D7.4: First policy brief

Immersive Tech and Virtual Worlds:

Empowering European SMEs and Startups to overcome challenges in doing cross-border business in the Digital Single Market

Revision: v.1.0

Work package	WP 7
Task	Task Number
Due date	10/01/2025
Submission date	10/01/2025
Deliverable lead	The Lisbon Council
Version	1.0
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Grant Agreement No.: 101135701
Call: HORIZON-CL4-2023-HUMAN-01-CNECT
Topic: HORIZON-CL4-2023-HUMAN-01-23
Type of action: HORIZON-CSA

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Abstract	EU SMEs in immersive tech and virtual worlds face challenges such as administrative burdens, market fragmentation, and regulatory inconsistencies, limiting their ability to compete internationally and contribute to a European virtual world that is open, inclusive, ethical, and environmentally responsible. This policy brief, based on research and industry input, highlights these barriers through a business journey framework and identifies targeted reforms—regulatory harmonisation, SME support, interoperability, and digital connectivity—to foster collaboration, market growth, and talent retention. Strategic recommendations focus on reducing bureaucracy, supporting SME growth, enhancing workforce mobility, and advancing skills to ensure EU competitiveness and prevent brain drain.
Keywords	SME; immersive tech; virtual worlds; AR; VR; policy; single market; business journey; ethnography

Document Revision History

Version	Date	Description of change	List of contributor(s)
V0.1	15/08/2024	ToC and abstract	Stella Meyer, Alessandro Paciaroni (LC)
V0.2	30/08/2024	First internal review and strategic planning	Francesco Mureddu (LC)
V0.3	15/09/2024	Desk research	Stella Meyer (LC) Pierre Rossel (IF)
V0.4	30/09/2024	Use cases	Stella Meyer, Alessandro Paciaroni (LC)
V0.5	15/10/2024	Insights from data analysis and recommendations	Alessandro Paciaroni (LC)
V0.6	30/10/2024	Review for policy impact	Francesco Mureddu (LC)
V0.7	05/01/2025	Reviev from internal experts	Michael Barngrover (XR4EU), Lukasz Porwol (INS)
V0.8	09/01/2025	Insights from the policy dialogue	Alessandro Paciaroni (LC), Francesco Molinari (LC), Francesco Mureddu (LC)
V0.9	10/01/2025	Internal review for quality assurance	Ilaria Mariani (PO), John Favaro (Trust-IT)
V1.0	10/01/2025	Final version for submission	Alessandro Paciaroni (LC), Francesco Mureddu (LC)

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This work has received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI).

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* R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

DATA: Data sets, microdata, etc.

DMP: Data management plan

ETHICS: Deliverables related to ethics issues.

SECURITY: Deliverables related to security issues

OTHER: Software, technical diagram, algorithms, models, etc.

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EXECUTIVE SUMMARY

Despite the promising opportunities, EU SMEs active in the immersive tech and virtual worlds sectors face several challenges, which limit their capacity of competing internationally and of bringing extra value to a European approach to virtual worlds, designed to be open, transparent, inclusive, ethically and environmentally responsible, and taking stock of European industrial excellences.

Based on an initial desk research - including among others the 2024 Annual Single Market and Competitiveness Report as well as the so-called Letta Report - followed by an ethnographic research experimentation, this policy brief seeks to highlight the issues of doing business across member states from the perspective of entrepreneurs. A central feature of this document is the development of a business journey, a unique method to represent challenges (or pain points) as they are experienced by immersive tech and virtual worlds business owners and managers navigating the Single Market. By bringing this practical experience to the forefront, this document translates tangible insights into systemic issues, capturing hurdles such as administrative burdens, market fragmentation, and regulatory inconsistencies. The findings contained herein were identified and validated through ethnographic research with market players and a dedicated policy dialogue convened on 09 January 2025. Challenges are identified and singled out especially when the immersive tech and virtual worlds SMEs and startups try to engage in cross-border activities within the EU's digital single market.

The rationale of this focus is simple: a truly European virtual world should unavoidably be seated in a cross-border digital environment, to take full benefit from the EU's cultural diversity, economic synergies, talent base and ethical values. These factors, if appropriately driven by targeted reforms such as regulatory harmonisation, financial support for SMEs, enhanced interoperability and digital connectivity, collectively define some of the qualifying aspects of the European approach to virtual worlds and show potential to contribute to market expansion and enhanced collaboration among the business players.

To address identified challenges, this policy brief outlines strategic, immediately actionable policy recommendations such as harmonising regulations, reducing administrative burdens, and supporting market entry and growth of European SMEs and startups developing virtual worlds and immersive technologies. It also advocates for enhanced workforce mobility and further skills development initiatives to ensure that the European digital economy remains competitive on a global scale and engages to prevent brain drain.

