

Research

Creative Technology Hubs in Germany

Mapping Creative Technology Hubs and Considering their Potential for Inclusive Practice with Migrants in Germany

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Executive summary

Introduction

BOP Consulting was commissioned in April 2024 to undertake research with the dual aim of mapping creative technology hubs in Germany and gaining insight into their potential for (and interest in) engaging in inclusive practice with migrants who have arrived in Germany in the past 10 years. The research included scoping interviews with sector bodies, detailed desk research, and interviews with selected creative tech hubs and migrant organisations.

Mapping creative tech hubs

In the context of this report, 'creative technology' focuses specifically on **advanced screenbased technologies** used in creating digital environments or virtual worlds within the existing film, TV, games and live entertainment industries, as well as in the newer field of immersive content and experiences. Creative tech hubs were defined as organisations which specialise in or include these technologies – providing shared or open access to physical facilities and technologies, skills development support, and acting as production/ innovation hubs.

The research **identified 64 creative tech hubs**, which meet the different elements of this definition. Among these, **10 different types of creative tech hubs** were identified, highlighting that within a rapidly emerging and cross disciplinary field, creative tech hubs take on a variety of forms, originate from different backgrounds, and have different aims and priorities within the broader field of creative technology. The different types of hubs identified include:

- Physical hubs offering co-working, incubation, acceleration, collaboration, skills development
- Cultural organisations experimenting/ producing with advanced screen-based technologies, either with some form of participatory format, or with a focus on professional artists
- Agencies/ initiatives that support the Cultural and Creative Industries (CCIs), including advanced screen-based tech, either publicly funded or membership-driven
- Informal digital networks or communities, with some physical presence
- Conferences/ summits/ festivals, with a focus on digital innovation or culture and tech
- Learning and skills development centres
- Academic interdisciplinary research institutions and programmes

In addition to the creative tech hubs, the research also identified venues and spaces in Germany in which the public can consume immersive creative content and experiences, created through the use of advanced screen-based technologies. In total, **42 consumption spaces were identified**, including purpose-built venues as well as permanent venues with either a predominant focus on programming creative tech experiences or which regularly offer such experiences. Considering the geographic spread of these different hubs and spaces, the mapping exercise demonstrates a spread across the whole country, but equally there are also clearly a number of leading regions – Berlin in particular, but also Baden-Württemberg and Nordrhein-Westfalen. As would be expected, more rural regions have fewer creative tech hubs and consumption spaces.

Creative tech – a vehicle to support migrants in Germany?

Creative tech hubs' current public engagement work: All interviewed hubs saw inclusion as an important subject, both in terms of their workforce and their audiences. Reflecting this, all hubs reported an aim to be 'open and accessible' to everyone, rather than focusing on particular target groups. However, whilst all of the arts and culture sector-focused hubs ran some form of community engagement activity, those situated more in the tech and business world, did so to a lesser extent (though some expressed interest in providing more public opportunities).

Views on creative tech as a tool to support inclusion of and self-expression among migrants: All interviewees felt that *in theory*, being able to engage with advanced screen-based tech could play a valuable role in supporting migrants to feel included, be able to express themselves and their cultures, and become more integrated into German society. **Key benefits noted**:

- the technologies' potential for self-expression, to tell diverse stories and recreate distant/lost worlds
- their potential to create virtual spaces for interaction and exchange, transcend language barriers and provide protective digital spaces
- their potential to engage younger generations.

However, most felt that the use of such technologies to generate these kinds of benefits was not a priority for migrants, as other artforms – less technically-demanding and well established – are more accessible to migrants. **Key challenges raised included:**

- the expense of the technologies required to produce immersive content
- the considerable technical skills required to create outputs using these technologies
- a wider lack of awareness of how these technologies can be used, and a lack of sector professionals with the required skills to support migrant communities in using these technologies
- lack of skills/ resources within creative tech hubs to work with (often vulnerable) migrants.

Views on integrating migrants in the creative tech workforce: In the context of skills shortages and limited diversity in the creative tech sector, several interviewees believed there were real opportunities for skilled migrants to enter the workforce. However, this is often dependent on external factors such as the availability of local training centres, challenges with local infrastructure, or regional reputational barriers. Interviewees were sceptical regarding the realistic prospects for lower skilled migrants to enter the workforce.

Starting points in considering opportunities to engage migrants with creative tech, and resulting recommendations

Throughout, interviewees mentioned a number of individual examples of activities related to the subject of this research and indirectly indicated some possible avenues for such activity. These provide useful starting points in considering potential opportunities for using creative tech (hubs) to support migrants in Germany. Based on these, a number of recommendations can be identified for the British Council and the sector.

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Who to engage with? Given the varying extent to which community engagement is undertaken by different types of hubs, the British Council should consider carefully which type of hub is most appropriate to engage with for any subsequent activity – e.g., those with a cultural remit would be better placed to engage in any subsequent supported creative tech production activity with migrant groups.

What types of activities could be supported to support migrants' opportunity for selfexpression? The British Council should consider i) promoting positive examples of inclusive practice, including through UK-German exchange of best practice; and ii) funding a support programme for intermediaries to develop similar engagement activities with migrants.

What types of activities could be supported to raise related skills amongst migrant communities? The sector should consider focusing on upskilling 'multiplier organisations' in the community, who can deliver skills development activity for migrants and other groups, as a few creative tech hubs already do. The British Council could consider developing a programme to support hubs in providing skills development – either for migrant communities directly, or for multiplier organisations. There is also potential to explore what good practice from UK creative hubs could be drawn upon to develop skills development initiatives in Germany.

How could existing sector skills needs be plugged? Given the perceived lack of diversity and skilled professionals in the sector, several interviewees saw potential for skilled migrants to enter the industry. The sector should work together with education and government to build a clearer picture of skills gaps across the country, and to create educational pathways into work for skilled labour. The British Council could research good practice examples from the UK.

In what other ways could advanced screen-based technologies support migrants? The British Council could support migrant organisations and their staff to increase their awareness, understanding and skills to be able to use these technologies in their work.

1 Introduction

1.1 Introducing the project

BOP Consulting was commissioned in April 2024 to undertake a research project to map creative technology hubs in Germany and their potential for inclusive practice with migrants and their communities. The aims of the project were therefore two-fold:

- To gain a better understanding of the size and scope of the creative technology sector in Germany, with a focus on mapping existing creative technology hubs across the country to identify the differing types and characteristics of these hubs, their number, location and key activities.
- 2. To understand how creative technology hubs could play a role in supporting migrant communities, in the context of the strong influx of migrants to Germany over the past decades and resulting social and economic challenges. Specifically, the research sought to investigate what the possibilities are for creative technology hubs /the wider sector to provide migrants with:
- help in articulating their own cultures and use of creative technology, and finding an audience, and also
- economic opportunities and opportunities for skills development.

The research aimed, alongside the mapping of creative technology hubs, to gain an understanding of what these hubs are currently doing in terms of inclusive practice, how well they are connected to migrant communities, and also their potential and interest in inclusive practice with migrant communities.

1.2 Research methodology and definitions

The research approach used for this project included initial scoping interviews with sector bodies across Germany, detailed desk research, and subsequent in-depth interviews with selected creative tech hubs.

A detailed description of the methodology can be found in the Appendix.

As a first step, working definitions of the key terms relevant to the project were established and agreed, to ensure a focused approach to the subsequent mapping and research. These included the following:

Creative technology (creative tech)

In the context of this report, 'creative technology' focuses specifically on advanced screenbased technologies used in creating digital environments or virtual worlds within the established film, TV, games and live entertainment industries, as well as within the more emerging field of immersive content and experiences (e.g. VR/AR/XR/MR). This decision was taken to focus on these technologies due to their capacity to support the development of narrative-based creative content, as well as their increasing use in social and cultural environments and their growing economic relevance in the creative industries.

Creative technology hubs (creative tech hubs)

In the context of this research, creative tech hubs were defined as organisations or centres that:

- specialise in or include advanced screen-based technologies as described above
- provide physical facilities (of a permanent or regular nature)
- are production and/or innovation hubs
- provide skills development support in advanced screen-based technologies
- provide some form of open or shared access (to a greater or lesser degree), i.e. the point
 was not to map in-house corporate facilities that exist for the sole use of individual private
 sector businesses.

Consumption spaces

In addition to mapping creative tech hubs that are focused on the production side, the British Council was also interested in knowing about dedicated new consumption spaces where audiences can experience products created using advanced screen-based technologies. To map these, these were defined as spaces:

- where audiences consume experiences driven by advanced screen-based technologies (e.g. VR experiences / escape rooms / games, immersive digital art exhibitions, festivals of media arts and technology)
- that were purpose-built for this or have a predominant focus on providing such experiences to the public (as opposed to occasionally hosting such experiences alongside other artforms).

Migrants

The research acknowledges the large number of people that live in Germany with migrant backgrounds. However, the purpose of the study is not to consider engagement of people with ethnic background in Germany who have been raised and educated in the country. Instead, the scope of this research is narrower, focusing on migrants to Germany who have arrived over the past 10 years.

Migrant organisations

Finally, for the purpose of this research, identification of migrant support organisations focused on those that offer some element of upskilling and professional development to migrant communities relevant to the creative technology sector as outlined above.

2. Mapping creative tech hubs in Germany

2.1 A short introduction to the creative tech sector

The wider screen-based technology sector

In recent years, both globally and in Germany, the size of the AR (Augmented Reality) and VR (Virtual Reality) market has been growing and is projected to continue growing both in terms of users and revenue. Already by 2018 in Germany, 116m Euro were generated through VR and it was seen as starting to *"outgrow a niche"*.¹ The largest market share lay with the gaming sector, followed by the sale of VR videos. Five years later, one 2023-2030 forecast projected an annual growth rate of the German VR market of 33.5%.² A 2023 Market Report meanwhile found that almost a third of consumers in Germany had used AR technologies in the past 12 months, identifying interest in particular among the gaming community, but also beyond, as well as among non-users.³

Key reasons for this acceleration are seen as the increasing competition of providers and products within the market; a strong research and innovation landscape, driven for example by the automotive, manufacturing and other commercial sectors; infrastructure investments; the decreasing cost of hardware such as VR headsets and *"growing consumer awareness"*.⁴ There has also been a growth of the use of VR and AR in the heritage/ tourism⁵ and real estate markets, with popular tourism destinations for example using the technology to create virtual tours and interactive experiences for visitors. Another reason lies in the expansion of 5G networks required by immersive experiences, helping to *"provide smooth transitions between the real and the virtual world"*, for example when using AR glasses. Likewise, ongoing advances in AI *"will allow retailers to capitalise on AR"*.⁶ However, there are as yet limited hardware and distribution channels across Germany, *"making it difficult for consumers to access VR products and services"*.⁷

National support to the sector

The federal German government has recognised the potential in VR and AR technologies, and over the past years has initiated a number of funding programmes and initiatives to support its growth, alongside that of digital technologies more widely.

On a strategic level, the federal government has aimed to support technological development including the potential of VR and AR technologies through its High-tech Strategies, which first launched in 2016 and sought to guide German investment in research and innovation across

⁷ Fortune Business Insights, Technology, Germany Virtual Reality Market, January 2025 www.britishcouncil.org/research-insight

¹ PWC, Studie: Deutscher Virtual-Reality-Markt wächst über die Nische hinaus:

https://www.pwc.de/de/technologie-medien-und-telekommunikation/studie-deutscher-virtual-reality-markt-waechst-ueber-die-nische-hinaus.html

² Fortune Business Insights, Technology, Germany Virtual Reality Market, January 2025:

https://www.fortunebusinessinsights.com/germany-virtual-reality-market-107617

³ Mintel, Germany VR and AR Market Report 2023, https://store.mintel.com/report/germany-vr-and-ar-market-report

⁴ Fortune Business Insights, Technology, Germany Virtual Reality Market, January 2025, Xpert.digital, Which XR technology will prevail – VR, MR or AR: <u>https://xpert.digital/en/xr-technology-development/</u>

⁵ See e.g.: https://tourismusnetzwerk-brandenburg.de/themen/themen-z/digitalisierung/augmented-reality-ar-im-tourismus ⁶ Mintel, Germany VR and AR Market Report 2023,

various fields relevant to society. The most recent High-tech Strategy 2025 has now been replaced by the new 'Future Research and Innovation Strategy', which focuses on *"addressing major social and global challenges while expanding technological leadership, advancing the transfer of research to impactful applications, and increase technological openness"*.⁸ Recognising that Germany, *"lags behind in the pioneering field of cutting-edge technologies and digitalisation"*, it aims to secure its digital and technological sovereignty and harness the potential of digitalisation. This is further supported by the Federal Ministry for Economic Affairs and Energy's 10-year 'Digital Strategy 2025', which supports the development of digital capabilities and the promotion of the use of new tools to support Germany's digitisation processes. It is based on 10 pillars, including one focusing on lifelong digital education.

Supporting these strategies are a number of federal sector support initiatives. These, for example, include the Federal Ministry for Economy and Climate Protection's Digital Hub Initiative, set up in 2017 to bring together businesses with innovation partners in science and the startup scene. This was planned to be further extended in 2024 with the creation of four to six further hubs. At present, there are 12 hubs across Germany spanning different industry subsectors and including over 6,000 startups and 2,000 partners. The Ministry also runs the 2022-2026 support programme 'Development of digital technologies', which aims to strengthen companies' skills and capacity for innovation with a focus on digital innovation, infrastructure development and technologies of the future, to ensure they are able to react to new technical challenges, political prioritisation and changing contexts. The programme aims to address key current trends, developments, market needs as well as environmental challenges through targeted calls.

In addition to these national support structures, Germany's federal structure means that there are a wide range of regional support structures available across the different Bundesländer of Germany that promote regional economic development for various subsectors of the economy. Several interviewees for this report mentioned receiving support from such regional support structures, suggesting that at this level, too, policy makers are beginning to recognise the potential and opportunities of supporting the advancement of creative technologies in their regions.⁹

Support to creative technologies in relation to the creative and cultural sectors

The creative industries were initially defined by the federal government in 2007. Since then, the sector is supported through the 'Initiative Kultur- und Kreativwirtschaft der Bundesregierung', which aims to support the development of the sector and its actors, with the 'software and games industry' recognised as one of 11 sub-sectors. By 2023, the sector had a sales volume of almost 205bn, around 2.2% of the German economy and employing around 2m people.

⁸ STIP Compass, High-Tech Strategy 2025, https://stip.oecd.org/moip/case-studies/1

⁹ Further sources for this section:

https://stip.oecd.org/moip/case-studies/1

https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/germany-digital-strategy-2025 https://www.de.digital/DIGITAL/Redaktion/EN/Publikation/digital-strategy-2025.pdf?__blob=publicationFile&v=9 https://www.de-hub.de/

https://www.bmwk.de/Redaktion/DE/Pressemitteilungen/2024/04/20240429-bmwk-ausbau-der-digital-hub-initiative.html https://www.bundestag.de/webarchiv/presse/hib/2019_04/632908-632908

https://www.digitale-technologien.de/DT/Redaktion/EN/Downloads/Publikation/dev_of_digital_technologies-brochure.pdf?__blob=publicationFile&v=4)

A key 'lighthouse project' of the Initiative Kultur- und Kreativwirtschaft der Bundesregierung is the Kompetenzzentrum Kultur- und Kreativwirtschaft des Bundes, which in recent years played an important role in the promotion of the sector, acting as contact point for the sector and related institutions. One element of its remit was a focus on development and innovation. This for example included a programme which set up Creative Labs, temporary digital innovation spaces focusing on key subjects to promote the development of new products, services and business models. The funding period for the centre closed in December 2024, with plans in place for its continuation from 2025.

