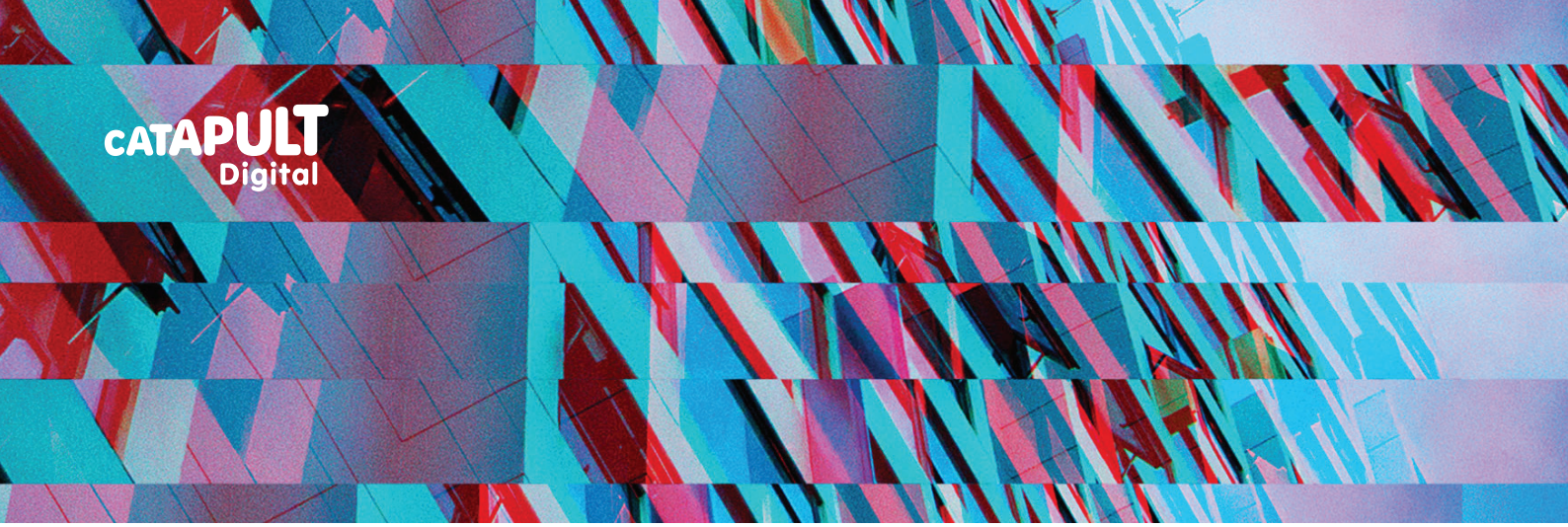
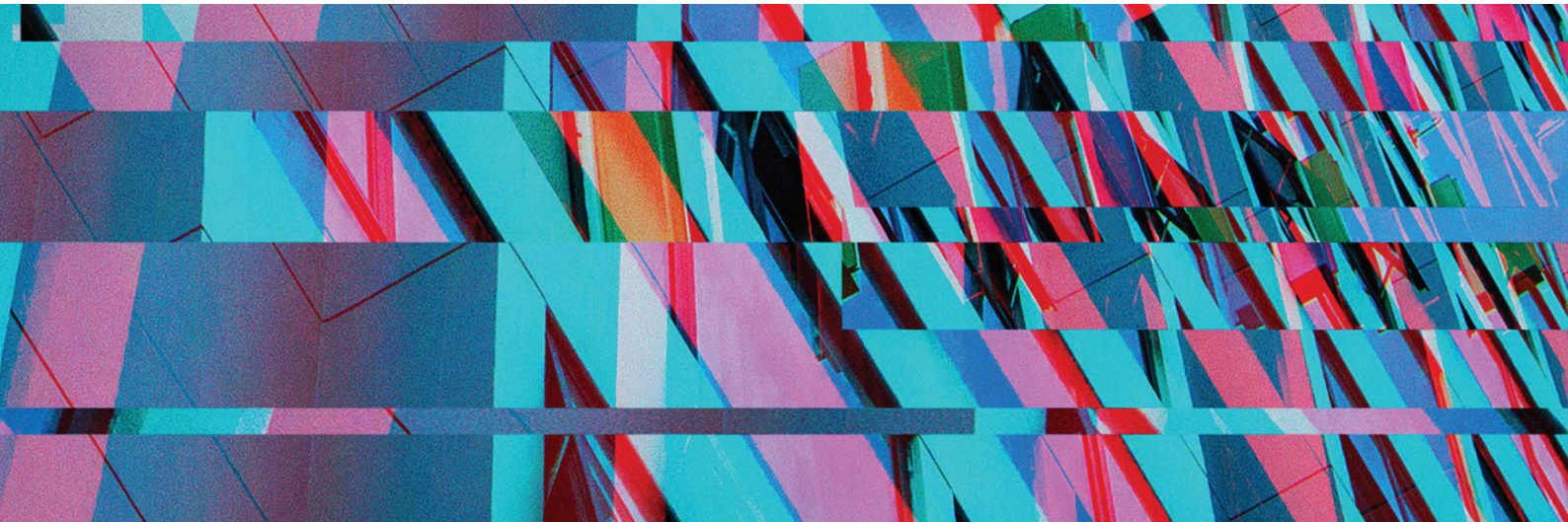