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ABBREVIATIONS

AI	Artificial Intelligence
AR	Augmented Reality
DMA	Digital Market Act
DSA	Digital Services Act
EU	European Union
GDPR	General Data Protection Regulation
MOSS	Mini One-Stop Shop
SME	Small to Medium Sized Enterprise
VAT	Value Added Tax
VR	Virtual Reality
XR	Extended Reality

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INTRODUCTION

Virtual worlds and immersive technologies, encompassing augmented reality (AR), virtual reality (VR) and mixed reality (MR), and increasingly powered by artificial intelligence (AI), have rapidly evolved from "niche" products and services into transformative tools across various sectors. From healthcare and education to manufacturing and retail, these technologies are reshaping how businesses operate, engage with customers and scale their services. International Data Corporation (IDC) announced that the market of AR and VR headsets is expected to triple its production in 2025.[1] In parallel, the McKinsey Global Institute report on "The Next Big Arenas of Competition" identified virtual and augmented reality as an "almost-emergent" market, acknowledging their dynamism and growth in size cap while highlighting its immaturity.[2]

Digital twins, for example, can serve as powerful tools in addressing some of the most pressing issues like the climate crisis, by simulating how different interventions and measures affect the micro and macro climate conditions. Similarly, the rise of virtual worlds, a fully immersive digital environment where people and businesses interact through avatars, offer use cases in education, business and entertainment, changing the way we engage in the digital realm. The OpenVerse project agreed on this working definition of virtual worlds: "Persistent, 3D, real-time, immersive environments, blurring the line between real and virtual, for socializing, working, learning, transacting, playing, and creating."[3]

Given the potential and increasing pervasiveness of immersive technologies, it is crucial that Europe stays competitive, builds and facilitates the adoption of its own approach to virtual worlds, designed to be open, transparent, inclusive, ethically and environmentally responsible. Yet, most of the innovations in this domain are driven by big tech players from outside of the EU, including Meta, Microsoft and Amazon. This is a compelling argument for narrowing the focus on how to make the existing EU digital industry players more and more competitive at the global level.

Already in September 2022, the European Commission launched the Virtual and Augmented Reality Industrial coalition, bringing together entrepreneurs and policy makers in a joint visioning exercise, which was later reinforced by the participation of a selected citizen's panel between February and April 2023, with a feedback event in February 2024. Thanks to this initiative, 23 recommendations were solidified, which inform the EU strategy on virtual worlds outlined in the Communication 442/final of 11 July 2023.[4]

[1] https://www.reuters.com/technology/artificial-intelligence/vr-ar-headsets-demand-set-surge-ai-lower-costs-idc-says-2024-09-16/

[2] McKinsey Global Institute. *"The Next Big Arenas of Competition."* (2024)

[3] European Commission. Meeting "Future Partnership for Virtual Worlds - Meeting with representatives of the academia." (2024)

[4] European Commission, An EU initiative on virtual worlds: a head start in the next technological transition: https://digital-strategy.ec.europa.eu/en/library/eu-initiative-virtual-worlds-head-start-next-technological-transition

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1 THE CONNECTION BETWEEN VIRTUAL WORLDS SMES AND STARTUPS AND THE EUROPEAN DIGITAL SINGLE MARKET

According to the aforementioned Communication, large-sized distribution platforms (in both the B2B and B2C segments) owned by international players not residing in the EU are among the early movers, who are marking a heavy presence in the virtual worlds market. These platforms can create closed ecosystems by setting *de facto* standards, and exploit network effects to become the sole gatekeepers of future virtual worlds, thus creating entry barriers for European SMEs and start-ups.

To mitigate this risk, fostering a more supportive business ecosystem within the EU is essential, particularly for innovative SMEs and start-ups. Strengthening their growth potential and bolstering their competitiveness on a global scale will ensure they are better equipped to thrive in the international marketplace.

This policy brief starts with the (reasonable) assumption that the future European Metaverse can only be seated in a multi-country digital environment, reflecting the variety and fertility of the Union's diversities, but also taking benefit of the ongoing policy initiatives under the header of the European Digital Single Market.

More specifically, the new business environment for innovative SMEs and start-ups should, among other advantages:

- Allow for the contamination of national cultures, languages, and traditions. This diversity enriches the virtual worlds experience, making it more inclusive and representative of the EU's multicultural identity.
- Leverage economic synergies across different countries and regions, which can specialize in various aspects of the virtual worlds, such as content creation, technology development, and user experience design, leading to a more robust and innovative value chain.
- Enhance the collaboration among businesses, research institutions, and universities residing in different EU countries. This can foster the development of new technologies and applications, driving innovation and competitiveness in virtual worlds and paving the way for the establishment of the metaverse.
- Tap into a larger and more diverse talent pool from various EU Member States at once, rather than a single one. Harnessing this talent is crucial for developing and maintaining cutting-edge technologies and experiences.
- Lend access and outreach to a broader, truly European customer base. This can lead to increased revenue and growth opportunities, enabling the formation of a critical mass of active audience for emerging virtual world ecosystems. Building on these interconnected ecosystems, strategic efforts can gradually transition towards a unified metaverse model, fostering interoperability and seamless user experiences across platforms.