In 2021, a publication by the Federal Government Commissioner for Culture and Media moreover detailed the digital transformation of the cultural and creative industries (CCIs), highlighting it as an addition rather than replacement to analogue forms in the sector. As such, it recognised the challenges presented to sector organisations and actors to successfully engage with this transformation, and the resulting need for support, including for skills development. The paper referenced the Commissioner's ongoing financial support to a range of innovative and transformative projects to promote the use of digital technologies and highlighted the need for a concerted effort to collaborate across all levels of the state, civil society and businesses. One major support programme referenced was Neustart Kultur, Germany's 'rescue and future programme' for the CCI's in the wake of the COVID pandemic. Across around 60 funding initiatives within this programme, 'digitalisation' was seen as a cross-cutting theme, with several including the creation of VR and AR offers. Examples include:

- Kultur.Gemeinschaften, which supported small cultural institutions to professionalise in the field of digital content production, including the buying of technology and the development and distribution of digital content.
- dive.in Programm f
 ür digitale Interaktion, which from 2020-2022 supported cultural institutions in the delivery of digital and hybrid formats for the public, including AR and VR, with funding of 31.3m Euro via Neustart Kultur.
- Kultur Digital, which aims to support publicly funded cultural organisations in making use of digital opportunities by supporting digital curation, production and communication.
- museum4punkt0, which supported the creation of digital offers for learning, experiences and participation in museums. It commenced in 2017 and was continued in 2021 with Neustart Kultur funding.¹⁰

Overall, this highlights an increasing recognition by the state of the value and importance of the advancement of digital production and consumption within the CCI's in Germany in recent years and resulting support. However, it also suggests an as yet broader approach to the promotion of

https://www.bmwk.de/Redaktion/DE/Dossier/kultur-und-kreativwirtschaft.html

https://www.bundesregierung.de/statisch/kulturenimdigitalenwandel-bkm/#0

¹⁰ Sources for this section:

https://kreativ-bund.de/wp-content/uploads/2017/04/Dossier_Digitalisierung.pdf

https://www.pwc.de/de/technologie-medien-und-telekommunikation/gemo-2018.pdf

https://soziokultur.neustartkultur.de/ueber-neustart-kultur/

https://www.kulturstiftung-des-bundes.de/de/projekte/transformation_und_zukunft/detail/kultur_digital.html https://www.kulturstiftung-des-

bundes.de/de/projekte/erbe_und_vermittlung/detail/dive_in_programm_fuer_digitale_interaktionen.html https://www.museum4punkt0.de/

https://kreativ-bund.de/entwicklung-und-innovation

digitalisation and a strong focus on cultural organisations, with content production through advanced screen-based technologies in the creative industries perhaps an as yet less strategically funded element, compared to the UK. UK research and innovation policy has in the past decade invested considerable funds into supporting the creative industries to build their digital production capacity, through major initiatives via AHRC and UKRI such as the £40m Audience of the Future Challenge Fund into the development of new immersive technologies, over £100m for the Creative Industries Clusters Programme, and £50m for the CoSTAR R&D programme for Creative Technology. The Immersive Arts programme (2024-27) gives artists and cultural organisations based in the UK the opportunity to access training, mentoring, specialist facilities and vital funds, with **£3.6 million** in grant funding available to help grantees undertake technology-enabled immersive projects. Funding for Immersive Arts comes from an ambitious partnership between the Arts and Humanities Research Council, Arts Council England, Creative Scotland, Arts Council of Northern Ireland and Arts Council of Wales.

2.2 Overview of creative tech hubs and consumption spaces identified

2.2.1 Overview of identified creative tech hubs and consumption spaces

Creative tech hubs

We applied a 'snowballing approach' as detailed in the Appendix to identify an initial long-list of creative tech hubs, followed by a detailed desk-based review of their offer to identify those relevant to the project. Based on this approach, **a total of 64 creative tech hubs were identified**, which at least to some degree meet the different elements of the project's definition: i.e., which specialise in or include in their offer a focus on advanced screen-based technologies; and which at least to some degree support production or innovation as well as skills development, provide physical facilities (of a permanent or regular nature), and some form of public interaction.

Based on our detailed review, **10 sub-categories of different types of creative tech hubs** were subsequently identified. As this makes clear, there is no 'one size fits all' type of creative tech hub – a too narrow definition would have yielded very low results. Instead, in a rapidly emerging and growing field, **creative tech hubs take on a variety of forms**, originate from different fields (e.g., with some emerging from the cultural sector, education sector or tech/ business sector) and as such, have different aims and concentrate on different focal areas within the broader field of creative technology. Identified sub-categories thus range from spaces more akin to collaborative workspaces, to cultural organisations, sector support agencies, recurring conferences to educational bodies. Broadly, this picture is similar in the UK, where the same sub-categories of creative tech hubs can be found. One difference however lies in the stronger presence in the UK of hubs run by universities, and which are designed to be both

industry- and community-focused, as well as research-based.¹¹ Identified potential hubs in Germany in contrast appear to be largely research- and education-focused.

A summary of these different types of creative tech hubs and the number of each identified is set out in Table 1 below, with further detail provided across the section. It is important to note that whilst providing insight into the shape of the sector and an indication of its extent and location at the present time, the organisations mapped for this study should not be considered as fully comprehensive or exhaustive. Whilst our approach means that regional sector bodies were able to recommend key organisations in their area, it is not unlikely that some were missed. Moreover, given the broad definition, this results in a certain degree of flexibility and subjectivity as to which organisations should or should not be included. Lastly, in a fast-moving sector, the identified Hubs provide a snapshot at a given time.

Table 1: Summary table of the different types of creative tech hubs identified

Type of creative tech hubs identified

Number identified

Physical hubs offering co-working , startup incubation, acceleration, collaboration, and skills development to varying degree	13
Cultural organisations experimenting/ producing with advanced screen- based technologies, <i>including providing some public workshops/ events/</i> <i>participatory formats</i>	3
Cultural organisations experimenting/ producing with advanced screen- based technologies, <i>with a focus on professional artists</i>	7
Agencies/ Initiatives that support the CCI sector/ sector organisations, including advanced screen-based tech: <i>publicly funded</i>	6
Agencies/ Networks that support the CCI sector/ sector organisations, including advanced screen-based tech: <i>member-based</i>	6
Informal digital networks or communities focused on advanced screen-based technology	4
Conferences / summits/ festivals / discourse , with a focus on digital innovation	5
Conferences / summits/ festivals/ discourse , with a focus on culture (art/ film/games) and tech	7
Learning and skills development centres , primarily with a focus on public/ educational offers	8
Academic interdisciplinary research institutions and programmes offering varying degrees of public interface	5
Total	64

¹¹ Such as e.g. Mediacity Immersive Technologies Innovation Hub at University of Salford Manchester; the CoSTAR network of Labs at/ led by University of London, University of York, Ulster University, Abertay University with further academic partners; MyWorld supported by University of Bath, University of Bristol and University of the West of England. www.britishcouncil.org/research-insight

Consumption spaces

In addition to the creative tech hubs, we used the same approach to identify key spaces in Germany in which the general public can consume products created through the use of advanced screen-based technologies.

Whilst initially focusing our research on permanent, purpose-built venues, this was again extended to also include permanent venues or spaces that either predominantly focus on programming, or regularly offer program, such experiences. In total, we identified 42 such consumption spaces, 20 of which were purpose-built.

Table 2: Summary table of different types of consumption spaces identified

Type of consumption spaces identified	Number identified
Permanent purpose-built venue / space for tech experience	20
Permanent venue/ space with predominant focus on programming tech experiences	11
Permanent venue/ space which regularly (but not predominantly) offers programmes with tech experiences	11
Total	42

2.2.2 Geographic spread of identified hubs and consumption spaces

In terms of the geographic spread of creative tech hubs and consumption spaces across Germany, a picture emerges which suggests some availability across the whole country, but which highlights a number of key regions as being at the forefront (see Table 3).

Perhaps not surprisingly, Berlin with its strong creative and startup scene and the surrounding area is home to most identified Hubs. This is followed by Baden-Württemberg, home to several prominent universities (including the Karlsruhe Institute of Technology) and a strong automotive and medical tech industry; and then Nordrhein-Westfalen, Germany's most densely populated region with the largest economy in the country. A similar pattern emerges for consumption spaces, with most identified spaces located again in Baden-Württemberg, Berlin and Nordrhein-Westfalen. By comparison, more rural regions show less identified creative tech hubs and consumption spaces.

Table 3: Geographic spread of identified creative tech hubs and consumption spaces

Bundesland	Creative tech hubs	Consumption spaces
Baden-Württemberg	11	9
Bayern	4	6 (of these in Munich: 3)
Berlin	16	8
Brandenburg	5	

Bremen	1	
Hamburg	2	3
Hessen	1	3
Niedersachsen	2	
Nordrhein-Westfalen	9	8
Rheinland-Pfalz	1	
Saarland	4	
Sachsen	5	4
Schleswig-Holstein	2	1
Thüringen	1	
Total	64	42

This spread is further visualised in the below two maps.



Figure 1: Geographic spread of identified creative tech hubs



Figure 2: Geographic spread of identified consumption spaces

Insights from the scoping stakeholder interviews shed further light on the geographic distribution of the sector and factors affecting it. Stakeholders reported that the creative tech sector was a fast-developing field, with some activities noted across most regions, but also with clear differences. Such differences were associated with regional, contextual factors that affect the creation of creative tech hubs, including:

Rural vs. urban areas: Stakeholders noted a clear concentration of hubs in urban areas. The
prevalence of such hubs in urban clusters was partly explained by the high levels of
collaboration and cross-fertilisation across subsectors (e.g., film, design, art) and
technologies (advanced screen-based technologies, AI, etc.) that characterise and facilitate

the emergence of creative tech hubs. Therefore, regions, with fewer urban centres and more rural areas, are more likely to have a greater number of hubs.

- Availability of funding: There are regional differences in available investment and public funding. Since advanced creative technologies are considered expensive technologies, regions with fewer funds are less able to support creative tech initiatives.
- Funding structures and political 'lens': While in some regions, funding for creative activities is derived from traditionally 'cultural' budgets, in others they are situated within economic development funding streams. This may affect the purpose and types of activities offered by any hubs (e.g., whether or not a creative tech hub offers any public engagement/ publicfacing activities).
- Innovation culture: Some stakeholders noted different attitudes, contrasting a more 'traditional' preference for product quality and solidity with an appetite for taking risks, experimentation and speed of innovation.

2.3 Further detail on each of the identified types of creative tech hub

The following section provides a more detailed description of each of the different types of creative tech hubs identified as well as a list of identified and their location.

A number of case studies of individual creative tech hubs are provided across the section.

2.3.1 Physical co-working hubs offering incubation, collaboration, skills development, etc.

Physical co-working hubs are here defined as those that provide a variety of offers including coworking space, startup incubation, business acceleration, collaboration and networking and/or skills development. Moreover, their services include – again to more or lesser extent – elements related to advanced screen-based technologies, for example through offering relevant facilities, training, information events or through housing relevant companies/ startups. A number of coworking spaces that only included a small number of creative tech businesses alongside many others, and did not offer any related services, were not included here. Whilst some of these spaces act as independent organisations, others are run by umbrella organisations, including larger sector support organisations or universities.

Table 8: Physical co-working hubs

Physical hubs identified	Location	Bundesland
Games BW Players	Heidelberg	Baden-Württemberg
Haus für Film und Medien (opens 2028)	Stuttgart	Baden-Württemberg
Virtual Dimension Center	Fellbach	Baden-Württemberg

XR HUB Bavaria ¹²	München	Bayern	
XR HUB Bavaria	Nürnberg	Bayern	
XR HUB Bavaria	Würzburg	Bayern	
COCONAT/COCOLAB	Bad Belzig	Brandenburg	
MediaTech Hub Potsdam	Potsdam	Brandenburg	
Verein Games Ahead & Hubertta	Trier	Rheinland-Pfalz	
Dock11 & Co:Hub 66	Saarbrücken	Saarland	
East Side Fab e.V.	Saarbrücken	Saarland	
Innovation Center Unversität des Saarlandes	Saarbrücken	Saarland	
R42	Leipzig	Sachsen	

Case Study: Coconat, Bad Belzig, Brandenburg

Based on an interview with Coconat's Co-founder and Managing Director, Julianne Becker.

Introduction

Coconat is a creative hub offering co-living and coworking space, a technology-focused making space and public programmes. The original idea, to create an idyllic place in the countryside for digital (and other remote) workers to have a 'retreat' while working, was born in 2012. After two successful test runs, Coconat opened permanently in May 2017 in the Klein Glien estate, an hour's drive from Berlin.

Coconat's mission is to "create an inclusive community and inspiring environment for all people". The founders had a vision of creating an 'impact-driven company' that develops tourism projects for the benefit of economic rural development. Delivering a positive social and environmental impact for the community they are based in is key, as Julianne Becker explained: "Having close ties with our neighbours is really important. We don't want to be a project that is just parachuted into the community."

Key Activities and Offer

Coconat offers a mix of services, including:

 'Workation' retreats' – long-term stays or shorter-term residencies for digital nomads (and remote workers from other sectors), such as the 'Rabbit Indie Games Residency', a monthlong residency for 15 game developers from a diversity of backgrounds, providing opportunities for collaboration and innovation. Coconat also hosts private company awaydays or retreats, as well as individual academics or freelancers.

¹² These could also be categorised under 2.2.4 Agencies and Initiatives that support the sector. www.britishcouncil.org/research-insight

- 'Cocolab' a maker space equipped with advanced screen-based technology, such as VR equipment and a game-making lab, alongside resources for STEM education (e.g., 3D scanners and printers, laser cutters, etc.).
- Coworking space for local people and the opportunity for regular meet-ups, events, workshops, and a workshop area supporting various creative projects (e.g. upcycling), particularly aimed at rural communities.

In addition, Coconat is leading a range of other local and regional development projects, such as the creation of a 'Mobility Campus' – that will see an old train carriage transformed into a coworking space and deliver residencies aimed at developing solutions for mobility challenges in rural areas – or as co-founder of the regional network 'Zukunftsorte, a network of creative hubs in Brandenburg. Coconat also developed a project with the Flaeming Nature Park, that combined original art works



with augmented reality avatars (accessed via a smart phone The Coconat site © Tilman Vogler app) to create a new nature trail.

Community and outreach activities

Coconat is well embedded into the local community, aiming to make a positive contribution to the local area – through local economic development ("we want young people to be able to see a future for themselves in this area"), collaborative working and opportunities (e.g. through coworking memberships and events for local residents) and special projects that aim to increase *"the acceptance of difference in the area"*.