Helping to grow the UK economy
by accelerating the early adoption
of advanced digital technologies




# Introducing Digital Catapult

## The UK's leading advanced digital technology innovation centre

Digital Catapult promotes the early adoption of advanced digital technology in a number of ways:

- Providing facilities for experimentation and testing that remove barriers for small businesses and provide collaborative spaces to bring corporations, academics, investors and startups together to address business and technology challenges
- Delivering innovation programmes that accelerate product development and the development of commercial partnerships and private investment
- Connecting academic researchers to businesses to get the latest thinking into the heart of industry and discover new ways to solve big challenges in the manufacturing and creative industries
- Delivering collaborative research and development that leads to commercial exploitation and reduced risk for companies
- Sharing independent and technology agnostic expertise

# Industries and technologies

## Unlocking the full potential of new technologies and turning disruption into advantage

Advanced digital technologies have huge potential to accelerate growth and increase productivity if they are applied to real-world challenges at scale. Digital Catapult is working within two industry sectors where we believe we can have the most impact by increasing the use of digital technology.

In both sectors, we aim to increase the amount of applied research, development and innovation. We are de-risking innovation by helping organisations to navigate new and emerging technologies and the disruptive business models they create.

### Manufacturing

The early adoption of advanced digital technologies by the UK manufacturing sector has the potential to grow the UK economy by £455bn. Digital Catapult's aim is to help manufacturers seize this opportunity and extract new value from data throughout the manufacturing life cycle.

### Creative industries

The creative industries: film, TV, music, fashion, design, arts, architecture, publishing, advertising, video games and crafts, are at the core of the UK's cultural identity. Their contribution to the UK economy is just as significant, accounting for £92bn gross value added. Digital Catapult's aim is to help the industries maintain their resilience and capitalise on the opportunities that technologies such as immersive, 5G and distributed ledger technologies present.



## Focusing on technologies that give UK businesses global competitive advantage

Digital Catapult specialises in three technology areas that present a clear global opportunity for UK businesses where we can amplify strengths to add value and fast forward the process of digital transformation.

### Artificial intelligence (AI and machine learning)

AI and machine learning technologies are transforming the global economy. These technologies enable the use of huge datasets to find better ways of completing complex tasks. We are expanding Machine Intelligence Garage, our AI programme, to accelerate responsible and sustainable adoption by of AI and to grow the UK's machine learning ecosystem of deep tech companies.

### Future networks (5G, IoT and LPWAN)

As the quantity and significance of digital data increases at an exponential rate, UK industry needs more efficient and effective networks to be able to acquire, transport and deliver it. Digital Catapult, through initiatives such as Things Connected and the Future Networks Lab, is driving the development and adoption of 5G, IoT and LPWAN applications and services, and the new business models they create.

### Immersive (mixed, augmented and virtual reality and haptics)

Advances in virtual and augmented reality technology combined with significant global investment in hardware, has increased the opportunity for immersive. The UK has a unique talent in content production due to its strength in games, film, TV, visual effects and theatre. Digital Catapult is making the UK the best place to produce immersive content and applications through projects such as CreativeXR, Augmentor, our Immersive Labs, and our role in the Audience of the Future demonstrator programme.

# Artificial intelligence

Accelerating industry adoption of artificial intelligence, growing the UK's deep tech ecosystem and pioneering new approaches to responsible AI



