra. "We had to rely more on materials that we could present online, which is not easy for a company with such a visual technology like Computer-Generated Holography."

However, some companies became more willing to start pilots without inperson meetings, which accelerated some processes. For example, VividQ formed a partnership with a major OEM based in Singapore in the middle of the pandemic, despite the fact that it had never seen the company's system. The OEM relied on the team's technical expertise and the online pitch. Pre-pandemic, we would need to make several trips to Singapore to start a project of this nature, says Aleksandra.

VividQ is looking at investors from a wide range of geographies for its current round. "It is as difficult as it has always been for European companies to raise Seed+/Series A rounds from US VCs if they are still based in Europe," says Aleksandra. "The pandemic has not changed it much, especially for deep technology companies. We are still expecting a big US expansion, but it is more likely to happen after our Series A in around 18 months."



Immerse UK '21 to Watch'

For this report, the authors have researched innovative UK-based early-stage ventures that have substantial business in immersive technologies.

Many have received substantial private-sector investment including project finance, pre-seed, seed or Series A funding. In many cases, the companies have also received significant public-sector support from, for example, Innovate UK, KTN, Digital Catapult, and from other agencies across the nations and regions.

Our information sources have included the companies themselves, Immerse UK, HTC VIVE X, ICAEW Corporate Finance Faculty, and Beauhurst.

Here are Immerse UK's '21 to Watch'.







Edify https://www.edify.ac

Edify uses virtual reality and video conferencing to enable engaging educational experiences. The platform helps learners learn by doing; to observe, collaborate and practice in their own time.





Evidential Reality http://evidential-reality.com

Evidential Reality provides expert witness services and has developed EVITA, a major-incident VR training platform for police officers, and First Responder, which uses AR to improve preservation of crime scenes.



Manchester and Berlin





£1,030,000



18



£45,000



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Digital Catapult; Creative England; Business Growth Hub

Factory 42 https://www.factory42.uk

Factory 42 is an immersive content studio operating at the intersection of games and film and reimagining the future of entertainment, as story- and audience-led technical pioneers.

FACTORY42



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28







£1,000,000 **Business angels** DCMS – for the 'Green Planet' project



Generic Robotics https://genericrobotics.com

Generic Robotics is developing SimuTouch, a universal haptic manual skills training platform, and Toia, a software middle-ware and haptic authoring tool for designers, streamlining routes to market for hardware manufacturers.



Leading the HAPPIE consortium (with Numerion Software, Open University, Sliced Bean Animation, the Science Museum and University of West London); leading the HAPTEX consortium (with King's College London); leading the NeuRestore consortium (with University of Essex and Castalia Innovation)



https://www.givevision.net

GiveVision has developed a clinically validated telemedicine platform that enables 98% of patients with severe sight loss to see clearly again, while monitoring disease progression in real-time.









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£400.000

Wayra UK; NHS; Norma; Finance Birmingham; Ascension Ventures

Birmingham City Council; Nominet Trust; UnLtd, Social Tech Trust; £493,000

European Space Agency; EIT Health; UCL Innovation & Enterprise; East London Inclusive Enterprise Zone





Igloo Vision creates software that takes any digital content, from any source, in any format, and puts it into a shared immersive space that anyone can use.





£12,900



Craven Arms, Shrooshire

Colin Yellowley, Dennis Wright





£5,620,000

Frontier Development Capital, Midven; Ingenious Ventures; Finance Birmingham

2009

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N/A

28



KIT-AR KIT-AR https://www.kit-ar.com KIT-AR is an industrial solution to enhance the operator on the manufacturing shopfloor. Intervention Intervention Intervention 2018 Manuel Divers, Simon Julier, Feix Mannhardt, Intervention









Funding London; Albion Capital/UCL Technology Fund; Sintef Venture; Best Horizon; Nordic XR Startups; Sony Europe

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Total Innovate fundir

EU Horizon 2020



Masters of Pie http://www.mastersofpie.com

Masters of Pie has created Radical - an AR/VR collaboration software development kit that integrates with native enterprise software applications, enabling seamless and secure real-time collaboration with complex 2D/3D data.