Al generated picture of 'Idyllic space for Innovation' produced by Cocolab to illustrate the 'idyllic space for innovation' offered by the Makers Retreat at Cocolab. © Cocolab

One such project is the 'Exile Media Hub Brandenburg' – a co-living and working project for refugees and asylum seekers with a journalism or media background. Located in a nearby village in a building converted to refugee housing, Coconat works in partnership with Brandenburg's Refugee Agency and Media in Cooperation and Transition (MiCT) and acts as the site manager of the building's ground floor space which provides media equipment, including a podcasting room as well as video- and photo-editing facilities. The original concept aimed to deliver a tailor-made programme for 30 journalists, including comprehensive training on the use of AI in media production, programming and data analysis; however, recruitment of skilled migrants with journalism experience proved difficult. Since widening the scope of the project to include other media/creative professionals (e.g. photographers), 23 refugees and asylum seekers (plus their families) now live and work onsite and

benefit from the use of facilities, professional training and skills development (delivered by MiCT), as well as receiving wider support by a social worker.

Business model/funding

Coconat has a mixed business model. Core activities are funded through the commercial income from retreats (with a varied pricing model, where private companies are charged higher rates than social enterprises/charities). Further income is received from two development grants (from the European Social Fund and the European Regional Development Fund), as well as membership fees for co-working facilities and the maker-space (both of which are not commercially viable on their own within the rural context of the site).

In addition, Coconat draws down a range of time-limited project funding grants from public funding sources (e.g., the Exile Media Hub project is funded through three ministries of the state of Brandenburg) and participates in commercially tendered opportunities (e.g. an accelerator programme).

Case Study: XR HUB Bavaria, Bayern

Based on an interview with Director of XR HUB Bavaria Munich, Silke Schmidt.

Introduction

XR HUB Bavaria was set up shortly before the Covid pandemic began as an initiative to strengthen the media- and business location Bavaria. It is based at three physical spaces across the Bundesland, including XR HUB München, XR HUB Nürnberg and XR HUB Würzburg, all of which concern themselves in different ways with questions around XR technologies and their uses. With a key focus on business-to-business engagement, all aim to bring people in contact with these technologies *"as many don't yet have that awareness"*, and to raise the visibility of the location. This for example includes working with the arts and cultural sector, but also with industry, metaverse, education and training.

The three locations work closely together and were co-founded with the aim of ensuring regional spread, but all have different legal personalities and core focuses. In Munich, the team consists of nine people across four full-time positions, many students included, and Director Silke Schmidt highlights the importance of their diverse backgrounds: *"our team has very different backgrounds, you need so many different skills. Media design, computer sciences, communications, high technology industries..."*

Key activities and offer

XR HUB München is based at the Medien.Bayern.GmbH and acts as information- and communication point for the entire XR ecosystem in Bavaria. It supports professionalisation of local XR actors through skills development and aims to increase local innovation and visibility. Workshops have for example included subjects such as 360° production or avatar creation. The HUB also offers a project for the creative sector around the building of virtual spaces, specific

workshops and networking events. Workshops have for example included subjects such as 360° production, avatar creation (both in cooperation with the XR Bavaria e.V. and Start into Media), storytelling, e.g. creating Space-Based Narratives, the User Journey, Metaverse(s) with Mika Johnson, or the power of artificial images with Cyberräuber.

The HUB runs multiple events as well as a free and independent XR network, with the aim of providing a central 'community HUB for regional XR ecosystem that allows people to exchange and innovate together. In their work, they collaborate with a range of



© The Infinite Library by Mika Johnson: a VR experience developed by Mika Johnson for the Goethe Institute and used as an example in a storytelling workshop run by XR HUB München.

regional, national and international partners. The HUB is currently a partner of the DOKfest.München for its VR Pop Up Cinema as well as partner of the 'Festival of the Future' in July 2025 organised by 1E9, a local startup, where a bigger XR Exhibition will be presented, also in cooperation with the International Film Festival Munich. In 2024 the XR HUB Munich hosted the start of the NUMIX LAB, a big international event by Xn Québec and correspondances digitales as well as the Art Tech Prize and Conference in cooperation with the Art Tech Foundation in Switzerland and XR4Europe. In addition, the HUB collaborates with local museums and theatres¹³ for the purpose of networking and joint actions.

XR HUB Nürnberg in turn focuses on raising the visibility and market access for XR companies, as well as to make XR technologies accessible for local companies, with a particular focus on tourism, culture, games and animation as well as others.

XR HUB Würzburg, located at the local university which has a strong research expertise in XR and AI, focuses on research and development. With motion capture and avatar production facilities, professionals can access this space to test and use these technologies. The HUB uses the available competencies to transfer research and technological know-how into the development of products.

Community and outreach activities

Whilst the XR Bavaria HUBs are in Head Silke Schmidt's words, "open for all, we work crosssector", it is primarily set up for those engaging with these technologies in a professional capacity: "in principle, anyone can come who wants to engage with the subject professionally", says Schmidt. With workshops focused in particular on the creative scene, these are accessible to anyone in the industry, though those keen to access their services are asked to write a short application detailing their interest.

¹³ Silke Schmidt for example referenced the Staatstheatre Augsburg and the Staatstheater Nürnberg as well as the Theatermuseum München and the Archäologische Staatssammlung as engaging with or developing projects using advanced screen-based technologies. The Staatstheatre Augusburg for example offers VR pieces which can be viewed by borrowing VR glasses which are sent out by post. Its current piece Ekklesia is a hybrid theatre play for 8 people. www.britishcouncil.org/research-insight

However, with the aim of "raising awareness of the subject among the broader population", the HUB occasionally provides offers for a broader audience, for example through an open day and family programme at the Festival of the Future. Schmidt highlights that the main barrier in doing more lies in a lack of available resources. In order to be able to reach out to more people, the HUB therefore connects with 'multiplicators' such as libraries or adult education institutions, training staff at these places, who can then pass on their knowledge. This has "worked brilliantly, is very popular". On the back of this, libraries have for example run short courses, with the HUB connecting them with students who



Space weeks at Erich Kästner School via XRXplorer School – a two-week project exploring space and space travel including through XR technologies, e.g., using VR headsets to experience a moon landing © XRXplorer School

could support these courses. They also occasionally provide VR headsets for such purposes, though Schmidt says they are finding that more institutions are now investing in their own. They also work together with schools – for example via the project XRXplorer School¹⁴ and by organising the XPlorer Day – AI and XR in education – together with enthusiastic teachers as well as with schools for vocational training and support the new apprenticeship: designer for immersive media.

Business model and funding

Most offers are currently provided free of charge. The HUBs are funded by Bavaria's Ministry for Digital Affairs, with a focus on XR as a core part of media support and innovation. The XR HUB Munich is also supported by the Bavarian Regulatory Authority for New Media, and its current location in the Forum of the Future is enabled by the Deutsches Museum. XR producers and XR artists can apply for the Bavarian XR funding, the programme to support the arts sector via the FilmFernsehFonds Bayern, which also aims to promote coproduction.

2.3.2 Cultural organisations experimenting or producing with advanced screen-based technologies

Cultural organisations for the purpose of this mapping include organisations that regularly experiment with and/or produce new productions using advanced screen-based technologies, and which aim to raise the skills and awareness of these technical advances within the wider cultural sector.

Among these cultural organisations, some focus their innovation/production work with these technologies on working with established, professional artists, whilst others (also) provide some form of public interface with regard to the use of these technologies, for example in the form of

¹⁴ Schools who show a commitment to engaging with the subject XR can gain status as XRXplorer School and become part of a XRXplorer network.

workshops or other participatory offers (i.e., participatory, beyond simply staging pieces for a public audience).

Table 5: Cultural organisations experimenting or producing with advanced screen-based technologies

Cultural organisations centres identified	Location	
With a primary focus on working with professional artists with these technologies		
The Future Design Institute	Ettlingen	Baden-Württemberg
ZKM & ZKM Hertzlab	Karlsruhe	Baden-Württemberg
HAU 4	Berlin	Berlin
LAS Art Foundation	Berlin	Berlin
Edith Russ Haus für Medienkunst	Oldenburg	Niedersachsen
Future Campus Ruhr	Essen	Nordrhein-Westfalen
Akademie für Theater und Digitalität	Dortmund	Nordrhein-Westfalen
With inclusion of public workshops, events, participatory formats		
Dock 11 Digital	Berlin	Berlin
MIR.Lab	Gelsenkirchen	Nordrhein-Westfalen
ZIMMT ¹⁵	Leipzig	Sachsen

Case Study: ZKM, Karlsruhe, Baden-Württemberg

Based on an interview with ZKM's Scientific-Artistic Chairman, Alistair Hudson.

Introduction

The ZKM was founded in 1989 with the mission of continuing the classical arts into the digital age in a region with a strong technical university and industry, keen to build its reputation for technological progress. It is modelled on the ideas of the Bauhaus movement to join the arts and tech fields for the wider benefit of society. To do so, the ZKM brings together exhibitions, research, education and performance with collections, archives and production across multiple genres.

¹⁵ Here, the public offer is currently provided by the organisation's directors in a freelance capacity as separate to organisation's work, though there are plans to provide more public offers via ZIMMT itself, subject to available funding. www.britishcouncil.org/research-insight 23

According to Alistair Hudson, the institution's key approach lies in research, experimentation and development, *"making and doing"*, followed by making new projects and their results public through exhibitions etc. Key to this is the idea of providing value to society, encapsulated in the concept of a 'useful museum' – artistic and cultural institutions as centres of social responsibility and transformation in an age of rapid technological advancement.

To support its focus on bringing together art and tech, Hudson highlights that "one of the unique things about ZKM is that in its team it has a lot of software engineers, electronic engineers, who are able to go beyond the 'black box' and go back to base level, making tools and developing technologies. That is one of the things we do – make tools for others to use. Software, robotics, *AI*, biologics, ecology, all being developed with an artistic and social focus".

ZKM maintains partnerships with institutions both nationally and across the world including China, the Middle East, India and Africa, recognising the importance of "*actively showing work from diverse cultures*" both in terms of drawing in more diverse audiences as well as to "*create diversity in the system, present different perspectives.*"

Key activities and offer

ZKM houses one of the world's most notable collections of media art going back to the 1950s and holds archives of artists in the history of computer art and engineering. It is also home to a restoration department with a focus on the restoration of electronic arts, digital arts, computergenerated art, biological art, and games. The department digitises national and international archives and art works at risk of being lost as only few organisations globally provide similar services (Tate Modern, MOMA).

To support its 'experimentation and doing' work, the institution is home to the ZKM Hertzlab, which focuses on artistic-technological research, with current research focal points being immersive technologies such as XR, AR and VR, human machine interfaces, circular systems and AI. The Hertzlab offers artists of all genres the opportunity to experiment with technologies in collaboration with scientists and technical developers. It also runs a residence programme which brings together software engineers, writers and artists *"to imagine a world differently"*. According to Hudson, this connects to the realisation that art and technology have always interacted, with creative activity often expanding technologies through introducing new creative uses. ZKM has seen strong interest from tech companies in collaborating with artists and is likewise interested in increasing collaboration with industry. Hudson feels that *"XR will be part of that […]. Rather than a solitary experience, it's a community experience, where people in play create effect, change. Tools are developed through making art works; this creates frameworks for how they can be used in health care, environment, counselling, communities…".*

Across a vast 13,000 sqm exhibition space, ZKM holds regular exhibitions, events, concerts, performances and symposiums. Recently, there has also been a move into creating biological art. The institutions' music department for example has created new pieces, one in which the sound of fungi mycelium was live-streamed 'eating' the book works of Hegel music; and a piano composition created with quantum computing. At the same time, a sculpture with plasticeating bacteria is currently on display. ZKM also provides a digital offer, including online tours, talks, concerts, games and videos. Core to this is the aim of informing the public about



>>zkm_gameplay.the next level<< - the computer game platform of ZKM. A permanent exhibition, which invites visitors to exchange and play games, aimed at games and those with little experience of computer games © ZKM

technologies and their implications for daily life and society. For example, a current exhibition on AI takes the shape of an interactive installation, which responds to visitors' prompts.

The institution also houses various public events for different audiences, including for example AI workshops and a yearly hackathon, *Goulash Programmiernacht*, in which 3,000 participants code, eat goulash, and sleep in the building for three days.

Community and outreach activities

ZKM aims to ensure that through its work it is serving the public, by ensuring that *"creativity is part of our social fabric" and "looking to make a society that is inventive, creative and tolerant".* For example, a recent project on blockchain considered how these technologies could be used to build fairer economic systems and social interaction.

As such, ZKM is firmly targeted at a broad audience – ZKM is keen to be there for everybody – and the institution offers free general admission every Friday afternoon to support this. However, Hudson highlights ongoing challenges in drawing in a diverse audience. To address this, ZKM runs a number of events and exhibitions aimed at interacting with specific community groups, going out to invite these in. In one example, they have been engaging with local Korean communities in connection with a new exhibition by a Korean artist. They also engage with local Turkish communities via local community groups. In one project, 'art is a tool', ZKM brought together community groups to identify key issues in the city; then worked with artists to find ways to address these together with members from the community. ZKM has also worked with a few refugee charities in the past on specific projects.

To further support its work with the public, the ZKM runs an education programme, driven by a dedicated education team, that includes public projects as well as projects with schools, colleges and universities.

In its work with artists, ZKM moreover runs a programme called 'artists at risk' which provides support and accommodation for artists from conflict zones, refugees and those with asylum status. Through this, it has for example worked with artists from Ukraine and Iraq. www.britishcouncil.org/research-insight

Business model and funding

ZKM is predominantly state-funded, with support both from the city of Karlsruhe and from the Bundesland of Baden-Württemberg. The remainder of its funds are drawn from third-party funding such as foundations, as well as ticket and shop sales.

Case Study: MiR.LAB, Gelsenkirchen, Nordrhein-Westfalen

Based on an interview with MiR.LAB's Director, Nora Krahl.

Introduction

MiR.LAB opened in February 2024 in the pedestrian precinct of the city centre of Gelsenkirchen. As a space or 'laboratory' it is designed as a new platform for artistic exchange for the town's major theatre venue, Musiktheater im Revier. Its key aim lies in developing 'unconventional' forms for musical theatre to explore the future of music theatre by blending traditional forms with advanced screen-based technologies. In the process, it is both testing the use of digital technologies in musical theatre and introducing artists with these forms, as well as finding new ways to engage various local communities with the theatre.

As such, Director Nora Krahl referred to the space's innate "balancing act". One hand, it is designed to support the advancement of new technologies in musical theatre to "research how opera can be brought into the 21st century through bringing together technology and musical form and telling new stories". On the other hand – and in a context of being located in a region with strong structural problems and an increasing proportion of inhabitants with migrant background who "have not culturally grown up with musical theatre" – the laboratory seeks to understand how the theatre can come into contact with different community groups in the city, through the vehicle of digital technologies. In this context, the laboratory focuses on creating projects that bring together these two sides of the "balancing act".