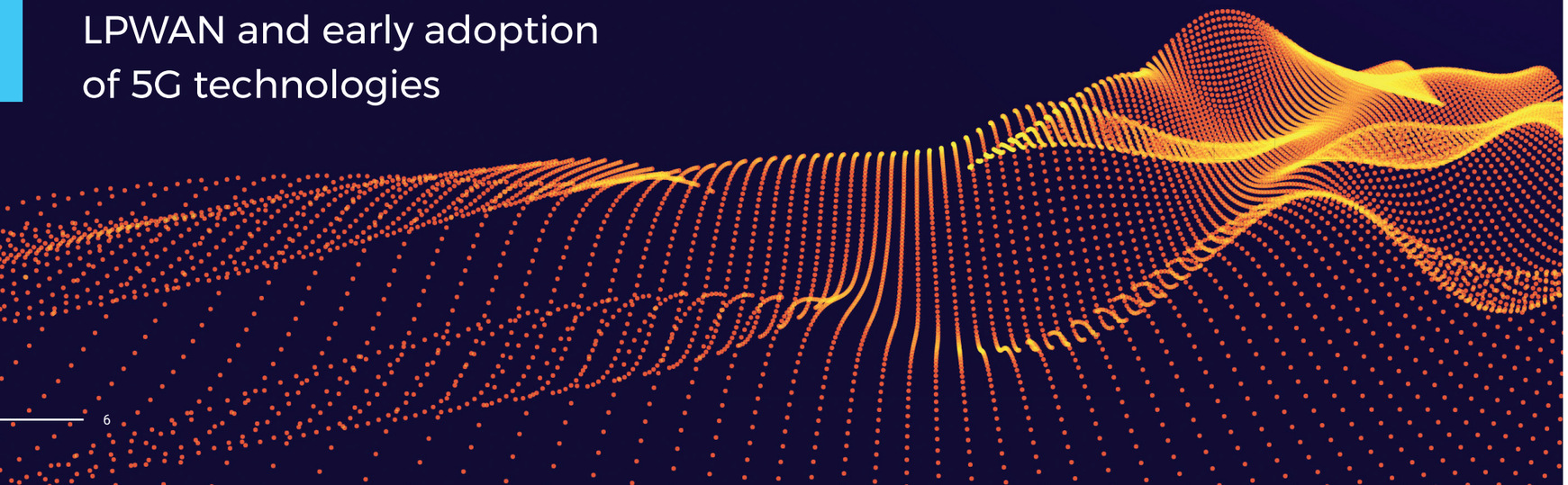
## Driving AI adoption in manufacturing and the creative industries

Artificial intelligence (AI) and machine learning technologies are transforming the global economy. These technologies can use huge datasets to find better ways of completing complex tasks and range from simple process automation to deep machine learning. The ability to automate, predict and deliver is at the very heart of digital innovation. However, the cost of computation power is a significant barrier for small innovative companies to prosper in this market. Digital Catapult is enabling the adoption of AI through our programme, Machine Intelligence Garage, which is opening up the power of AI technologies in four ways:

- Providing much needed access to compute power for small innovative businesses to train their algorithms on large datasets
- Providing access to expertise and experimentation space for companies of all sizes to learn about different computation resources and supporting technologies
- Collaborating with traditional businesses to speed up the adoption of AI through open innovation and acceleration programmes
- Working with policymakers and academics to ensure the UK takes the lead in developing responsible AI applications

# Future networks

Accelerating the use of LPWAN and early adoption of 5G technologies





## Transforming lives with 5G, LPWAN and IoT

As the quantity and significance of digital data increases at an exponential rate, UK industry needs effective and efficient networks to be able to transport and deliver it.

Future networks will provide more advanced, highly configurable connectivity that will be faster, cheaper, more reliable, secure and flexible, whilst using less energy. They will be the foundation for new business models, applications, experiences, products and services.