These and other aspects are recognised as prospective benefits for the entirety of the EU industry as soon as the ongoing transition to European Digital Single Market is finalised. That is a cornerstone of the European Union's strategy to foster innovation, competitiveness, and economic growth across Member States, with SMEs and startups being crucial drivers. Unfortunately, the transition towards the Digital Single Market is proceeding at a very slow pace. For example, the share of businesses engaging in cross-border e-commerce has remained broadly stable over the last decade, as well as the

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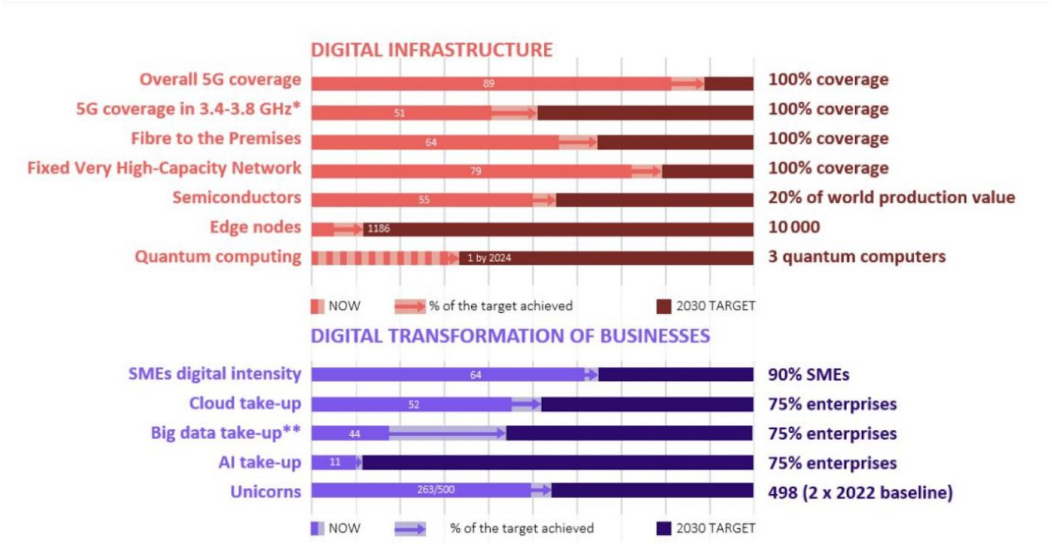
share of firms adopting digital technologies or employing ICT specialists.[5] SMEs, in particular, lag behind large enterprises in most domains. The latest *State of the Digital Decade* report shows that Europe is too slowly progressing in developing digital infrastructure and in fostering the uptake of AI - the latter being a crucial enabling technology for virtual worlds. [6]



1.1 THE SLOW-PACED TRANSITION TO THE DIGITAL SINGLE MARKET ALSO AFFECTS THE EUROPEAN VIRTUAL WORLDS FORMATION

Immersive technologies and virtual worlds, including those powered by emerging technologies like VR and AR, represent a fast-growing sector with vast potential for both economic and societal impact. However, SMEs and startups developing or utilising these technologies face multiple challenges in operating and scaling across the European Single Market. The *2024 Annual Single Market and Competitiveness Report* outlines several key areas where European SMEs and startups encounter obstacles, further echoed in Enrico Letta's report *Much More than a Market*.[7] These include regulatory and legal barriers (e.g. complexity and fragmentation of the GDPR and IPR implementation frameworks), limitations to cross-border market access and competition in e.g. public procurement markets, restrictions to workforce mobility and a persistent skills gap across European countries, unevenly distributed funding opportunities, etc. These issues require tailored policy solutions to empower European entrepreneurs to not only start their businesses in the EU but also scale them and stay in the Single Market. While a lot of tech companies are based in the U.S., the immersive tech field is still nascent, which leaves much room for "Made in Europe" innovation. This opportunity for "Made in Europe" innovation should build upon Europe's rich cultural diversity, established industrial sectors, and commitment to ethical and sustainable technological development, but it also faces challenges distinct from the U.S. context—such as Europe's fragmented regulatory landscape, slower capital

[5] European Commission, Single Market Scoreboard: https://single-market-scoreboard.ec.europa.eu/competitiveness/digital_en

[6] European Commission, State of the Digital Decade 2024 Report: https://digital-strategy.ec.europa.eu/en/factpages/state-digital-decade-2024-report

[7] European Commission, The 2024 Annual Single Market and Competitiveness Report (Brussels: 2024); Enrico Letta, Much More Than A Market - Speed, Security, Solidarity (2024).