Key activities and offer

Whilst the laboratory initially started off providing 'open days' which people could come and go, this has been changed to instead delivering targeted workshops and events, some of which take place within community settings, as this has been found to be more successful in drawing in participants. In doing so, it works together with other local community organisations such as youth groups, churches,



Am Ende der Welt Sci-Fi Oper, the first opera production by Mir.LAB, which premiered in an empty office space in Gelsenkirchen © MiR.LAB

schools or e.g., a local Syrian café and is supported by a dedicated outreach worker.

As one example, of MiR.LAB's work with communities delivered a large workshop series on the subject of 'what is the opera made of' with local community groups, which focused on using technologies *"that everyone has on their mobile phone"* in the form of open-source programmes such as suno.ai, chat.gpt and SIMS. Aspects of musical theatre were taken apart – text, music, www.britishcouncil.org/research-insight 26

stage scenery – and then redeveloped through use of these technologies with stage designs created through use of VR glasses. In another example, the lab has "*attached itself*" to a local short film festival to create a workshop targeted at the town's large Sinti and Roma communities, which will use prompting via suno.ai to create 'Balkanbeatz', subsequently translated into a video through AI tool Wav2Lip. In a third example, they created a project located around the supermarket Norma, called Opera Norma: In this way, according to Nora Krahl, they are "*trying to get in contact with different groups…We got out into the city [in spaces with people with migration background] and see who is there, who has interest in joining*".

Whilst the laboratory seeks to use easily accessible technologies, Krahl highlights that their use nevertheless generally requires some form of skills transfer. Although there are opportunities for self-learning (e.g., via youtube), this relies on a certain level of interest and skill as well as availability of a computer. Krahl for example dreams of setting up a hub of young people who code at the laboratory, whilst the LAB also runs a bi-weekly event for pensioners which involves chat as well as skills development around mobile phone usage.

Other activities that have encompassed strong involvement of theatre staff and creatives to promote skills development include the creation of a VR-Mini-Opera, during which MiR.LAB worked with a singer from the theatre; and the creation of a play together with the puppetry section of the theatre, which brought together analogue and digital puppets and which required strong collaboration with the theatre's lighting team. For 2025, MiR.LAB is planning a new piece, working together with singers, musicians and audio technicians. So far, collaboration with the main theatre is working well, and further workshops are planned, with an eye to *"where does it make sense to try something out with our technologies":* for example in the mask department through use of VR and 3D printers, or with the stage scenery department to use VR glasses, or with the marketing department to use AI, or with singers using motion tracking. The LAB has recently ordered an LED system to further expand their offer.

Business model and funding

MiR.LAB is a support project by the Musiktheater im Revier and supported by North-Rhine Westphalia's 'new pathways' support programme. Activities for the community are free of charge, whilst those staged in the main theatre are subject to normal ticket prices.

The project is currently set to continue for the next 1.5 years, with hope that it will be able to attract subsequent funding, if the project can evidence its value.

2.3.3 Learning and skills development centres

Learning and skills development centres are defined here as centres or organisations with a primary focus on skills development or educational offers rather than on production, and with an offer aimed largely at the general public, rather than focusing on professional training. It includes several organisations that focus in particular on providing training or educational offers for younger age groups.

Table 4: Learning and skills development centres

Learning and skills development centres identified	Location	Bundesland
TUMO Mannheim	Mannheim	Baden-Württemberg
NODE Forum	Berlin	Berlin
TUMO Berlin	Berlin	Berlin
Aurora XR School for Artists	Berlin	Berlin
Berlin School of VR	Berlin	Berlin
Digital Impact Lab	Bremen	Bremen
FABMOBIL	Sachsen	Sachsen
Open Campus.sh	Kiel	Schleswig-Holstein

Case Study: Berlin School of VR, Berlin

Introduction

The Berlin School of VR is a new startup, based in a studio in Neukölln, Berlin, that provides foundational training on how to work with Virtual Reality (VR) technology. Founded by media and performance artist Katharina Haverich, the organisation brings together a group of Berlinbased and international artists, scientists, and VR producers who are passionate about sharing their knowledge of virtual worlds – a request often made to the founders in recent years.

The course offer provides an opportunity for people to experience VR technology in a physical space and to understand the associated hardware and software. Thus, the Berlin School of VR aims to increase 'VR literacy' – an understanding of how to navigate virtual worlds in virtual bodies and to safely experience the metaverse – thus helping to prevent harassment and privacy or security breaches.

Key activities and offer

The Berlin School of VR offers a variety of courses aimed at teaching skills in virtual reality. As the 'school' in the organisation's name suggests, the focus of the courses is on foundational concepts and skills, rather than more advanced VR development or programming skills.

The courses are practice-orientated and include presentations on the concepts of VR, looking at the past, present and future. Participants learn how to use VR headsets and VR apps and how to connect with other users in VR. They also help participants understand possible www.britishcouncil.org/research-insight



Instructor Konstantin Bez using VR technology as part of a crash course on Virtual Reality delivered by the Berlin School of VR. © Katharina Haverich

applications of VR, for instance, the use of VR in training activities delivered by companies (e.g. conflict management, unconscious bias training, etc.) or community organisations (e.g. first aid training).

The Berlin School of VR works with a range of participants and clients, including cultural institutions, private companies, artists with disabilities (including hearing impairment), young people in rural areas, older people, interdisciplinary groups at conferences etc.

Community and outreach activities

The Berlin School of VR has delivered a number of outreach activities, including free courses for local libraries, youth groups and for community colleges. The organisation has not defined specific target groups. According to Katharina Haverich: *"We work with all people. There are no big differences. It's something new for everyone. People are interested in headsets and want to keep using them. The basics of VR can be understood by all and everyone using it should have some training with the technology."*

However, there is potential to use VR training in projects that are aimed at social inclusion. Katharina Haverich has already led a project that used VR to confront antisemitism, and she sees potential opportunities in using VR to teach 'future skills' to people from various backgrounds, including those with a refugee or migrant background.

Business model and funding

The Berlin School of VR is currently supported by the Berlin Senate through a startup funding initiative aimed at increasing the digitisation of the cultural sector. The funding will run until February 2025. The organisation has few fixed costs based on a commitment to the principle of a shared economy. According to the founder, *"everything is rented, even the technology – we always rent the latest hardware."*

The long-term business model and value proposition for the school is still in development, but it is hoped that it would involve a mix of paying customers (e.g. higher paid courses for private companies) and a free or subsidised offer for adult education centres, youth groups, libraries etc. The legal structure and governance model of the organisation is also yet to be decided and might include the creation of a limited company or a charity, or as subsidiary of a new media partner organisation.

2.3.4 Agencies or initiatives that support the sector

Agencies or initiatives that support the sector here include organisations or umbrella bodies that support the creative tech sector and its organisations through e.g., funding, promotion, networking, etc., and which in this context make special reference to supporting advanced screen-based technologies.

Among these, some are publicly funded, of which several focus on particular geographical locations. Others are member-based organisations, several of which focus in particular on the games industry.

Table 6: Agencies/ initiatives that support the sector

Agencies/ initiatives identified	Location	Bundesland
Publicly funded		
Next Mannheim	Mannheim	Baden-Württemberg
EMIL	Stuttgart	Baden-Württemberg
Cluster IKT	Berlin	Berlin
Creative City Berlin	Berlin	Berlin
Medienboard Berlin-Brandenburg	Potsdam	Brandenburg
Spielfabrique	Düsseldorf	Nordrhein-Westfalen
Member-based		
Games Ba-Wü	Baden- Württemberg	Baden-Württemberg
Animation Media Creators (AMCRS)	Stuttgart	Baden-Württemberg
Medianet berlinbrandenburg	Berlin	Berlin
Extended Reality Berlin-Brandenburg (XEBB)	Potsdam	Brandenburg
nextReality.Hamburg	Hamburg	Hamburg
Games & XR Mitteldeutschland	Leipzig	Sachsen

Case Study: Extended Reality Berlin-Brandenburg e.V. (XRBB), Potsdam, Berlin und Brandenburg

Based on an interview with XRBB's MD, Finn Kortenbrede.

Introduction

Founded in 2016, XRBB is an association with focuses on supporting the region's socioeconomic development through strengthening the "structural importance of XR technologies for the region". With a focus that straddles both the cultural scene and industry, its key aim lies in developing a strong regional network and supporting cross-sector dialogues in order to "make the potential of XR technologies available to society as a whole".

The association is led by a small team and supported by an advisory board.

Key activities and offer

XRBB runs a non-profit network of organisations that has been steadily rising since its inception and now includes 90 members. Comprising of freelances as well as representatives of smaller and larger companies from the fields of research, visual and performing art, film production, tech, academia to large international tech communications businesses such as Meta, the membership highlights the "diversity of the XR sector", says Finn Kortenbrede. www.britishcouncil.org/research-insight 30 To support their members, XRBB runs regular network events, which have focused on internal networking and community building and more recently on cross-sector networking on the basis of XR technologies. It runs around 40 online and live events each year and circulates a

newsletter to members which provides information on additional external events. One regular event included the Digital Dip XR series, run together with Cluster ICT. The goal was to bring together XR players in the region to present and discuss current topics, with each event focusing on a specific theme. As such, the series supported the cross-sector exchange of ideas between developers and users in the fields of VR, AR and XR. Other regular events included ART + TECH TALKS, which brought together artists, creative professionals and tech experts to discuss "the future of visual art, performative art and music in the age of digitalisation."



XRBB's regular ART + TECH TALKS, a space to discuss "the future of virtual art, performative art and music in the age of digitalisation" © XRBB

XRBB also aims to lobby for further standardisations in the sector as well as contributes to research projects, an area it is keen to further expand. It is currently involved in *XReco*, a Horizon Europe Innovation Project co-financed by the European Commission, together with 20 partners from 12 countries, which aims to *"pave the way for lifting the use of XR media content [...] to being regularly integrated in the media industry".*

In their work *"to reach new audiences and bring to the fore the potential of XR",* XRBB collaborates with a range of other institutions, networks and partners – these for example include the Frauenhofer Heinrich-Hertz Institute, Wirtschaftsförderung Berlin Brandenburg, XR Hub Bavaria, Medienboard Berlin-Brandenburg and several partners at European level, including XR4Europe and the Goethe-Institut.

Community and outreach activities

Whilst XRBB sees itself as "a reflection point for the public to get introduced to this immersive technology revolution as well as to discuss its risks and benefits", Kortenbrede highlights that with a primary focus on B2Bm limited resources to date have meant a need to focus on businesses and professionals, rather than providing offers for the general public. However, in this context, they are "quite widely located" – one example of the breadth of their work is their work to bring together film makers on the subject of XR during the Venice Film Festival.

Moreover, the association is continuing to consider what kind of offers for the public could be introduced – it is for example considering the idea of a festival in Berlin together with a partner "for all those interested in working in the sector".

Business model and funding

XRBB is funded by the Wirtschaftsförderung Berlin Brandenburg. In addition, membership currently comes with a small fee although events are currently free of charge. However, this

may have to change going forward as there is uncertainty about future funding once the current funding cycle ends.

2.3.5 Informal digital networks

Informal digital networks are here understood as loose digital networks or communities, rather than official membership bodies, that focus on supporting those working with advanced screenbased technologies through bringing together professionals and supporting peer-to-peer learning.

Table 7: Informal digital networks

Networks identified	Location	Bundesland
GameDev Regensburg	Regensburg	Bayern
VR BLN	Berlin	Berlin
Beat Em Hub	Berlin	Berlin
Game Dev Saar	Saarbrücken	Saarland

2.3.6 Conferences, summits, festivals, discourse

This type of creative tech hub takes the shape of events such as conferences, summits or festivals, which take place regularly (e.g., annually) and during that time provide a physical space for interaction. Whilst primarily aimed at a professional audience, some provide some offers designed to engage a broader audience.

Among these hubs, some focus in particular on digital innovation with a reference to creative technology, whilst others focus on the intersection between art (in various forms) and technology, including advanced screen-based technologies.

Table 9: Conferences, summits, festivals, discourse

Conferences, summits, festivals, discourses identified	Location	Bundesland
With a focus on digital innovation		
Berlin Creative Tech Summit	Berlin	Berlin
MTH Conference	Potsdam	Brandenburg
Republica	Hamburg	Hamburg
Maker Faire	Hannover (and other locations)	Niedersachsen
Places Festival	Gelsenkirchen	Nordrhein-Westfalen

With a focus on culture and tech		
FMX – Film & Media Exchange	Stuttgart	Baden-Württemberg
Transmediale Berlin	Berlin	Berlin
A MAZE./ Berlin	Berlin	Berlin
Dive	Bochum	Nordrhein-Westfalen
Art@tech	Köln	Nordrhein-Westfalen
Next Level	Dortmund	Nordrhein-Westfalen
DOK Leipzig + DOK Neuland + DOK Exchange XR	Leipzig	Sachsen

2.3.7 Academic interdisciplinary research institutions and programmes offering varying degrees of public interface

These are centres run by universities or located at universities, which focus on research and skills development in the creative tech fields, including advanced screen-based technologies. Whilst primarily focused on working with or supporting students and professionals, they offer some degree of public interface in the shape of different formats, such as e.g., workshops, lectures, or advice services.

Table 10: Academic institutes and programmes

Academic institutes and programmes identified	Location	Bundesland
DE:HIVE	Berlin	Berlin
Motion Bank	Frankfurt am Main	Hessen
KreativInstitut.OWL	Detmold	Nordrhein-Westfalen
Interdisziplinäres Labor für Immersionsforschung	Kiel	Schleswig-Holstein
Digital Bauhaus Lab	Weimar	Thüringen

3. The migrant situation in Germany and relevant identified support organisations

3.1 A short introduction to the current migrant situation in Germany

Migrants in Germany

In 2023, of the around 84m inhabitants of Germany, around 25m inhabitants (29.7%) had a migration background, i.e. including those who immigrated to Germany and their descendants. Of these, roughly half have German citizenship.

Whilst spread across Germany, people with migrant background are most strongly located in West Germany and Berlin, with almost 25% living in North Rhine-Westphalia. Compared to the population within each Bundesland, the proportion of migrants was highest in Bremen, Hamburg and Berlin (40-44%). Overall, West Germany and Berlin have a 33% proportion of inhabitants with migrant background, whilst by comparison, East Germany has a considerably smaller proportion of inhabitants with migrant background of only around 11.4%. Almost 59% of those with migrant backgrounds lived in urban areas.