£5,580,000 Downing Ventures; Foresight Group; Robert Bosch Venture Capital



N/A



N/A

20-plus



2017

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Development Bank

of Wales; Angels Invest Wales;

Crowdcube

Rescape sells its registered medical device DR.VR into hospitals, care homes and hospices, reducing pain and anxiety for patients. DR.VR is also used in training and anxiety reduction for NHS staff.

Rescape[®]







10



£961,000

N/A

SMARTCymru Accelerated Growth programme; Clwstwr; SETSquared

29





REWIND is a real-time spatial experience company focused on bringing the physical and digital worlds closer together using real-time technologies and creativity to deliver spatial experiences "that people love".







Best Invention of 2020. Its mission is to elevate employee performance through immersive digital training, including cross-platform soft-skills and data analytics.







Bristol and San Mateo (US) 2018 Dr Alexander Young

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Cedars-Sinai Ventures



<u>__</u>>

£1,500,000

N/A

NHS Innovation programme; Tech Nation Upscale



Grosvenor Hill Ventures £663,000

N/A

£10,500,000





Ventures

31

Invesior Survey Data

TITIT

Investor Survey Data

ImmerseUK and Vive X surveyed 50 UK-based investors to understand who was investing in immersive technology startups, which areas excited them the most and how they felt the outlook for the next 12 months investment looked like. There was a positive lift in investor sentiment, with nearly two thirds expecting an increase in overall investment for AR/VR. For over a third, the pandemic had positively contributed towards this shift in sentiment. Lastly we noted a slight bias of our surveyed investors towards Enterprise focused startups and the tool/infrastructure side of immersive technology. The key figures are presented below.

How do you think overall investment in VR/AR will change over the next 12 months?



How has the pandemic affected your appetite for investing in VR/AR?



Which sectors have investors found most interesting?

100%



Thanks & Acknowledgements



Thanks & Acknowledgements

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HTC VIVE

HTC's heritage has seen its innovation help to change the world. Its developments in the smartphone market included building the world's first Android device - HTC Dream.

HTC has never stopped challenging itself, and created VIVE with the mission to unleash human imagination from the limitations of reality. VIVE was an early pioneer in the VR market and continues to innovate in many areas including 5G and blockchain.

The company recently set new benchmarks with the launch of its 5K 120Hz devices. The all-in-one VIVE Focus 3 delivers best-in-class graphics, ergonomic comfort and advanced business applications that will transform the way you work. The VIVE PRO 2 providesnextlevel graphics and sound for riveting PC-VR and the most comfortable, high quality immersion for when every pixel and polygon counts. HTC launched VIVE X in 2016 to accelerate the XR ecosystem by supporting the best startups globally. We do that by providing founders with investment, strategic support and networked expertise. We believe that technologies such as VR, AR, Al and 5G are transforming the way we work, learn, live and play and will revolutionise entire industries.

Since 2016, VIVE X has become the most active early-stage investor in XR with a portfolio of over 100 companies. Investment activity is supported globally across VIVE X locations including London, San Francisco, Beijing, Taipei and Tel Aviv.

HTC also created the VRVCA (Virtual Reality Venture Capital Alliance) to increase education and curated deal flow for other investors in China and internationally. The next VIVE X and VRVCA event will take place in July and startups can apply <u>here</u>.



Immerse UK

Immerse UK is the UK's leading membership organisation for immersive technologies.

We bring together industry, research and academic organisations, public sector and innovators to help fast track innovation, R&D, scalability and company growth.

Our aim is to support UK businesses in the immersive tech sector to be the most successful and innovative they can be. We are the UK's only membership organisation dedicated to supporting content, applications, services and solution providers developing immersive technology solutions or companies creating content or experiences using immersive tech. We do this by connecting people to explore future collaborations; pointing to the latest funding and finance opportunities from across all industries in the UK economy; addressing the pressing issues that slow down R&D and barriers to innovation; and identifying the opportunities for growth in this exciting, emerging marketplace, both in the UK and internationally.

Working closely with all levels of government we ensure the needs of the immersive tech sector are represented in the policy making process to ensure your voice and opinions are heard.

Powered by <u>KTN</u>, Immerse UK was established in 2016, with initial funding support from Innovate UK. With a growing community of nearly 4,000 members, we are now moving to the next level and becoming a not-for-profit, self-sustaining network, owned by industry for industry.