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access, and varying levels of digital maturity across Member States, all of which complicate the scaling of virtual-world technologies and may impede Europe's ability to compete globally in this rapidly evolving market. Startups, which tend to be more agile than larger enterprises, are well-positioned to experiment with “chunks” of the nascent European virtual worlds and adapt to recognised market needs as well as to the peculiar EU values.

We therefore posit that a stronger and more inclusive Digital Single Market is key, not only to make Europe as a whole more competitive and innovative, but also to quicken the pace at which EU SMEs and start-ups will contribute to building and enhancing the EU’s original approach to virtual worlds and contribute to economic resilience and job creation across member states.

In the remaining parts of this policy brief, we will:

- Provide an overview of the main challenges faced by European SMEs, including from the immersive tech and virtual worlds fields, from the point of view of regulatory, market, workforce, and technological aspects (section 2 of this document);
- Reinforce this analysis with the evidence provided by the “business journey” of two European SMEs utilising immersive technologies: OneBonsai and Ready Player Me, the key representatives of which were interviewed in-depth during the preparation of this report (section 3 of the document);
- Generate policy recommendations focusing on areas of particular relevance to SMEs and start-ups in the immersive tech field, to support their dimensional growth and help them thrive in the global market (section 4 and conclusion).

1.2 COMMON CHALLENGES TO DIGITAL AND IMMERSIVE TECH SMES AND STARTUPS IN THE EUROPEAN SINGLE MARKET

Despite the promising opportunities, EU SMEs and start-ups active in the immersive tech and virtual worlds sectors face several challenges, which are common to digital businesses according to several observers. This section enumerates the most critical of those challenges based on the results of a preliminary desk research.

1.3 REGULATORY AND LEGAL BARRIERS

European startups and SMEs face a complex regulatory environment that varies considerably across Member States. Immersive technologies, which often combine hardware, software, and data-intensive services, are particularly vulnerable to fragmented regulations. The EU has taken steps to address some of these issues through frameworks like the Digital Markets Act and Data Governance Act. Despite harmonisation efforts, many virtual world SMEs face disparate national laws, especially concerning data protection and privacy, intellectual property, and digital services. Current convergence mechanisms are too slow to allow SMEs to fully capitalise on economies of scale. In many cases, companies must navigate additional layers of compliance at the national level, which increases administrative costs and complexity.

Moreover, immersive technologies, especially those that capture user interactions in virtual environments, rely on collecting vast amounts of personal and behavioural data. Ensuring compliance with GDPR (General Data Protection Regulation) and navigating the patchwork of national data protection laws poses a significant burden for SMEs as it often requires localised legal expertise,

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diverting scarce resources away from innovation. For instance, a French startup developing a virtual meeting space might need to hire specialised legal consultants to ensure they comply with different interpretations of GDPR in France, Germany and Spain, particularly around user consent, anonymisation and data storage. These legal costs can overwhelm small businesses that do not have the legal or administrative resources of large multinational corporations.

Protecting proprietary technologies or content in virtual worlds is another hurdle. While the EU has made strides toward intellectual property (IP) harmonisation, SMEs report that the current system still favours large companies with the resources to enforce IP across multiple jurisdictions. In virtual worlds, challenges such as unauthorized reproduction, counterfeiting, and dilution of brand value are prominent. These issues are exacerbated by the difficulty of monitoring and enforcing IP rights in decentralised and cross-border digital environments. Furthermore, technologies like blockchain and smart contracts offer tools for automatic IP enforcement, but their adoption is resource-intensive and typically more accessible to large enterprises. For SMEs, the lack of standardised, interoperable platforms and the domination of a few large players create additional hurdles. These dynamics not only restrict SMEs from competing effectively but also hinder their ability to scale and protect their innovations. The European Commission has acknowledged these challenges and is exploring solutions such as a "toolbox against counterfeiting" to support IP enforcement in virtual environments. Addressing these challenges will require tailored interventions, such as improving access to affordable enforcement mechanisms, fostering interoperability through open standards, and providing financial and technical support to SMEs for leveraging advanced IP protection tools. For example, a Dutch AR company producing educational content may struggle to protect its IP in Spain or Italy due to inconsistent enforcement of copyright law. The cost and time of pursuing IP protection or infringement claims in multiple countries make it difficult for smaller firms to defend their innovations.

Additionally, Member States apply different interpretations to the EU's Digital Markets Act and Digital Services Act, creating compliance headaches for startups offering digital or virtual services. A gaming startup that wants to launch a cross-border AR platform may need to adjust its terms and conditions, privacy policies and service offerings to meet the specific digital content rules in countries like Belgium or Sweden. The additional administrative costs and delays can put startups at a disadvantage compared to larger corporations that already have infrastructure in place to navigate such complexities.