Noticeably, a significant proportion of the 25m inhabitants in Germany with migration background – around 16m or 64.5% – are first generation migrants, highlighting the considerable increase in migrants to Germany in recent years. Whilst Germany has experienced significant fluctuations in migrant arrivals over the past decade, influenced by various global events and policy changes, it currently remains the top priority target country for migrants in Europe. In recent years, key migration influxes were seen during the 'Refugee Crisis' of 2015-16, when over a million migrants entered Germany in 2015, in particular from Syria. Following subsequent annual reductions in annual incoming migrants, in particular during the Covid pandemic in 2020, numbers increased again in 2022 following the beginning of the war in Ukraine. This resulted in the largest refugee movement in Europe since the end of the Second World War, with over 1 million refugees coming from Ukraine to Germany, a quadrupling of net migration compared to 2021 and the highest annual figure on record since 1950.¹⁶ It is important to note here that there are a wide range of different legal statuses, economic positions, educational backgrounds, and levels of cultural and social capital between different migrants in Germany. For instance, asylum seekers coming to Germany for humanitarian reasons have very different starting points from migrants coming to Germany on a study visa or on a visa for skilled professionals. The most recent official migration report for 2023 found that the number of asylum seekers in Germany had increased compared to 2022, whilst the number of those coming to study or work in Germany had slightly decreased. Ukrainians who came to the EU to flee the war were able to apply for an initial two years of

Bundeszentrale für politische Bildung, kurz und knapp, Bevölkerugn mit Mirationshintergrund: https://www.bpb.de/kurzknapp/zahlen-und-fakten/soziale-situation-in-deutschland/61646/bevoelkerung-mit-migrationshintergrund/ Bundesamt für Migration und Flüchtlingen, Migrationsberichte seit 2004

https://www.bamf.de/SharedDocs/ProjekteReportagen/DE/Forschung/Migration/migrationsbericht.html www.britishcouncil.org/research-insight

¹⁶ Sources for this section:

temporary protection including a residence and work permit (currently valid until March 2026)¹⁷. Whether or not migrants have the right to work, have personal financial support, or are able to speak the German language, greatly impacts on their ability to engage in social and economic life in Germany.

Political and societal response

In this context of increased migration over the past decade, the German government has aimed to create new support packages both geared at migrants as well as all others within German society who suffer socio-economic disadvantages, aiming for a *"pragmatic compass of humanity and order"* with the goal of ensuring that, *"nobody is played off against each other"*. In the words of the federal government, this statement is expressly targeted at countering the *"business of populists, which we are firmly opposed to"*.¹⁸

Whilst research in 2024 showed that a majority of surveyed people in Germany continue to believe that migrants and refugees to Germany are welcomed by public institutions and the population, this statement by the federal government comes in a context of increased unease about immigration in Germany in 2024. Research showed a strong increase in respondents believing that migrants resulted both in additional burdens on the welfare state as well as conflict between locals and immigrants, with many worried about increased costs for social services, housing shortages, problems for example in schools and security concerns due to terrorism. Although respondents also continued to see benefits and opportunities arising from migration to Germany, such as bringing in a younger labour force, attracting international companies and making life in Germany more interesting, this has decreased since 2021.¹⁹

As the federal government's statement indicates, this increased unease has given rise to growing support for far-right extremist politics, in particular via support for the new right-wing populist part AfD (Alternative für Deutschland) in recent years. Founded in 2013 as an EU-sceptical, liberal party, it has rapidly gained popularity, becoming the third strongest party with 12.6% of votes following elections in 2017. Since 2021, it is the fifth strongest party in the German Bundestag and has publicly embraced the terms 'remigration' or 'repatriation', taken to mean the mass deportation of people with a migrant background. The AFD is particularly popular in Eastern Germany, reaching around twice the proportion of votes as in the West.²⁰ In the most recent federal elections in February 2025, the AfD became the strongest party in all five Bundesländer, with migration seen as key reason for voters' choosing to vote for the party.²¹

¹⁷ <u>https://www.bmas.de/DE/Europa-und-die-Welt/Europa/Ukraine/FAQ-DE/faq-art-de.html;</u>

https://www.ihk.de/schwerin/international/spezial-russland-ukraine-krieg/hinweise-fuer-aus-der-ukraine-ankommende/rechtliche-lage-fuer-ukrainer-in-deutschland-5442862

¹⁸ Bundesregierung, *Fakten zur Migrationspolitik der Bundesregierung*, 2024 (https://www.bundesregierung.de/bregde/aktuelles/fakten-migrationspolitik-2189208)

¹⁹ BertelsmannStiftung, 2024, *Migrationsskepsis steigt*, Offenheit für zugewanderete Menschen bliebt dennoch stabil, https://www.bertelsmann-stiftung.de/de/themen/aktuelle-meldungen/2024/maerz/migrationsskepsis-steigt-offenheit-fuerzugewanderte-menschen-bleibt-dennoch-stabil

²⁰ Bundeszentrale für politische Bildung, Wahlergenisse und Wählerschaft der AfD, 2022

⁽https://www.bpb.de/themen/parteien/parteien-in-deutschland/afd/273131/wahlergebnisse-und-waehlerschaft-der-afd/) ²¹ https://www.zdf.de/nachrichten/politik/deutschland/afd-wahlergebnisse-bundestagswahl-2025-100.html,

https://www.tagesschau.de/inland/bundestagswahl/bundestagswahl-analyse-104.html

3.2. Mapping of relevant migrant organisations

The mapping of migrant support organisations as part of this research did not seek out to provide a comprehensive list of all migrant support organisations in Germany. Instead, it focused on identifying organisations in the field, which may provide services that in some shape or form relate to the fields of creative technology/digital/new media. In doing so, we identified four different types of services relevant to this research:

- General migrant support
- Skills development of migrants in computing/ digital technology
- Entrepreneurship and startup support
- Employment integration

In total, we identified 27 organisations across Germany, which provided one or more of the above services. Of the organisations, we found 11 that provided general migrant support, nine that provided relevant skills development offers, seven that provide entrepreneurship support and likewise seven that provide employment integration support. A full list is provided in Table 11 below, followed by short sections providing further detail on each of these services.

Organisation	Bundesland	General support	Skills development	Entrepre- neurship support	Employment integration support
Migrafika	Nordrhein- Westfalen	х		Х	
Forum der Kulturen	Baden- Württemberg	х			
Freiwilligen Agentur Halle-Saale	Sachsen-Anhalt	х			
Migration macht Gesellschaft e.V.	Bayern	х			
ZEIK Zentrum fuer empowerment und interkulturelle Kreativitaet	Schleswig- Holstein	x	Х		
Stephanus gGmbH Migrationsberatung	Berlin und Brandenburg	х			
Verein MeineWelt	Baden- Württemberg	х			
major NGO players like German Red Cross, Diakonie or AWO	nationally	X			

Table 11: Identified migrant organisations and the services offered

KUBI Gesellschaft für Kultur und Bildung gGmbH	Hessen	х	Х		х
ReDI School of Digital Integration	nationally		Х		
Digital Career Institute	nationally		х		х
Akademie für Kommunikation & Integration	Baden- Württemberg		Х		Х
BIN Berufliche Integration	Hamburg		Х		Х
FLAKS e.	Hamburg		х		
BBQ Bildung und Berufliche Qualifizierung GmbH	Baden- Württemberg, Rheinland-Pfalz, Saarland		Х		
MigrisX	Saarland			х	
Start Ab, NRW	Nordrhein- Westfalen			х	
Bundesverband deutscher Startups	nationally			х	
Gründungsstipendium NRW	Nordrhein- Westfalen			х	
Migrapreneur	Berlin und Brandenburg			х	
Start-up Migrants	nationally			Х	
Berami berufliche Integration e.V	Hessen				Х
NIFA – Netzwerk zur Integration von Flüchtlingen in Arbeit	Baden- Württemberg				Х
Weser - Ems Perspektiven e.V./FrauenSTÄRKEN	Bremen				х
Kolping Bildungswerk e.V.:	Baden- Württemberg		Х		

Shahrzad e.V.	Nordrhein- Westfalen	Х		
BIWOC Rising	Berlin und Brandenburg	Х		

3.2.1 General migrant support services

Organisations providing general migrant support include major NGOs that work (inter)nationally (e.g. German Red Cross, Diakonie, Arbeiterwohlfahrt (AWO)), as well as a number of regional or local agencies (e.g. Migrafika Koelln, Migration macht Gesellschaft e.V. München, Stephanus gGmbH Migrationsberatung Prignitz, etc).

Support provided by these organisations includes:

- Asylum and legal assistance (e.g. guidance for asylum seekers on legal processes, rights; advice on residence and asylum law)
- Language and 'cultural integration' support (e.g. German language classes, and courses helping migrants to familiarise themselves with local culture and systems)
- Networking and community engagement (e.g. welcome meetings and community activities facilitating connections between migrants, local population and organisations)
- Cultural exchange (activities that promote knowledge-sharing and intercultural understanding)
- Media and advocacy (e.g. opportunities for content creation through podcasts, videos, and reels to amplify migrant voices and stories)
- Tailored support for specific migrant groups (e.g. for refugees with a disability, young migrants, etc.)

An example of such an organisation is the Freiwilligen Agentur Halle-Saale. The organisation offers a range of general services for migrants and recent refugees. This includes 'Welcome Treff', an initiative that offers opportunities for migrants to meet and receive support by local volunteers, for instance, help with filling forms, a women's cafe, afternoons for social activities such as board games, cooking and sewing, as well as support with learning German. The organisation also 1-2-1 mentorships ('Ankommenspatenschaften'), facilitating a series of meetings and joint activities between paired migrants and locals, and supports voluntary placements. The organisation also organises a 'Women Art Festival', a festival and open platform for women with and without migration experience to get to know each other, experience art and culture, and help to create a 'transcultural women's art festival' in Halle that celebrates diversity and creativity of women.

3.2.2 Skills development activities

Organisations in this category include a smaller number of organisations that work nationally (e.g. Digital Career Institute, ReDI School of Integration) alongside local organisations focussing

on skills development and training activities (e.g. Akademie für Kommunikation und Integration Öhringen, KUBI Gesellschaft für Kultur und Bildung gGmbH, ZEIK Zentrum für Empowerment und Interkulturelle Kreativität Kiel, BIN Berufliche Integration Hamburg, etc.)

The support provided by these organisations includes counselling and advice on (further) education opportunities, courses and training supporting the development of vocational skills (sales, office management, logistics, social care, etc.), advanced training for professional skills (e.g., in mathematics, teaching) and digital/IT skills.

With regards to digital/IT skills, organisations provide:

- Basic IT skills: most migrant support organisations provide training on basic IT skills (e.g. general computer literacy, including PC and internet courses, specifically for migrant women)
- Training on applying digital skills (e.g., digital data management, data protection, organising digital information, agile teamwork, and effective collaboration, digital sales courses)
- Programming and development: some organisations provide specialist skills training in programming languages (such as Java, Python); software, web or database development; or cloud engineering
- Advanced technical skills, such as machine learning & AI courses

For instance, the ReDI School of Integration is a tech school that provides access to free digital education to migrants and refugees (with English language knowledge). Since 2016, the organisation offers a variety of courses: from Computer Basics to more advanced tech courses (including programming languages, data analytics, machine learning & AI). At present, no courses are offered with a focus on advanced screen-based technologies. Part-time courses are taught by volunteer tech and industry experts. The organisation has centres across Germany, including Berlin, Munich, Hamburg and NRW. Most course participants are refugees from Afghanistan and Syria, as well as – increasingly – from Ukraine and Iran.

3.2.3 Employment support

Many of the organisations that provide skills development services also offer employment support to migrants (e.g., Digital Career Institute, Akademie für Kommunikation und Integration Öhringen, KUBI Gesellschaft für Kultur und Bildung gGmbH, BIN Berufliche Integration Hamburg), although some others specifically focus on supporting the integration of refugees into the work place (e.g. Netzwerk zur Integration von Flüchtlingen in Arbeit (NIFA) working across the region of Baden-Württemberg, Weser - Ems Perspektiven e.V./FrauenSTÄRKEN in Bremerhaven and Kolping Bildungswerk e.V. working across a number of locations in Baden-Württemberg).

Support provided in this area includes:

- Career Advice (e.g. career planning, and counselling, especially for women with a migration background and for young migrants)
- Professional Training & Coaching (e.g., courses on job applications, interviews, presentations, and workplace etiquette)

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- Job Listings & Placement (Connecting job seekers with employment opportunities)
- Transfer of qualifications (Supporting migrants in the process of getting professional qualifications and certificates recognised in Germany)

BIN Berufliche Integration in Hamburg is an example of an organisation that provides career advice and support to migrants in developing employability skills. This includes individual advice to help with career planning, identifying suitable job or placement opportunities, getting professional qualifications recognised, review of application documents, coaching for job interviews and personal support. BIN also provides courses to support integration into specific sectors (e.g. on cultural sensitivities in the care and health sector; health & safety and hygiene standards in the Food and Beverages industry; specialist language courses for medical vocabulary; etc.) 90% of the participants are refugees from war zones, but BIN focuses its efforts on migrants who have a completed degree and a certain level of German language skills. The organisation is funded through a range of sources, including donations, federal and state grants, lottery funding, and grants from foundations and other nonprofit organisations.

3.2.4 Entrepreneurship support

A smaller number of organisations provide entrepreneurship and startup support specifically targeted at migrant groups, among them some national initiatives/organisations (such as Bundesverband Deutscher Startups and Start-Ups Migrants) and more regional (Migris X Saarland, Gründungsstipendium NRW, Start.AB NRW) and local offers (e.g. Migrapreneur Berlin, Migrafrika Köln). In this context, recent research has highlighted the high proportion of business founders among migrants in Germany and as such the *"important part [they play in] Germany's startup ecosystem"*. The research found that founders with a migrant background represented 21% of all founders, 58% of which were born outside Germany. The majority of these founders with migrant background had a high education status, with 75% having "a *university degree and ambitious plans for developing and growing their startup"*.²²

Support provided by these organisations includes:

- Information and advice (e.g., providing advice on qualifications and skills required for starting a business; startup advice for migrants at university students focusing on tech and business courses)
- Entrepreneurship skills support (e.g., hands-on training and pro-bono consultancy to support migrant business entrepreneurs).
- Networking opportunities (e.g., facilitating partnerships and professional networks for migrants to connect with resources and experts, or platforms and events to meet other migrant entrepreneurs).
- Research and insights (e.g. commissioning of research and studies into start up founders with migration background).

²² <u>MigrantFoundersMonitor2023_EnglishVersion.pdf</u> www.britishcouncil.org/research-insight

- Support with business administration and bureaucracy (e.g., helping migrants to navigate and simplify the legal and administrative processes required to create and manage a business)
- Workspace (e.g. providing spaces for collaboration and work for migrants)

For example, Start.AB NRW was founded in 2022 to support people with a migrant background and refugees in the realisation of their business ideas and foundation of startups. Start AB formed initially part of the Centre for Turkish Studies and Integration Research with a focus on research (e.g. on motivations of migrant startup founders) and dissemination of insights. The project is now run by Farida Global Organisation, funded through the North-Rhine Westfalia Regional Government, with a greater emphasis on practical advice and information. In particular, Start AB provides information that is tailored to migrant founders about starting a business, as well offering individual advice sessions. The project targets people with a migration history and refugees, especially from Turkey, Syria, Ukraine, Serbia and various African countries. Most participants are under 35 years old, although the average age is rising.