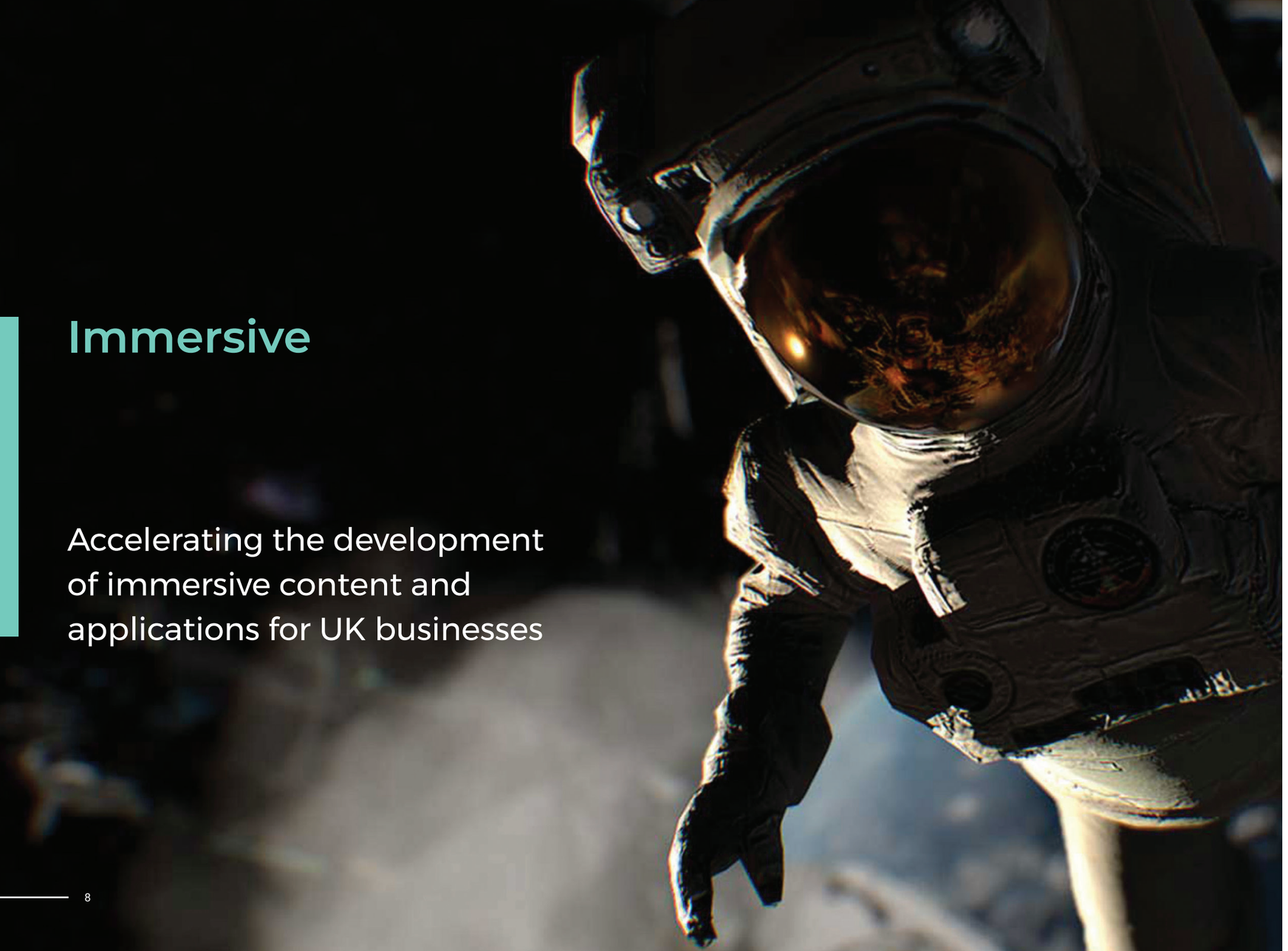
The impact of 5G, a key future network technology, is not confined to the telecommunications industry. Its successful roll out is expected to grow the wider UK economy. If its potential can be realised, 5G could add £173bn of incremental GDP between 2020 to 2030.

Digital Catapult is enabling the early adoption of 5G to ensure the UK's international competitiveness and accelerating the use of LPWAN to help UK IoT companies compete in the global market.

- Creating and operating networks and giving access to hardware and services, including large-scale 5G sector-specific testbeds and our extensive LPWAN network (part of the 'Things Connected' programme) supporting the development, testing and commercialisation of ideas
- Challenge-led innovation programmes that bring together researchers and small innovative companies with larger corporations with real world industry challenges.
- The Future Networks Lab, a technology agnostic place to bring together network, service, platform and solution providers as well as adopters to collaborate on tackling the changes of the use of future networks technologies

# Immersive

Accelerating the development of immersive content and applications for UK businesses



## Making the UK the best place in the world to create immersive content and applications

Advances in virtual and augmented reality technology combined with significant global investment in hardware, has increased the opportunity for immersive. The UK has a unique talent in content production due to its strength in games, film, TV, visual effects and theatre. Digital Catapult is making the UK the best place to produce immersive content and applications through projects such as CreativeXR, Augmentor, our Immersive Labs, and our role in the Audience of the Future demonstrator programme.

The challenge now is to build upon the UK's wealth of knowledge and skills, to bring together this growing ecosystem. This will drive forward the game-changing innovations that will make the UK the best place in the world to create immersive content and applications.

Digital Catapult invests in facilities such as the Imaginarium Studios and Dimension, has a network of Immersive Labs and runs innovation programmes including Augmentor and CreativeXR. We are also proud to be part of The Audience of the Future demonstrator programme. These provide unrivalled access to the latest developments in virtual and augmented reality and support the development of a strong immersive ecosystem in the UK.

# Future focus

Exploring new areas of advanced digital technology such as distributed ledgers

## Digital Catapult actively explores technologies with great potential for UK industry

In addition to our focus areas of immersive, AI and future networks, we are always examining other technologies with potential for future focus.

### Distributed ledger technology

Distributed ledger technology (DLT), including blockchain, promises to improve trust relationships between multiple stakeholders. Our aim is to understand where the greatest opportunities for this technology lie and identify the key steps that are needed to help the sector achieve its full potential. We believe the UK can become a global leader of DLT and we are unlocking that potential through programmes such as DLT Field Labs - a collaborative process that helps companies cut through the hype and uncover the commercial potential of these technologies.