1.4 MARKET ACCESS AND COMPETITION

While the Single Market theoretically provides a level playing field for SMEs, the reality is that competition is skewed in favour of larger corporations. Many startups struggle to break into or scale within the European Single Market due to entrenched competition and structural market barriers.

One of the primary issues is the dominance of major tech platforms, particularly in the immersive technology space. Companies like Meta and Google, with their VR and AR platforms, act as gatekeepers, dictating the rules of engagement for smaller firms. A European startup creating VR content for education may find it nearly impossible to gain traction if it is forced to distribute its products via a dominant platform that takes a hefty commission, offers limited visibility or restricts certain innovative features. The Digital Markets Act is intended to address these imbalances, but enforcement is slow, leaving many SMEs without fair access to markets.

Moreover, the lack of venture capital and a broader investment culture for emerging technologies in the EU adds to these challenges. High capital gains tax rates in certain member states, such as Ireland, serve as a deterrent for personal investments, leaving many SMEs without adequate funding to scale.

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This investment gap often forces startups to seek funding outside the EU, creating additional barriers to growth.

The challenges are further exacerbated by shifting global investment trends. In both Europe and the United States, companies are increasingly redirecting resources to areas perceived as more immediately profitable, such as AI and robotics. This shift leaves XR-related departments and units in larger corporations underfunded and deprioritised, while SMEs face even greater hurdles in securing the investment needed to scale. Although XR technologies are widely recognised as having transformative potential, profitability remains elusive. The uncertainty surrounding when XR will generate significant returns has deterred many smaller firms from investing in the sector, leaving the space dominated by major tech companies like Meta, Apple, Google, and Samsung, which can afford to take long-term risks with their massive budgets.

Another issue concerns access to public procurement opportunities which is notoriously difficult for SMEs. Immersive technology startups could potentially offer innovative solutions for public services such as healthcare, education or urban planning, but they often face prohibitive requirements that favour larger, more established companies. Language barriers and different national standards further fragment the market, making it difficult to scale.

Additionally, virtual world SMEs aiming to scale across multiple European countries often face inconsistent VAT rules. While the EU has streamlined VAT procedures for digital goods through the Mini One-Stop Shop (MOSS) and subsequent initiatives, disparities in VAT rates and reporting requirements across Member States remain problematic. For instance, services like augmented reality (AR) tourism experiences must navigate different national regulations, leading to administrative burdens and potential compliance risks. These inconsistencies result in higher costs for SMEs, including investment in legal and accounting resources to manage varied obligations. Despite EU efforts to reduce barriers, such as promoting cross-border tax harmonization and reducing the complexity for digital businesses, fragmentation persists, reflecting the autonomy of Member States over fiscal policies. A startup developing AR tourism experiences, for example, may need to navigate varying VAT rates and reporting obligations in each Member State where their service is offered. This can lead to higher administrative costs and potential penalties for non-compliance. Though the EU has simplified VAT procedures for digital goods, complex national variations in taxation remain.

The former Italian Prime Minister Enrico Letta emphasises in his report that the EU's regulatory framework needs to better support SMEs by simplifying access to finance, reducing barriers to public procurement, and fostering competition within the digital ecosystem . Startups struggle to compete with established companies, not only because of access to capital but also due to challenges in establishing themselves in key markets where language and cultural barriers can exacerbate the situation. This makes it difficult for SMEs to scale beyond their national markets. The lack of a unified approach to VAT and other fiscal policies across Member States remains a stumbling block for companies seeking to offer cross-border services in immersive technologies.

1.5 WORKFORCE MOBILITY AND SKILLS GAP

Immersive technologies require a highly specialised workforce that can bridge the gaps between creative content development and complex technical engineering. Yet, the shortage of digital skills threatens to hinder the growth of virtual world SMEs and startups. While the EU boasts a strong talent pool in engineering and digital technology, the 2024 Annual Single Market and Competitiveness Report points out a persistent mismatch between industry needs and available skills . And although the EU encourages free movement of labour, the reality is that national recognition of qualifications remains

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inconsistent, particularly in the tech sector where new skills might not be covered by standardised frameworks like the European Qualifications Framework (EQF). This in turn creates delays and may discourage SMEs from sourcing talent from across the bloc. Adding to this, demand for XR-related skills remains erratic and unreliable. Professionals aspiring to establish careers in immersive technologies often face difficulties securing consistent opportunities, a situation further complicated by perceptions tying XR expertise almost exclusively to the gaming sector. This narrow association prevents legacy industries such as Architecture, Engineering, and Construction (AEC) and manufacturing from effectively accessing talent pipelines originating from gaming programmes or specialised university courses. The underutilisation of these skills limits their broader application in non-gaming sectors, restricting growth and innovation potential within Europe.