4. Creative tech – a vehicle to support migrants in Germany?

In a 'Handbook on Culture for Inclusion' for the Assembly of European Regions (AER) written in the wake of the 2015 Refugee Crisis, its author, president of the sub-committee on culture for AER, Nina Björberg, highlighted the value of culture and cultural activities, institutions and methods as, "one of the world's best tools to create inclusion in society". As forms of expression that "transcend geographic boundaries", the author highlighted cultural forms such as music, dance, theatre, food and art as, "a way to make people feel included, not just integrated". 23 Similarly, a 2018 report on the role of cultural organisations in the inclusion of migrants and refugees supported by the Calouste Gulbenkian Foundation highlighted the belief amongst professionals in the cultural sector regarding, "the power of culture to transform lives, sharing knowledge; promoting inclusion, dialogue, tolerance and respect' and contributing to social cohesion". As an example of work to support such aims, the report includes the German Museum Association's manual 'Museums, migration and cultural diversity: recommendations for museums' by the Network of European Museum Organisations, which highlights the potential of museums to support a, "new understanding of the past and the present, culture and the environment, and much more besides" – and as such, the active role they can play in addressing the social challenges arising from increased social diversity.²⁴

In the context of i) increased levels of migration in Germany and resulting societal challenges such as the rise of far-right politics, ii) the value of cultural forms in addressing such issues, and iii) the rising prominence of advanced screen-based technologies as a key element of cultural expression, the following chapter thus considers the potential, challenges and opportunities of working with creative tech hubs and advanced screen-based technologies to support migrant inclusion in Germany.

To do so, it brings together the views and comments from interviews with creative tech hubs and migrant organisations undertaken as part of this research.

4.1 Views on the current state of the creative tech sector

Before looking at opportunities for the sector to support migrants, it is worth briefly considering the views expressed by the sector on the current state and development of the creative tech sector itself, in terms of the challenges and opportunities it is currently facing, as this informs the context in which any support for migrants may take place.

All those we spoke to recognised a **clear value in the use of advanced screen-based technologies and resulting AR/VR/XR applications**. In particular, their cross-sector application was highlighted, including for the arts and cultural sector, or to create social experiences. Reflecting this, all interviewees were able to point to individual institutions or

²⁴ Vlachou, M. et al, *The Inclusion of Migrants and Refugees: The Role of Cultural Organisations*, <u>https://migrant-integration.ec.europa.eu/sites/default/files/2017-06/Access-Culture-migrants-refugees.pdf</u> WWW.britishcouncil.org/research-insight

²³ Assembly of European Regions, Björberg, N., *Handbook on Culture for Inclusion*: <u>https://aer.eu/wp-content/uploads/2018/03/Handbook-on-Culture-for-Inclusion-1-2.pdf</u>

individuals making use of these technologies for a variety of purposes, including several who referenced cultural and arts institutions or professionals engaging with the technology. Despite this, most interviewees at the same time highlighted what they saw as Germany 'lagging behind' with regard to the advancements and sophistication of both technological development and the creative industries. Related to this, they also reported what they perceive to be an **ongoing lack of professionalisation and significant skills shortages in the field**. Connected to this, interviewees also highlighted more widely a lack of public understanding and awareness of the potential uses of such technologies.

Some interviewees connected this with a lack of appetite for innovation – one for example expressed the view that whilst cultural institutions invested in digital offers during the COVID-19 pandemic, it was because this was the only way to continue, *"they were ultimately just waiting for restrictions to ease and for things to go back to normal"*. Likewise, another interviewee referenced the film sector finding that, *"storytellers are still focused on film, so strong emotional storytelling in XR is still missing"*. However, it was also raised that this this situation was also due to simply a lack of opportunities to gain the required skills and understanding to-date. As an illustration of this, two separate interviewees both highlighted examples of cultural institutions that had been supported in buying the necessary hardware to provide immersive experiences, yet they did not have the expertise required to exploit this hardware and therefore, *"now those things just lie there"*. Even where training courses are now available (a new apprenticeship has for example been introduced)²⁵, one interviewee pointed out that many of those working in the creative industries are freelancers, making it more challenging for them to access the continued professional development they need.

In this context, one interviewee projected that the 'metaverse' will significantly increase in value and that this is making it even more important to ensure that not only professionals, but also the broader public, understand how to 'conduct' themselves in the virtual world: *"this makes it even more important to develop more technology and VR literacy"*.

Looking forwards, interaction across various economic sectors was considered by many interviewees as valuable for the ongoing development of these technologies, given their wide-ranging potential applications, and as such, the potential for cross-sector activity (e.g., art/ tech/ business) to promote innovation and creativity. One interviewee, for example, highlighted the value of cross-innovation between art and tech to the advancement of both, but also to create new socially valuable outputs. Likewise, another interviewee pointed to cross-sector innovation as being able to address social issues. However, it was also highlighted that cross-sector work requires a relatively high degree of planning, resources and targeted aims to ensure that it addresses the needs of all.

4.2 Creative tech hubs' current public engagement work

Creative tech hub's views on EDI

Further, it is useful in setting the context to consider briefly interviewees' views on the wider subject of equality, diversity and inclusion. **All those we spoke to saw inclusion as an**

²⁵ Ausbildung als Gestalter:in für immersive Medien, established in August 2023 www.britishcouncil.org/research-insight

important and current subject, and as a value that reflects modern society and the upholding of core democratic values – in terms of inclusion within the workforce and in terms of their audiences they engage with. In particular, those coming from the cultural sector highlighted the importance of providing diversity within their programming to reflect society around them – e.g., by bringing in international artists or artworks/ artists from different ethnic backgrounds. As one interviewee said:

"We try to engage in many cooperations to bring together different worlds. [...] We don't have a quota to work with diverse artists, but always the aim, to work in a way that is appropriate to the city".

This is done in the context of considering how the organisations present themselves to their (potential) audiences, recognising that, *"who we invite, who we show...[makes us] more attractive"* for a variety of audiences, including those with migrant backgrounds. Others also pointed to the value of diversity more broadly, as a way to bring in new ideas and ways of thinking, thereby contributing to quality, development and innovation in the cultural sector as well as in other sectors of the economy.

Nevertheless, one interviewee also highlighted what he saw as a regression in the diversity of the cultural landscape, and of the telling of diverse stories, for example in the film sector, due to what he saw as an 'increased predominance of the mainstream market'. He therefore felt that *"it is hugely important to hear these [diverse] stories, [...] to let actors tell their stories. We need to fight to restore this, in particular, in the context of people with different backgrounds being able to see their own stories, understand their developments. The creative sector can provide that but is challenged by the mainstream market. It needs policy support."*

Finally, it is important to highlight that inclusion was generally seen as wider than a focus on ethnic diversity alone – several interviewees, for example, mentioned the potential of immersive technologies in the context of improving the inclusion of people with disabilities or mental health challenges.

Creative tech hubs' current community work

Reflecting this wider understanding of inclusion, all of the interviewed organisations reported taking an approach that aims to be 'open and accessible' to everyone, rather than focusing on working with particular target groups.

In terms of undertaking any community work within this context, a clear difference could be identified between those creative tech hubs situated more within the cultural sector, and those situated more in the tech and business world. Whilst differing in size and remit, all of the former organisations ran some form of community engagement activity or programme aimed at engaging a variety of (local) communities, based on their understanding of the importance of building new audiences for creative work, and recognising their 'democratic task' to engage the whole of society, including migrants.²⁶

²⁶ It is worth noting that some here pointed to the strong variations in migrant demographics across Germany, with some regions home to considerably higher proportions of ethnically diverse populations than others.
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"There is a role for cultural institutions, to create an environment where you can engage, be inclusive, share. Meet others."

ZKM for example reported undertaking projects with local Korean and Turkish communities, as well as delivering projects in more deprived areas of town. As a large local organisation, this work is supported by an outreach team, whilst ZKM also runs an education programme to engage local schools. Likewise, HAU's work with diverse communities in Berlin is supported by an outreach team and focuses strongly on engaging via a wide range of existing community organisations.

Mir.LAB meanwhile, situated in a city with a high level of socio-economic deprivation and high migration levels, was expressly set up with the aim to engage with, and find a new audience for, the main theatre. As such, it is working with local Turkish, Syrian and Sinti and Roma communities. As Director Nora Krahl explained, "it is our task to go out into the town and see how we can get into contact with other communities". At ZIMMT, whilst a lack of resources meant that the organisation itself was not currently able to run a full outreach programme, individual directors were engaging with community work and director Jakob Gruhl expressed a hope that they would be able to do more at ZIMMT itself, depending on the availability of resources.

On the other hand, those creative tech hubs interviewed that are located more on the business and tech side did not run community outreach programmes to the same extent. Whilst all highlighted being in principle open to all, driving diversity was not specifically an organisational goal, and though they would be keen to do more, limited resources meant that other work takes precedence. However, among these organisations, too, a difference could be observed among those that might be loosely categorised as 'tech-focused social enterprises', and more business-focused organisations. Among interviewees, COCONAT and Berlin School of VR may be described as social enterprises, with both seeing themselves as social value-driven organisations. Both have public funding streams through which they deliver community and outreach work, as well as profit-making services for private companies.

Amongst the more business-focused organisations - such as XR HUB Bavaria, Extended Reality BB and Dock 11 – some expressed a sole focus on business support, whilst others also recognised themselves as having a public remit, though were currently doing little in this area themselves. The focus of these organisations' work lay firmly on supporting local businesses and economies through targeted B2B work. Whilst receiving public funding, this tended to come from economic development grants, rather than social or cultural funds. In this context, they were open to all (in their target market), promoting accessibility through free or low-cost activity, but without any specific activity to increase diversity or engagement from any particular target groups. Where they did offer any (occasional) public interaction - e.g., XR Bavaria working with 'multipliers' (e.g., public institutions such as libraries) who could then themselves provide workshops for the public - this again was targeted at the broad population with the idea of 'raising general understanding' of the technologies.

Whilst focusing primarily on business support, some however mentioned interest in providing more public events, or to design and run programmes for key target groups, should resources be available. The extent of interest in this varied, depending on the organisation's key purpose, with some clearly being closer to potentially engaging more with the www.britishcouncil.org/research-insight

public than others. Dock11, for example, did not see general public engagement and outreach activity as supporting their primary purpose and felt that whilst they aim to support the development of creative outputs for diverse audiences, the services they offered were in effect too complex to themselves actively promote integration. Others, such as XR Bavaria and Extended Reality BB, expressed some interest in this, alongside their core focus on B2B services, as part of their wider remit to expand awareness and understanding regarding these technologies. As the latter's MD Silke Schmidt said: *"supporting offers to extend general access [to these technologies] is our task. Perhaps in the framework of a support programme together with institutional organisations, that would be great".* Similarly, Berlin School of VR – set up with the purpose to inform people and train them in the use of these technologies at a more 'foundational level' – expressed interest in developing a programme specifically for migrant groups, should resources be available.

4.3 Views on creative tech in the context of public engagement with migrants

In discussing and considering the notion of creative tech hubs and advanced screen-based technologies in supporting the inclusion and integration of migrants in Germany, interviewees reflected on different aspects or types of engagement. This ranged from supporting mutual understanding through engaging with such technologies, to promoting the self-expression of migrants and their ability to 'tell their own stories' using these technologies, to supporting integration into the German society, economy and (creative tech) workforce. The below sections consider these various points.

4.3.1 Potential opportunities and benefits in using creative tech to support inclusion, understanding and self-expression

Encouragingly, all interviewees felt that *in theory*, advanced screen-based technologies and their use to create digital, immersive stories and worlds could play a valuable role in supporting migrants to feel included, be able to express themselves and their cultures, and become more integrated into German society. In considering this, interviewees mentioned a number of benefits and opportunities they saw in such potential applications:

Interviewees referenced the technology's potential to act as a medium to tell diverse stories, and as a way to create virtual spaces for (social) interaction and exchange. In this way, they could provide a route into, *"encouraging diversity and accessibility"*. This included the views from some migrant organisations, one of which for example highlighted the potential of creative tech as a cultural medium to give voice to marginalised groups. Though not specifically working with refugees, relevant examples here included those of MiR.LAB, who have engaged local Sinti and Roma communities to co-create musical projects with the use of accessible smartphone-based technologies during a local international film festival.²⁷ In another example, filmmaker, screenwriter and VR director

²⁷ https://rausgegangen.de/en/events/ake-dikhea-gelsenkirchen-balkan-beatz-meets-movienight-0/ www.britishcouncil.org/research-insight

Thom Vander Beken created a VR experience in collaboration with Afghan partners/ actors, which set viewers into the role of an immigration office case worker interviewing Afghan asylum seekers.²⁸

"It's about creating forms where we can help migrants to express themselves. Gaming is one way to do that. Game engines and technologies can be used to encourage diversity and accessibility."

- Some also noted the potential to recreate distant or lost worlds, thus supporting processes of collective cultural memory. For instance, a young Syrian and former student of the ReDI School of Integration has created a mixed reality application that helps to virtually 'reconstruct' the ancient Syrian city of Palmyra that was largely destroyed by the Islamic State in 2015. Drawing on an open-source database of 3D images of Palmyra, he created a detailed 3D model of the site that helps to experience the original site using mixed-reality glasses, as well as the destruction caused and its implications for physical reconstruction efforts.²⁹
- One interviewee also reflected on how these technologies could contribute to trauma management through providing 'spaces of protection', pointing to movements to consider XR in mental health care.³⁰ One interviewee for example referenced a VR installation by Syrian choreography Mey Seifan, *"How am I here"* (2023), which was based on interviews with refugees and looked at the dreams of refugees and traumatised people and their feelings surrounding a potential return to their home country. Virtual spaces allowed visitors to enter an audiovisual journey on the subject of these dreams.³¹
- Interviewees also remarked on the accessibility of such potential offers in terms of their availability within a digital space, and the way such forms of expression could transcend potential language barriers. XR Hub Bavaria, for example, spoke of currently developing a new virtual project with museums in Kenya, Ghana and South Africa on the subject of cultural heritage and joint understanding, noting how this medium helped to transcend language barriers and enabled mutual exchange without requiring visits.
- In particular, interviewees suggested immersive experiences as a way to appeal to or engage younger generations. This is relevant given the fact that younger age groups in Germany have a relatively higher proportion of people with migration background.³²

"Certainly. One could for example create meeting places or spaces of, where people with refugee background could create their places of origin, invite others – a virtual meeting place. Everything is possible, basically."

³² https://www.bpb.de/kurz-knapp/zahlen-und-fakten/soziale-situation-in-deutschland/150599/bevoelkerung-mit-migrationshintergrund-nach-alter/

²⁸ https://thomvanderbeken.com/2018/09/15/the-list-vr-documentary-in-development/

²⁹ https://original.1e9.community/t/wie-zaid-zaim-das-verlorene-palmyra-in-mixed-reality-wieder-aufbaut/4805; Open Source database New Palmyra: https://newpalmyra.org

³⁰ In June 2025, Mind XR, a conference on the subject of XR technology as a 'powerful approach for improving the treatment of mental disorders' is taking place (https://mindxr.info/).

³¹ <u>https://www.tanween.de/, https://filmfreeway.com/Howamlhere623</u>.

"In a virtual space, you can bring together cultures more easily. It makes the exchange easier, the mutual understanding. It's a different medium, one experiences it, it speaks to a younger audience. In an exhibition, everything is static, this is more lively and portable."