# Our facilities and programmes

Providing UK businesses with access to the facilities and programmes they need to innovate and grow



## Digital Catapult creates world-leading programmes and facilities to help companies develop new products and services and get their products to market faster

We research new markets, talk to new companies and identify common challenges, then we create facilities to address these challenges. These include:

- Augmentor
- CreativeXR
- Dimension
- DLT Field Labs
- Future Networks Lab
- Immersive Labs
- Machine Intelligence Garage
- Things Connected LPWAN networks
- 5G Brighton Testbed and 5G London Testbed

We offer specific services including: immersive 101 workshops that introduce customers to VR and AR technologies, machine intelligence sprints to support the development and deployment of new AI algorithms to solve customer challenges and asset management solutions that make use of LPWAN networks.

These facilities and programmes help to remove barriers to market for smaller companies and become hubs of collaboration that bring academics, corporates, investors and small businesses together.

# 5G Facilities

## Creating a technical and innovation environment where startups and scaleups can engage with 5G

Digital Catapult's 5G facilities in London and Brighton underpin our 5G innovation programmes that are creating an ecosystem of small businesses, industry and local government to engage with 5G and its advanced capabilities, allowing them to develop and deliver new solutions in a controlled environment.

Digital Catapult has built, owns and operates two 5G testbeds. The 5G Brighton Testbed was the first in the UK not to be university-based, helping to take the technology out of a purely academic setting and into industry. The second testbed in the Future Networks Lab in London provides access to truly state-of-the-art computation and connectivity 5G facilities.

Our fully functional cellular technology facilities will bring solutions with good commercial prospects from R&D and testing into early real-world deployment, taking advantage of faster and more flexible mobile network services. Our goal is to make sure that UK startups and scaleups take advantage, and contribute to an accelerated rollout of 5G, giving UK businesses a competitive advantage.



# The Immersive Labs

## A network of cutting edge innovation hubs, the ideal spaces for learning, testing and showcasing immersive solutions

Located across the UK, the Immersive Labs are an expanding network of facilities that are supporting the UK's growing immersive community.

Each space is equipped with a range of the latest augmented and virtual reality hardware and examples of locally produced content, and is available for hire by businesses of all sizes, academia and researchers.

The Immersive Labs are designed to foster the growth of immersive companies, by supporting them to develop commercially viable content and applications and to educate organisations about the huge potential of immersive.

The labs are available for businesses who are working with immersive technologies to book for demonstrations, specialist development, and showcases. We provide introductory sessions to help organisations explore the huge potential of immersive technology and content.

We have a wide range of specialist kit, which can be used at different stages of the production of immersive content including a mixed reality green screen, haptic gloves, motion capture suit and pupil tracking.

# Machine Intelligence Garage

## Machines for machine intelligence - providing the tools and expertise to turn potential into reality

As part of the Machine Intelligence Garage programme, we offer the computation power and expertise needed to develop and build responsible and sustainable machine learning and artificial intelligence solutions.

Computation power is a huge constraint for AI startups. The costs are increasingly prohibitive as the models being developed become larger and more complex, the amount of data being processed grows exponentially.

Machine Intelligence Garage is designed to help startups with a well-defined business idea and technical capability for whom access to computation power is a barrier to growth. It hosts workshops and experimentation-days to help companies of all sizes get to grips with systems for machine intelligence.

Participating companies get access to computation power and relevant expertise, as well as a range of support activities. One important component of this support is access to expertise on how to define and apply ethical standards in practice. This is because at present there is gap between the theory and practice, between the ‘what’ of responsible AI and the ‘how’.



# Things Connected

## An open LPWAN network for UK businesses to experiment and prototype new IoT solutions

Part of our Things Connected programme, an initiative that supports UK businesses who are using LPWAN technologies, Digital Catapult has built an open network for experimenting with, and prototyping of, new IoT products and services.

The rapidly expanding network which includes a partnership with TTN, is Britain's largest free-to-use LoRaWan network. It currently has 450 LPWAN base stations that provide extensive coverage across the UK. It provides a unique opportunity for businesses to experiment and test IoT solutions.

Things Connected was established in 2016 by Digital Catapult at a time when the UK lacked significant national LPWAN coverage. Its aim has been to stimulate UK innovation and accelerate the adoption of low power networking technologies by IoT innovators.

The network has enabled over 700 innovators to experiment with IoT technologies, leading to new products and services being brought to market in the UK and abroad.

# Future Networks Lab

## A unique facility that's fast forwarding adoption of future network technologies to deliver value to industry

Digital Catapult's Future Networks Lab has been created to support the development and use of IoT, 5G and LPWAN.

We want UK businesses to exploit the potential of these technologies at scale. Early adopters will gain competitive advantage and be better positioned to capitalise on digital disruption and the new business models it creates.

The Future Networks Lab is a technology agnostic hub for startups, corporations and network platform providers to find the right partners, experiment, collaborate, demonstrate and unlock the full potential of these technologies for industry.