What is more, some of the most talented engineers and developers are being drawn to countries like the U.S. or China, where larger firms offer higher salaries and more advanced R&D environments. European tech startups and SMEs often struggle to compete, both in terms of wages and the dynamism of the local tech ecosystems. This talent flight exacerbates the skills gap, leaving many startups understaffed and unable to grow. Additionally, the lack of harmonised policies to foster a more integrated European tech ecosystem further complicates talent retention. Initiatives like the European Digital Decade strategy and the EU Blue Card Directive aim to address these gaps by attracting and retaining skilled professionals, but significant challenges remain in aligning regional capabilities with global competition.

1.6 DIGITAL AND TECHNOLOGICAL BARRIERS

Tech startups and those developing immersive technologies in particular face a variety of technological challenges regarding the digital infrastructure and technological standards needed to operate at scale in the European Single Market. One of the greatest hurdles for SMEs in the immersive tech space is the lack of common standards for interoperability. Virtual and augmented reality systems often operate in silos, with little compatibility between platforms. A Belgian AR startup, for example, might develop a breakthrough immersive experience for educational use but find it difficult to integrate into different national school systems or work with other VR content developed in another Member State. This lack of standardisation limits cross-border scalability and reduces innovation. Developing common standards for digital services and technology can help reduce market fragmentation and facilitate cross-border business.

Another challenge is related to the high costs of developing and maintaining the technological infrastructure required for immersive experiences. SMEs developing immersive experiences rely heavily on advanced computing power, high-speed internet and cloud-based services, all of which can be prohibitively expensive. The disparity between the resources available to SMEs versus large corporations exacerbates this issue. This inequality is exacerbated by the digital divide within Europe, where broadband access and technological infrastructure vary significantly between regions. That means startups and SMEs based in more peripheral regions of Europe often find themselves at a disadvantage. The Single Digital Gateway has made strides in offering a platform for SMEs to access cross-border services, but more needs to be done to support the adoption and expansion of crucial digital infrastructure for immersive tech across member states.

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2 INSIGHTS FROM THE BUSINESS JOURNEY OF TWO REAL ACTORS: READY PLAYER ME AND ONE BONSAI

To gain practical, first-hand insights, two European SMEs utilising immersive technologies were interviewed: OneBonsai and Ready Player Me. OneBonsai is a Belgian SME offering custom-made virtual reality training programmes for businesses. They partner with businesses across sectors both inside and outside the EU. Ready Player Me is an Estonian SME that is active in the gaming industry and focuses on interoperable avatar and digital assets creation toolkits.

The two interviews offer practical insights into the specific challenges faced by immersive technologies SMEs operating within the European Single Market. The challenges identified during the interviews reflect many of the broader issues faced by European SMEs and startups outlined in chapter two. But some additional hurdles came to the forefront, which are specific to the virtual worlds field.

2.1 ONEBONSAI

OneBonsai, established in 2017, began as a small startup focused on virtual and augmented reality, quickly transitioning from its beginnings to specialise in professional applications of virtual reality, focusing on the professional side of virtual reality like personnel training across many sectors.

2.1.1 Funding Challenges

OneBonsai identified a significant challenge in securing venture capital in Europe due to the fragmented nature of the market and differing investment cultures across Member States. "If you are below 1,000,000, I think it's not really a big problem. If you go above that, then it often becomes a question of which stage you are as a startup," explains the founder. While small-scale seed funding through angel investors or subsidies is accessible, scaling beyond that becomes increasingly difficult. The team also noted that risk aversion among European investors is a hurdle: "In the U.S. they are more used to investing a ton of money in new startups, which would be much more difficult in Europe." This culture forces many startups, including OneBonsai, to either remain small or look outside Europe for further funding, which can restrict their ability to scale within the Single Market.

2.1.2 Navigating a Complex Regulatory Environment

For OneBonsai, the complexity of Europe's regulatory environment presents another hurdle, particularly in complying with data protection laws like GDPR and the upcoming AI Act. "The regulations are built for large corporations, but small companies like ours have to adhere to exactly the same requirements," the founder explains. The company, which operates in the immersive technology sector, faces additional regulatory burdens related to the collection of personal and behavioural data, critical for their virtual reality offerings. "The implementation of these regulations varies between member states, making it even more challenging for small businesses like ours to ensure compliance," they noted. This is especially problematic for SMEs that operate across multiple jurisdictions, where inconsistent interpretations and enforcement can create additional administrative burdens.

2.1.3 Scaling Across a Fragmented Single Market

Although the EU is designed to provide a unified market, in practice, OneBonsai found that each member state often operates as a distinct market with its own regulations, languages, and market conditions. "You often need a presence in different countries to properly do business there," said the

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founder, highlighting that setting up subsidiaries in other member states involves navigating complex administrative processes. OneBonsai also emphasised the logistical and financial burdens associated with scaling across borders, particularly for immersive technology companies that require physical hardware for clients. "The availability of hardware like VR and AR headsets is much better in other regions," which further complicates efforts to scale.