Interestingly, several interviewees remarked on the potential of these technologies in terms of being a '**new medium', which as such results in a certain element of equality** amongst all those confronted with these new technologies, which potentially makes them more accessible or interesting to a broader user group. As one said, *"creative tech has a significant potential to provide points of contact, independent of cultural background. We all stand equally in front of these technologies"*. Likewise, another remarked that, *"it is a new medium, it's not so biased yet, it doesn't in effect belong to anyone yet."* As an example, HAU's Curator Sarah Reihmann pointed here to games design, considering this as more diverse than a more traditional medium such as theatre, and also suggested that the organisation's digital offer, HAU4, tends to attract a more ethnically diverse audience than their more 'traditional' work on the main stage.

"Events in the virtual space – everyone can tune into those, the threshold [to participate] is not so big."

4.3.2. Current challenges to using creative tech in supporting migrant inclusion and self-expression

It is important to put into context how interviewees perceive the use of creative tech to support the inclusion of migrants in Germany. As summarised above, most could identify with the *potential* opportunities and benefits that this could bring, either through allowing migrants to tell their own stories and/or through supporting their integration into German society and the economy (see section 4.4). However, they also generally expressed opinions that could perhaps be summarised, as one interviewee said, as *"it's not first thing on my mind"*. Indeed, several suggested that other art forms are (as of now) more accessible to migrants, with creative tech a perhaps less suitable way through which to drive engagement. As one interviewee said: *"it is not the easiest way to express yourself, and not as immediate in the production. It's much more difficult than writing texts, singing, or similar"*.

"That this is explicitly a field for people who are new in the city, as entry point into the society, that I don't know. It is very specific."

This was felt to be the case in particular in considering more recent migrants and refugees, who some suggested would have other, more pressing, issues on their mind when having recently arrived in the country. As one interviewee said, *"it's not the first thing on my mind when you've recently arrived from Syria: 'how can I express myself' is just not the first thing on your mind. But for more settled cultural diversities, maybe it is more relevant"*. This viewpoint, as expressed by the creative tech hubs, was echoed by the migrant organisations interviewed. Only a small number responded at all to the request for an interview, and those we spoke to highlighted that their primary concerns focused on more fundamental conditions such as accessing rights to remain, housing, work and education.

In addition to these broad reflections, interviewees referenced a number of more specific current challenges that they felt may slow down or hinder the (current) use of such technologies as a medium to support migrant inclusion and self-expression:

Firstly, interviewees highlighted that the production of such immersive content requires expensive technologies such as LED volumes, 3D modelling software, etc. As one interviewee said: "I think it is difficult because it always requires instruments that cost money; that is a large hurdle". Interviews with creative tech hubs did suggest that more public institutions are now investing in such technologies. However, migrant organisations who voiced a theoretical interest to employ advanced screen-based technologies in the delivery of training also noted the cost of the technologies as the main barrier: "As an organisation we might be interested, but financially it's just not feasible." Another migrant organisation further suggested that bureaucracy and funding restrictions may inhibit innovation in this area in their sector. For example, they referenced conditions that can be placed on the use of public funds that might prevent them from investing in technology, such as XR headsets or software. Likewise, HAU highlighted challenges in getting funding for such technological artistic activities through general funding streams, beyond the availability of some 'special funding streams for this area', given that these digital projects require more time to develop and are "very expensive due to their technologies". However, this challenge may reduce going forward, with several interviewees remarking on the fact that many of the required technologies have in recent years become cheaper and are likely to continue becoming more accessible.

"I think there are opportunities to express yourself, many technologies have become significantly cheaper. I can imagine that there are possibilities of expression and possibilities to find stages via social media, which didn't previously exist."

"There is of course a democratisation of such technologies, everyone has a smartphone, maybe we will all have VR glasses at home in a couple of years. Reflects on their accessibility, if these technologies become easier and cheaper."

All interviewees moreover highlighted the considerable technical skills required to create
or produce outputs using advanced screen-based technologies (rather than simply to
consume products and experiences made possible by these technologies). The vast majority
of migrants (as well as people in general) do not possess these skills. One migrant
organisation, for example, highlighted the strong differences in existing education standards
among migrants, often finding a lack of even basic computer skills amongst some groups.
As a result, "the time is not enough, to engage with technologies that require a high level of
pre-existing knowledge". Likewise, another migrant organisation reflected that, "the technical
knowhow of the target group is often limited to social media and often goes no further."

"To express yourself, of course you first need to learn the technologies".

• As already seen above, whilst there are examples of individuals making use of these creative technologies in ways that relate to the question of integration and inclusion, when considering wider society, there is as yet a wider lack of awareness and **understanding around how these technologies could be used**: *"once the technologies are there, it*

requires an understanding and development of use cases". In this context, one interviewee suggested that many institutions had faced challenges and hurdles in recent years in actually using the instruments they had bought. However, again, some pointed out that use cases – i.e. examples of these technologies being used to develop creative immersive experiences – are increasing, citing for example museums using VR headsets. Increasing the number of these types of experiences, particularly in prominent organisations and public spaces, should contribute to raising awareness.

In this context, several creative tech hubs suggested that there were not yet enough professionals – i.e., including creatives, community workers or potential trainers – who have strong skills in using these technologies (and who could therefore even consider using them in collaboration with migrant groups). This was reflected in the interviews with migrant organisations, two of which reported feeling that they did not have the necessary skills to exploit any opportunities using such technologies (e.g., the delivery of training). As two interviewees pointed out:

"Those who lead such programmes need to have the skills to teach these technologies. At the moment, not even the education sector is that far advanced [...]. The approach at institutional level is still very rudimentary".

"In Germany we have a deficit in terms of digitisation, if you look at public institutions, the economy – there are such different levels. So that to consider using creative technologies to improve the togetherness and integration of migrant professionals – it is desirable, but first there is that general hurdle of digitisation in Germany. People in part don't even understand it."

However, whilst this was seen as a current challenge, interviewees did also mention movement in this area, citing the recent introduction of a new traineeship focusing on immersive media (Gestalter:in für immersive Medien) and the fact that more universities have started to engage with the subject. Also, some of the organisations interviewed themselves run 'train-the-trainer' programmes, targeted at providing training in a range of digital and creative technologies to what they call 'multiplicators', such as adult education institutions, community organisations, schools and libraries (e.g., XR Bavaria Hub, ZIMMT's co-founder Jakob Gruhl).

Finally, all interviewees also pointed to the fact that – even for those organisations that are motivated to do this kind of work – **working with migrants would require significant capacity-building**. In particular, this involves dealing with people who may have suffered a variety of recent hardships, requiring **very particular skills, insights, awareness and sensitivity,** which interviewees felt did not necessarily exist within the creative tech sector. As one interviewee from a creative tech hub located more at the 'business' end of the spectrum pointed out in considering a potential programme to support the professionalisation of migrants:

"We would need good awareness, we would have to have people who could proactively engage people with a migrant background. It requires a lot of resources, you need people who have the knowledge. To find people who can do that – scout participants and accompany them – is difficult".

Similarly, the creative tech hubs located more at the cultural end of the spectrum and that do undertake their own community engagement activity, highlighted the significant resources and time required to undertake such work successfully. Not least, such engagement also requires an understanding of cultural differences to avoid challenges where 'very different aesthetics come together'. As MiR.LAB for example found, "simply being open in the city centre was not enough". Instead, they have seen it necessary to "go out to where people live and work together with local organisations", in order to engage with new communities in the first place. To support this, they employ a dedicated outreach professional as well as a volunteer and are currently considering whether to undertake some Arabic courses to further support exchange. They have found that forging successful connections takes time, in particular when working to create productions that are technically challenging: "we are realising now, after a year, that something is coming back. It requires time and infrastructure". HAU and ZKM similarly reported going out into the communities and using a network of existing community organisations as bridges into their community work, supported by internal outreach teams. Such work is always "extra and on top – it requires a dedicated programme, and funding streams to cultivate that work. Asking curators to be social workers [doesn't work] – you need a different type of person". HAU thus highlighted requiring much advice, working together with institutions that are experts to support this work.

All interviewees therefore felt that to support such this kind of work and engagement with recent migrants **would require targeted funding programmes** in some shape or form, **which are currently not available**. These would need to support a variety of different elements, from support in purchasing advanced screen-based hardware and software, to supporting the planning for, and implementation of, outreach and engagement opportunities. This was felt to be particularly challenging in the current context of a contracting funding landscape.

"The focus on participatory projects and outreach, it has to be invested in, also into physical spaces".

"It requires financial support, support out of institutional structures – the political will needs to be there. I don't see a private economy interest in supporting this."

4.4 Views on integrating migrants in the creative tech workforce

In addition to considering advanced screen-based technologies to help support inclusion through self-expression, interviewees also reflected on the integration of migrants into the German creative tech workforce.

Several interviewees noted that, at present, there is little diversity in the creative tech sector. While most could think of some 'exceptions to the rule', overall, the sector is perceived to be, *"very white"* or *"very white and male-dominated"*. To address this, a number of organisations, especially those with a sector-support remit, mentioned initiatives they have been put in place aimed at increasing participation by members of underrepresented groups (for instance, obligatory EDI training for funded organisations; or guaranteed interviews/trials for startups with founders from underrepresented groups in funding call-outs).

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Looking specifically at migrants having arrived in the past decade, a similar picture emerges: while several organisations referenced work with individual refugees (e.g. from Ukraine), these projects were rare and/or did not focus on advanced creative tech, but more 'traditional' creative industries such as film or photography.

Several interviewees also highlighted the need to differentiate between highly-skilled migrants who arrive on a work or study visa (e.g., *"a tech worker from Bangalore arriving by plane in Berlin"*) and recently arrived, often lower-skilled refugees coming on a land route (e.g. from the Middle East, Afghanistan, Africa), as the potential for inclusion in the creative tech workforce varies accordingly.

Opportunities and barriers for highly skilled migrants

For skilled migrants, several interviewees believed that there were real opportunities to enter the workforce. As mentioned in 4.1 above, the sector is currently experiencing considerable skills shortages. As one interviewee noted: *"The tech industry is worried. There is panic to get up to speed in AI, how to develop technology. In [our region], there is a shortage of workers in the tech industry."*

In addition to skills gaps, some stakeholders also noted the value of highly skilled migrants bringing *"diverse thinking"*, as the sector *"needs more perspectives"*.

However, attracting a highly skilled migrant workforce is often **dependent on factors that lie beyond the recruitment policies of individual creative tech organisations**. For instance, one stakeholder explained how the lack of academic or vocational centres in their region for training and research in creative tech fields such as digital/virtual film technologies or gaming made it difficult to plug skills gaps locally. Others highlighted local infrastructure (such as suitable housing or schools) as a limiting factor, as well as the regulatory/legal framework and bureaucratic systems (*"Try and get a work permit for people from Bangalore or China...!"*). Finally, several interviewees noted reputational barriers, as Germany is, in some places, considered as hostile to migrant populations, and in others as slow to innovate (*"nobody wants to come here: such a boring, conservative place"*).

Opportunities and barriers for lower-skilled migrants and refugees

When considering lower-skilled migrants and refugees as a sub-group amongst the wider migrant population, several interviewees could see the potential value of inclusion in the workforce in a growing, innovative sector such as creative tech. Doing so might help change negative perceptions of refugees among the general population and increase the acceptance of diversity. For instance, one interviewee reported on the changed 'status' and perception of one participant in the 'Media Exile Hub' project (Coconat) from that, *"of a woman who fled from Afghanistan"*, to *"an activist and talented creative"*. Other interviewees noted the potential benefits for refugees themselves, helping them to have a *"soft landing spot"* and acquiring *"skills for the future. And while recent refugees might not bring pre-existing creative tech skills, upskilling might not take very long: a two-month training course on VR technologies might be sufficient for them to start work in a company, training other employees in the use of, and developing new, VR applications for that firm"*.

Notwithstanding the theoretical benefits and few existing positive examples, the majority of interviewees were sceptical of the realistic prospects of refugees entering the creative

tech workforce. Stakeholders from creative tech and migrant support organisations alike reported that recent refugees are generally not highly educated and lack professional skills in any area, let alone having highly specialised (creative) tech skills. Many come from countries where education and/or access to technology is restricted for certain groups (e.g. women in Afghanistan). These refugees need a lot more basic training (*"how to use a laptop"*) and professional skills. Where technical skills exist, these are often limited to the use of social media.

These views are reflected in the offer of migrant support organisations (see Section 3.2): while most offered skills development opportunities for basic or foundational digital skills, there were no offers for training in advanced screen-based technologies, due to a lack of demand or interest. For instance, ReDI School of Integration mentioned that they had previously offered a workshop on XR and its applications, but this course had had little take-up. Beramí Berufliche Integration e.V. also reported that, while they did not offer any courses in this area, they also did not have any enquiries or active interest in this area.

Migrant organisations noted that the main priority for most refugees is to find a job quickly – meaning that they do not have time to invest in developing skills in very advanced (but still niche) technologies, such as creative tech. In addition, there are **language barriers**. More specialist training courses provided by migrant organisations (such as on programming languages or Al/machine learning) have to be delivered in English, as many refugees do not speak sufficient German to work at a professional level. For instance, many recent Ukrainian refugees (some of whom have pre-existing tech skills) had hopes to return to their home country quickly and did not invest in German language courses – something that provides challenges to finding jobs in the longer term.

Creative tech organisations wishing to develop initiatives that are aimed at the integration of recent refugees into the workforce also face a number of contextual challenges, including:

- Legal status: not all refugees are guaranteed or likely to be granted asylum status (depending on their country of origin, their individual circumstances, etc.) and hence it is not clear how long people will be able to stay and commit to any projects or training. This makes the delivery of longer-term professional programmes difficult.
- Knowledge of migration system and laws: there is a lack of knowledge among creative tech organisations about the laws, rules and processes relating to refugee status, employment regulations, etc. Seeking to overcome these knowledge gaps makes engagement in such initiatives very resource-intensive for the organisation: "Creative hubs like us don't know the laws and rules around migration. This provides additional barriers and only projects with a very strong social purpose will try to engage with this."
- **Partnerships and relationship building**: in order to find the 'right' participants for such initiatives, creative tech organisations need to partner with key agencies working with recent refugees. Finding and building these relationships takes time, effort and knowledge, which many creative tech organisations do not have. At the same time, agencies working with refugees rarely have an understanding (and the time or willingness to develop this understanding) of the creative tech sector and the skills or experience required to work in this sector: *"We found it very hard to explain to the social workers who place refugees what*

the project is all about and the kinds of people this project is aimed at. This is now much better, as our current social worker has a much better understanding. But it took a while to find the right people and develop this relationship."

• **Timing of involvement**: considering the often-traumatic past experiences of recent refugees, most are keen to settle as quickly as possible. This means that referrals to creative tech initiatives should ideally happen in the initial stage after their arrival, while they are in temporary processing facilities. Once people have been placed in a more 'permanent' location, most are very reluctant to relocate again, even if it might provide them with an interesting professional opportunity. However, due to limitations and restricted resources in the refugee processing system, information on professional backgrounds, interest and skills is not always considered (or indeed collected) at the initial stage of processing of refugees.

Interviewees therefore felt that developing targeted professional integration projects in the highly specialised creative tech fields, was very 'ambitious'. However, one interviewee suggested that there may be value in promoting flexibility within support programmes for the wider creative sector and to *"use your creative competencies to enhance what people are already doing"*, rather than aiming to provide *"a social service to everybody"*.