# CreativeXR

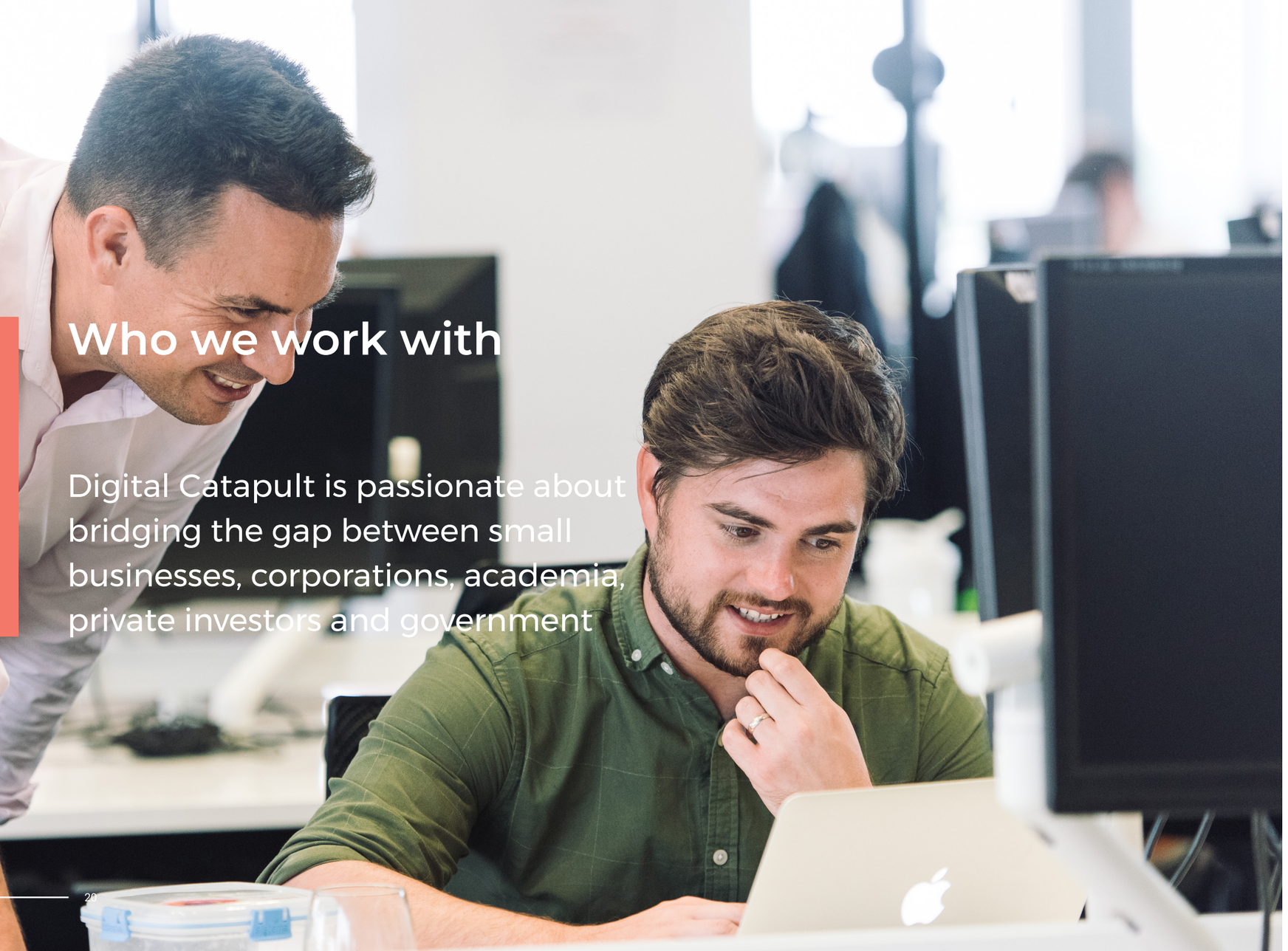
## Unlocking the creative potential of immersive content

CreativeXR is a programme that gives creative talent the opportunity to experiment with immersive technologies to create new experiences that inspire audiences.

Focused on the creative industries, particularly the arts and culture sector; the programme gives the best creative teams the opportunity to develop concepts and prototypes of immersive content (virtual, augmented and mixed reality). CreativeXR offers access to early stage finance, facilities, industry leaders and commissioning bodies, and the opportunity to pitch for further development funding. The programme has been developed by Digital Catapult and Arts Council England, with support from Innovate UK.