2.1.4 Hiring Talent

OneBonsai, however, does not see a shortage of skilled workers as a significant hurdle to their growth. The company noted that while immersive tech is a relatively new field, the skills required are often niche and specific to each company's technology. "We recruit from universities or hire game developers with skills that can be adapted to our needs," said the founder, reflecting their strategy to hire talent at the source. Unlike many tech startups, OneBonsai has found that their specialised field and the appeal of working in immersive tech have made it easier to attract and retain talent, despite the competition for skilled workers across Europe.

2.2 READYPLAYERME

ReadyPlayerMe's journey from a four-member team in Estonia to becoming a major force in the European gaming sector showcases both the trials and triumphs of scaling a business. From funding rounds to managing talent acquisition across diverse European markets, the team has faced numerous challenges while expanding their innovative platform.

2.2.1 Securing Funding

In its early days, ReadyPlayerMe struggled to secure funding. "Ten years ago, Europe's funding ecosystem was quite underdeveloped, with only a meagre number of angel investors and small funds," recalls the founder. Initially, the company relied heavily on local investors from Estonia, Finland, and Germany. But things have evolved. "Now, with larger funds like Atomico and Plural entering the arena, access to capital has improved significantly."

In addition to private investment, ReadyPlayerMe applied for public funding. "We applied for European grants through Enterprise Estonia, but the process was time-consuming and complex," the founder explains. Though successful once, they found the bureaucratic hurdles and reporting requirements to be a significant drain on resources. "Without the capacity to hire consultants to navigate the system, it's difficult. I wouldn't recommend relying on public funding unless you have no other option," he reflects. Despite these challenges, the company learned to combine both private and public funding sources, creating a more diversified financial base for growth.

2.2.2 Talent Acquisition

Initially, ReadyPlayerMe sought to hire locally in Estonia, but quickly realised the talent pool was limited. "Estonia's talent pool is small, especially for niche gaming roles," the founder explains. This led to an expanded search across Europe, focusing on countries like Germany, Spain, and the UK. However, hiring across borders brought its own challenges. "Understanding labour laws in different countries, like Germany's three-month notice period, can be a significant roadblock when you need someone immediately," he notes. ReadyPlayerMe's strategy eventually included using platforms like Remote.com to manage hiring logistics across multiple countries, streamlining the process of navigating international labour regulations.

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2.2.3 Navigating Regulations

Europe's regulatory frameworks, particularly in data protection and digital services, have been a double-edged sword for ReadyPlayerMe. "GDPR is not much of an issue anymore, but compliance with the Digital Services Act, especially content moderation, adds operational costs," the founder explains. While GDPR offers a uniform set of rules across the EU, easing compliance, the company has had to invest in external content moderation services to meet DSA requirements. Despite these challenges, the consistency of European regulations has been a positive factor for cross-border operations, simplifying compliance when expanding into new markets.

2.2.4 Scaling Up Operations

ReadyPlayerMe's rapid growth across Europe highlighted the need for a unified approach to labour laws and employment regulations. "We would love to see more consistency in labour laws across Europe," the founder says, citing challenges with navigating different regulations for stock options and severance across countries. Disparities in employment laws, particularly in France and Germany, where dismissing non-performing employees is notably difficult, have influenced their hiring strategies. The company's use of remote working solutions and platforms has allowed them to scale efficiently while maintaining operational flexibility.

2.3 THE BUSINESS JOURNEY OF VIRTUAL WORLDS SMES AND STARTUPS: A COMBINED PERSPECTIVE FROM ONEBONSAI AND READYPLAYERME

The journey of virtual worlds SMEs and startups in Europe is shaped by common challenges across key areas like funding, hiring, scaling, and regulatory navigation. While the experiences of OneBonsai and ReadyPlayerMe highlight shared obstacles, their journeys reveal important differences in how they've tackled these hurdles.

2.3.1 Funding: Fragmentation and Scaling Beyond Seed Rounds

Both OneBonsai and ReadyPlayerMe faced an uphill battle when it came to securing early-stage funding. The fragmented venture capital market in Europe and a general risk aversion among investors slowed their progress. Although seed funding (under 1,000,000 €) is relatively accessible, scaling beyond that becomes a significant challenge.

OneBonsai struggled to attract larger investments within Europe, often having to look abroad. As they explain, "Europe's VC market just isn't ready to back bigger bets."

ReadyPlayerMe encountered similar hurdles, though they've seen improvements in the private funding ecosystem. However, both companies found public funding to be a complex and resource-heavy process, requiring external consultants and administrative overhead. For both, raising significant sums remains difficult, even with the recent improvements ReadyPlayerMe has observed.