5. Final considerations

5.1 Conclusion

Overall, the key message coming from across the research indicates a theoretical potential for the use of creative technologies in supporting migrants in Germany. Many interviewees recognised particular benefits and opportunities arising from these new technologies, that could be used to advance integration and inclusion. Likewise, the mapping identified a wide range of different types of creative tech hubs, many of which undertake community or engagement work around these technologies, and which could therefore be harnessed as institutions to support such activities, resources permitting.

However, interviewees mentioned that there is a wide range of current barriers to the use of creative technologies overall, let alone in a context of working with migrants (as defined for this report), with several therefore reflecting that it did not (as yet) feel like the 'most obvious' medium for engagement. Again, it is worth noting here that the primary subject of this research was not skilled migrants who come to Germany on a study or work visa. However, given that interviewees highlighted skills shortages within the sector, there may be real potential here to create pathways into employment within the sector for those migrants with the required skills.

Nevertheless, interviewees' general perceptions are that these challenges should reduce going forward amid fast-changing technological developments and increasing recognition of their use. Reflecting this, a few individual examples of related activity were mentioned across interviews. Whilst not necessarily fully reflecting the premise of the brief (i.e., working with migrants who have arrived in the past 10 years, using these technologies to promote self-expression and mutual understanding), these examples provide some starting points to consider the potential shape of creative tech opportunities to support migrants in Germany, and how this could be supported.

5.2 Starting points to considering creative tech opportunities to engage migrants in Germany and resulting recommendations

Interviewees mentioned a number of individual activities broadly related to the subject of this research, and also indirectly indicated some possible avenues with which to build or support related activity. These examples provide useful starting points in further considering the potential opportunities for using creative tech (hubs) to support migrants in Germany, based on which we identify a number of recommendations for the British Council and the sector.

Who to engage with?

It is important to consider the different types of creative tech hubs that have been identified, and their particular remit, in connection with the specific aims and target groups for the activity in question: those with a more cultural or social enterprise remit are already undertaking more work with communities; those more at the 'business/tech' end of the spectrum focus more on skills development and networking amongst those with existing skills.

Recommendation for the British Council: consider creative tech hub 'type' in developing any form of targeted support: For any subsequent activity that may be undertaken on the basis of this report, it should be carefully considered which types of creative tech hubs would be most appropriate to engage with. For example, those with a cultural remit would be more appropriate to engage with if considering a new funding programme for creative tech production activity with migrant groups; those with a business/ tech remit may be better placed to provide skills development offers.

What types of activities could be supported to support migrants' opportunity for self-expression?

The research highlighted a few individual examples of where advanced screen-based technologies had been used to creatively 'tell stories' related to migration, led by individual professionals and bringing in migrant communities to engage or contribute in different ways. In a context where the application of advanced screen-based technologies requires skills and hardware, which are not (yet) broadly available, examples mentioned by interviewees ...

- ...included some form of 'intermediary'. A small number of examples were provided that relate to professional artists, including those with a migrant background themselves, creating VR artworks, based on engaging with migrants/ refugees or by working in collaboration with other professionals with a migrant/ refugee background.³³ Hubs at the 'cultural end of the spectrum' saw potential to support similar projects. Others mentioned other professionals with existing relevant skills who are migrants or refugees in Germany creating VR works with the goal of supporting cross-cultural interaction, with some form of local support (e.g., funding, hosting, networking).³⁴ Other examples in turn...
- ...took the form of creative workshop series engaging targeted community groups to jointly engage or create with immersive content using relatively simple-to-use and -acquire technologies. Whilst relatively simple, it was felt that many do not realise these technologies exist at all, and once they do, *"if you know your way around tech, they are very easy, but if you don't, you need workshops"*.³⁵ Some interviewees pointed out that in theory it is possible for individuals with little professional background knowledge to *create* by themselves using immersive technologies, as i) more simple tech is now available, ii) hardware is becoming more affordable, iii) and there are ways to acquire necessary skills for free at home (e.g., via YouTube, ChatGPT, other AI tools). However, this takes dedication, time, and a certain affinity with the subject matter, and hence that this is not going to be relevant to many people, though more viable with regard to younger people.³⁶ Broadly, this suggests that

³³ For '*The Interview*', Thom Vander Beken worked with actors with migrant backgrounds to create a VR piece that sets audiences into the role of case workers in an immigration office. For '*How am I here*', Syrian choreography Mey Seifan created a VR space informed by interviews with refugees in Germany.

³⁴ XR Hub Bavaria is hosting project UAINVR, in which two Ukrainian refugees are creating virtual spaces allowing viewers to visit spaces and places in the destroyed areas of Ukraine, to *"allow Europeans the opportunity, to engage in the rebuilding of the Ukraine"*. (https://xrxplorerschool.de/uainvr-ukraine-in-vr/). Dock11 reported engaging with professional people of migrant background, e.g., a discussion with Ukrainian filmmakers resulting in a discussion between the filmmakers and an audience. ³⁵Though not focused uniquely on advanced screen-based technologies, examples included MiR.LAB's work with local Sinti and Roma using AI software (e.g. Suno AI and Wav2Lip; or its 'open laboratory' workshops (open to all), allowing visitors to test and explore new technologies – e.g., using VR headsets for gaming, playing games against an AI machine, using VR to create 3D stage scenery and writing Libretti with the help of ChatGPT and Sims.(<u>https://www.mirlab.digital/projects/archiv-woraus-ist-die-oper-gemacht</u>). Similarly, Jakob Gruhl from ZIMMT reported creating electronic music with groups in local socio-cultural centres using, *"tech that is there – laptops, smartphones, tablets"*.

³⁶ One example was that of two young Ethiopian women who are training as architects in Germany and have created a computer came with the goal of showcasing their culture, using skills they taught themselves via YouTube videos. Www.britishcouncil.org/research-insight

some form of workshop set up to support such activity with a small group of individuals may be required to support any realistic and productive opportunities for potential creation and self-expression. However, it also suggests that there are some avenues that are easier than others, and that much can already be achieved with relatively simple tools.

Recommendations for the British Council: In considering support to build potential future activities within the sector that engage migrants and could provide channels for self-expression...

- Promote positive examples of inclusive practice: Given that the research identified some related examples by speaking with a small number of creative tech hubs, this suggests that more examples of such work may exist. In an as yet an emerging field, it may be valuable to increase the visibility of positive examples that have been identified; and investigate whether further examples exist. With a few different types of activities identified through the research, there are also likely to be similar examples of activity in the UK. Some form of cross-border best practice awareness-raising and sharing could therefore be of value, to both highlight further examples, and to support the creation of bilateral connections.
- Consider funding support programme to develop engagement activities with migrants: While a number of hubs expressed interest in further developing their engagement offer, any existing activities relied on external funding; likewise, all hubs highlighted the need for funding to support any future community work, and any work they may do to engage migrants. Should the British Council wish to support further activity, it could consider the creation of a funding programme that could support intermediaries such as artists, creative tech professionals and cultural organisations or relevant hubs to develop an engagement offer that engages migrants and promotes their self-expression.

What types of activities could be supported to raise related skills amongst migrant communities, to support self-expression and/or build pathways into the industry?

Many interviewees noted that the skills required to produce content using advanced screenbased technologies are as yet missing amongst migrant communities as well as the broader population and highlighted the need for training courses on, or engagement with, the 'basic uses' of these technologies, first (i.e., with a focus on introducing these technologies and/or teaching basic applications, rather than using these technologies to create).³⁷

Recommendation for the sector: work with 'multiplier organisations' to deliver skills development activity for migrants and other community groups: Some hubs highlighted an interest in contributing to supporting the population – including migrants – to build related skills, but mentioned existing time and funding constrains (or challenges around this not being fully in their remit). Such hubs should consider the approach described by a few hubs, of focusing on advancing the skills of 'multiplier organisations', who themselves work in more community-based settings (e.g., libraries, schools, education centres, community centres) and could then pass on skills or lead workshops with community groups themselves.³⁸

³⁷ The Berlin School of VR, for example, offers such courses or events. XR Hub Bavaria also referenced planning a few public events as part of their upcoming 'Festival of the Future'.

³⁸ This was mentioned by e.g., XR Hub Bavaria (e.g., working with libraries) and ZIMMT (e.g., working with people working in socio-cultural community centres, for example music teachers).

Recommendation for the British Council: develop a support programme to raise creative tech skills among migrants and 'multiplier' organisations: Hubs highlighted the need for funding to be able to run any skills development offers – either those aimed at migrant communities directly, or at multipliers as suggested above. Should the British Council wish to support further activity in the area, it could consider the creation of a funding programme for relevant hubs to develop and delivery such offers; and to share or expand any effective approaches. There is also potential to explore what good practice from UK creative hubs could be drawn upon to develop skills development initiatives in Germany.

How could existing sector skills needs be plugged?

More widely, several hubs highlighted the lack of existing skilled professionals who can work and further build the advanced screen-based technology sector in Germany and saw potential for skilled people of migrant background to enter the industry to plug these gaps, including in considering the value of diversity to drive innovation.

Recommendation for the sector: increase understanding of existing skills gaps and potential pathways: Whilst many interviewees highlighted this as a challenge individually, it would be useful in considering support mechanisms for the sector to come together with education and government to build a clearer picture of skills gaps across the country, and to create educational pathways into work for skilled labour, including for professional migrants with the required skills.

Recommendation for the British Council: provide good practice examples from the UK: To support the above, the British Council could research good practice examples from the UK, for example considering the network of hubs located at universities in the UK that have both a research and public remit.

In what other ways could advanced screen-based technologies support migrants?

The research highlighted a current lack of awareness of advanced screen-based technologies and their potential application among migrant organisations but identified a small number of examples where these technologies had been used to provide support to migrants, or the potential benefits of this had been considered. Whilst not related to the notion of advancing selfexpression, several interviewees from migrant organisations noted the potential use of creative tech in the delivery of training to migrants/ refugees on various subject matters.³⁹

Recommendation for the British Council: support migrant organisations to develop creative tech skills: The British Council could support migrant organisations and their staff to increase their awareness and understanding and build their skills to then be able to use these technologies in their work with migrants.

³⁹ ReDI School of Integration mentioned running two courses that used VR headsets to transmit knowledge, though interest was relatively low. Start.AB NRW mentioned the potential use of AR/VR tools in advice or counselling sessions to bridge language barriers (e.g., through the use of imagery). Beramí Berufliche Integration e.V. also noted an interest in integrating such technology into their training and courses (e.g. for simulation of employment contexts or job interview situations). www.britishcouncil.org/research-insight 58

6. Appendix

6.1 The research approach

BOP Consulting initially provided an outline methodology, which was further refined in collaboration with key contacts at the British Council throughout the project. The following summary outlines the key research steps that were undertaken to deliver the project.

6.1.2 Research approach taken

The mapping element of the research was undertaken using a mixed method approach that combined desk research with a 'snowball' approach to identify relevant stakeholders and creative tech hubs across Germany.

1. Exploratory conversations with a number key sector stakeholders across Germany

As a first step, desk research was undertaken to identify regional creative industries sector support organisations that could provide: some insight into the validity of the key definitions to be used within the research; identification of individual creative tech hubs in their regions; and a first consideration of the question of the creative tech sector's potential support for/ interaction with migrants. Interviews were undertaken with five organisations, geographically spread across Germany:

- Creative.NRW (North Rhine-Westphalia)
- Hamburg Kreativ Gesellschaft
- Thüringen Kreativ
- Kreatives Sachsen
- Cluster ICT Berlin-Brandenburg

The research process was then repeated with a representative of the *Fördernetzwerk Kultur-und Kreativwirtschaft*, a national network of organisations that support the cultural and creative industries.

Each of these contacts was subsequently emailed to request lists of individual Creative tech hubs, consumption spaces and migrant organisations as defined above.

2. Subsequent broader email enquiry

A subsequent round of emails to request information on relevant local organisations was sent to a further 60 organisations, including all individual members of the *Fördernetzwerk Kultur- und Kreativwirtschaft*. This received 30 responses and produced a long list of 125 suggested hubs or creative tech organisations, and 45 suggested consumption spaces.

3. Tracking of all contacts and 'hubs' suggested by key stakeholders within a database, and desk research

In parallel to Step 2, all contacts and suggested hubs and consumption spaces were collated within an emerging database. Desk research was then undertaken to:

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- identify more detail on each organisation; and then
- assess their relevance for the project, given the scope and definitions to be used in the project and as outlined above, with each hub being graded using a 'RAG' traffic light system⁴⁰.

A draft list of creative tech hubs, assessed by relevance, was then shared and discussed in detail with the client. Of 125 hub suggestions initially reviewed, 64 were retained as relevant to the research focus.

A list of consumption spaces was also created. Based on the responses given by the informant organisations, these were divided into three sub-categories: permanent *purpose-built* spaces; permanent spaces with a predominant focus on programming tech experiences; and permanent spaces which regularly (but not predominantly) program tech experiences.

Alongside this, further desk research was undertaken to identify relevant migrant organisations. This involved desk research to identify organisations, as well as contacting government departments across the 16 German Länder. In total, 80 contacts were initiated in order to support the identification of relevant migrant organisations. This however elicited only few responses.

Ultimately, this work resulted in the creation of a **comprehensive mapping database** (provided in an internal excel document separate to this report), including four key elements:

- Creative tech hubs
- Creative tech consumption spaces
- Migrant organisations relevant to our definition
- A log of all contact for all organisations involved in the mapping.

4. In-depth interviews with creative tech hubs and migrant organisations

In-depth interviews were subsequently undertaken with 10 individual creative tech hubs. In selecting these, consideration was given to a spread across the different types of hubs identified in the research, as well as geographical spread. Interviews were conducted with the following:

- Berlin School of VR, Berlin
- Coconat, Bad Belzig, Brandenburg
- Dock 11, Saarbrücken, Saarland
- Extended Reality Berlin-Brandenburg (XRBB)
- HAU (Hebbel am Ufer), Berlin
- MIR.Lab, Gelsenkirchen, Nordrhein-Westfalen
- ZIMMT, Leipzig, Sachsen

⁴⁰ Red-Amber-Green grating system, with organisations that were relevant as per our definition rated green (i.e., predominantly production and or innovation hubs, specialising in advanced screen-based technologies); organisations that were not relevant as per our definition rated red (e.g., working in tech but not creative tech, providing co-working facilities but no other support services, with no public interaction); and those sitting at some point within this spectrum (i.e., relevant in some respects but not others) rated as amber.

- ZKM, Karlsruhe, Baden-Württemberg
- XR Bavaria Hub, Munich, Bavaria

In-depth interviews were also held with four migrant organisations:

- Bildung und Integration Hamburg Süd (BIN e.V.), Hamburg
- Redi School of Integration, Berlin
- START AB, Essen, Nordrhein-Westfalen
- Beramí Beruflich Integration e.V., Frankfurt at Main, Hessen

5. Reporting

In addition to providing the detailed excel mapping database, this final report brings together information from across the research steps to address the project's two key research aims.

BOP Consulting and the British Council would like to thank all those who contributed to the research through providing information and time to be interviewed.