Designed for small businesses, creative innovators, and arts and culture organisations capable of producing immersive content, CreativeXR offers:

- Prototype funding
- Access to a network of industry experts, high calibre peers and commissioning bodies
- Free use of the Immersive Labs in Belfast, Brighton, London and North East Tees Valley
- Focused workshops to help develop your concept and pitch
- Opportunity to pitch at final commissioner showcase
- Chance to secure funding for further development



# Who we work with

Digital Catapult is passionate about bridging the gap between small businesses, corporations, academia, private investors and government

Digital Catapult drives the adoption of advanced digital technologies. We do this by providing facilities and running innovation programmes. Depending on who you are and what you do, there is a range of ways you can engage with us

### Businesses of all sizes

We accelerate the sustainable growth of small innovative businesses and help larger organisations access our digital expertise and noteworthy innovators across ecosystems.

### Investors

Digital Catapult introduces the investment community to talented technologists and early-stage businesses that are developing advanced digital technology solutions with commercial potential and private up-to-the-minute insight into emerging sectors.

### Research and academia

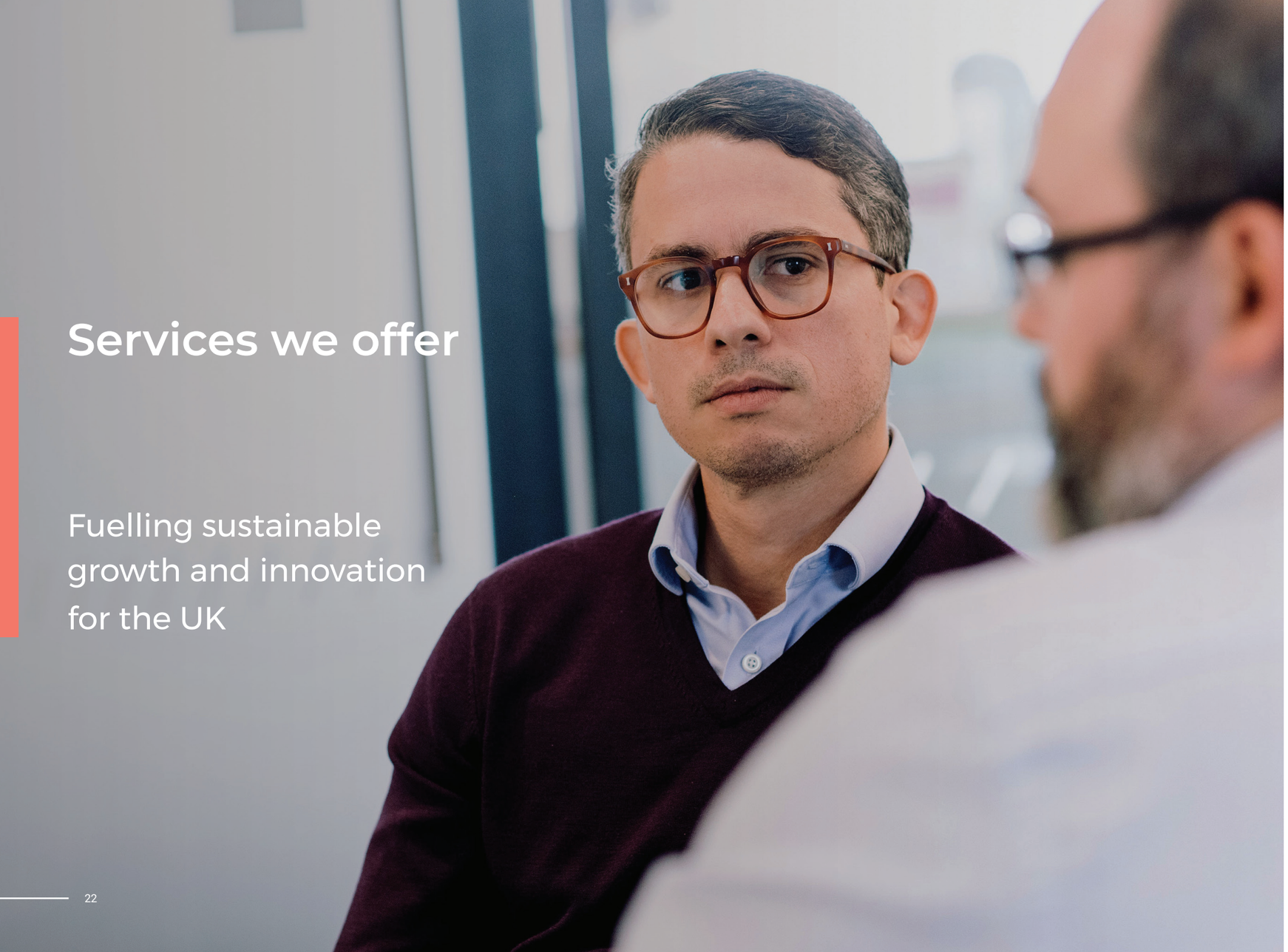
We work with academics to increase the impact of research by getting the latest findings into the heart of industry. We provide the industrial context that focuses research, speeds up commercialisation and breaks down barriers to innovation.

### Government

Digital technologies can accelerate growth and increase productivity across the UK economy. We provide technology agnostic expertise, providing advice that informs UK Government policy. Digital Catapult leverages public funding to yield increased private investment and has a proven track record of delivering impact as a result of funding.

# Services we offer

Fuelling sustainable growth and innovation for the UK





We offer proven services that help organisations to innovate and grow

### Collaborative research and development

Making use of our expertise and facilities, we partner with academics and companies to undertake collaborative research and development (R&D) in our focus industry sectors, manufacturing and creative, or our core technologies, future networks, artificial intelligence and immersive.

### Market driven innovation services

Our services include a range of methodologies, workshops and events for: innovation strategy visioning and definition, technology future scoping, technology scouting, ecosystem building, rapid prototyping and testing. We work with large companies to support their innovation journeys and with small companies to fast track their way to market, bridging the knowledge and culture gap to accelerate joint growth. Digital Catapult innovation services offer our clients proven yet customised tools to identify and tackle their particular innovation challenge or opportunity.

### Innovation sprints

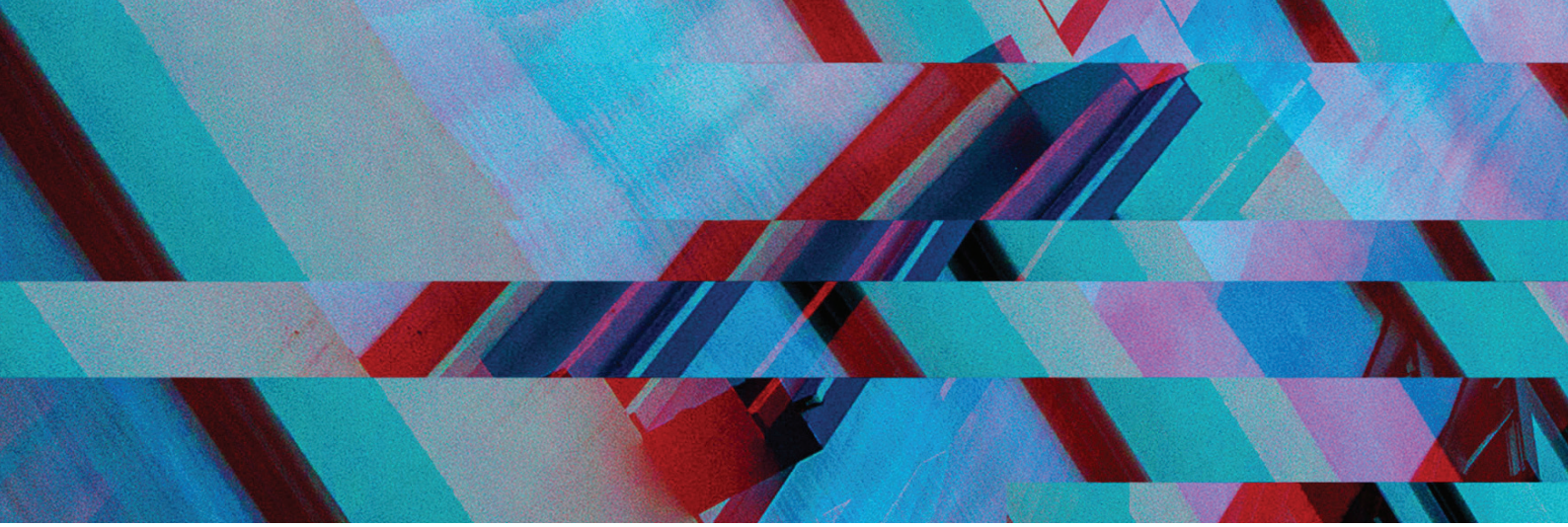
The Catapult has a strong track record in helping large, established companies to deliver significant digital transformation by running innovation sprints with our technologists and hand-picked external innovators. The sprints take ideas through to either ‘proof of concept’ or ‘minimum viable product’ stages over a period of weeks - rapidly building, testing and adapting solutions towards the desired model.

# Working across the UK

Digital Catapult's extensive network helps organisations large and small across the UK to deliver digital services to domestic and export markets. From running pilot projects to delivering large scale initiatives, our innovative and practical approach addresses industry challenges and encourages adoption at the leading edge.

We have centres in Brighton, North East Tees Valley and Northern Ireland in addition to our London headquarters. Each centre has a unique focus aligned with local digital innovation initiatives.

- Digital Catapult Centres
- University Partnerships
- 5G & Internet Test Beds
- LPWAN
- IoT
- Immersive Labs
- Future Technology Labs



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