2.3.2 Hiring: Labour Law Complexities and Cross-Border Recruitment

For both companies, hiring talent across Europe presents its own set of challenges. Labour law regulations vary widely across member states, creating complexity in recruitment and employee management. OneBonsai emphasised the long recruitment timelines for niche roles in Europe compared to faster hiring processes in markets like the U.S., while ReadyPlayerMe noted the specific difficulties in hiring in France, a country they now avoid due to its strict labour laws.

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To mitigate some of these challenges, ReadyPlayerMe uses employer-of-record services, which simplify hiring across borders and help them manage complex regulations.

2.3.3 Scaling: Navigating a Fragmented Market vs. Unified Opportunities

When it comes to scaling, the two companies diverge in their perspectives on the European market. OneBonsai sees Europe's market as fragmented, with different regulations, languages, and market conditions making it harder to expand. Their need for physical hardware like VR and AR headsets adds logistical challenges, as availability of such equipment is more limited in Europe compared to other regions.

ReadyPlayerMe, in contrast, views the EU as a single market, which has helped them grow, although they still face challenges with tax laws and labour regulations. A significant hurdle for them is complying with the Digital Services Act (DSA), especially the content moderation required for platforms that allow user-generated content. This regulatory burden stands out as a major factor that impacts their scalability.

2.3.4 Navigating Regulations: GDPR, DSA, and Emerging Legislation

For both companies, the regulatory landscape is a significant challenge, though their specific issues differ. OneBonsai struggles with the complexities of GDPR compliance and is particularly concerned about future regulations like the AI Act. Ensuring compliance across multiple jurisdictions is resource-intensive and time-consuming.

On the other hand, ReadyPlayerMe has adapted well to GDPR, considering it a manageable challenge, but the DSA's content moderation requirements are a heavier burden for their business model. As a platform with user-generated content, ReadyPlayerMe has had to invest in additional resources to meet these regulatory obligations, which adds complexity to their operations.

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3 CONCLUSION AND STRATEGIC POLICY RECOMMENDATIONS

The business journey for virtual worlds SMEs and startups in Europe is defined by several common pain points, including fragmented funding landscapes, labour law complexities, and regulatory hurdles. While ReadyPlayerMe has benefited from recent improvements in private funding and the unification of the EU market, they face significant challenges from the DSA's content moderation requirements. OneBonsai, meanwhile, continues to encounter difficulties with fragmented market conditions and longer recruitment timelines, while also preparing for the impact of emerging regulations like the AI Act.

In this section, we summarise the current state of our analysis in four main recommendations:

1. "Show me the incentive" and the European virtual worlds will prosper;
2. "Mind the gap" and unlock private investments;
3. "Lead by example" with a truly SME-scale 28th regime;
4. "Put your money where your mouth is" to monitor the Real Time Economy.

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1 "SHOW ME THE INCENTIVE" AND THE EUROPEAN VIRTUAL WORLDS WILL PROSPER

Addressing the funding limitations faced by immersive technologies SMEs is crucial. To do so, the EU should foster cross-border venture capital networks and encourage the development of a more integrated venture capital market by incentivising cross-border investments. This could include creating EU-backed co-investment schemes that reduce the perceived risk of investing in immersive technologies startups. Existing EU financial instruments like the InvestEU programme should be expanded to target immersive tech startups specifically. Offering scale-up loans or equity investment options could provide the critical financial support these businesses need as they move from seed funding to growth.

Additionally, to further incentivise investment, introducing a cross-border tax incentive scheme harmonised across Member States could encourage more private investments into immersive tech SMEs. Offering tax benefits to clients of highly innovative companies would further stimulate demand, creating a virtuous cycle of investment and innovation. These measures would help address the underutilisation of Europe's private capital and complement the public guarantees of the Immersive Tech Investment Fund (see next recommendations).

2 "MIND THE GAP" AND UNLOCK PRIVATE INVESTMENTS FOR VIRTUAL WORLDS STARTUPS

Establish an EU Immersive Tech Investment Fund to unlock private savings and de-risk venture capital through public guarantees, allocating 2-3% of household savings to close Europe's investment gap and fuel immersive tech growth.

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To close Europe's investment gap and boost innovation, a strategy to redirect 2-3% of household savings toward an EU Immersive Tech Investment Fund, backed by public guarantees, could be highly effective. Following the proposals of the Draghi Report and Letta's call for a Savings and Investment Union, this approach would mobilise private capital for growth sectors like immersive technologies. With over €10 trillion in household savings across the EU, this would unlock between €200-300 billion, covering 25-37.5% of the €800 billion annual investment gap highlighted by Draghi.

From a macroeconomic perspective, this approach is sustainable. Households would invest only a small portion of their savings, meaning the majority remains untouched and accessible for other needs. By focusing on liquid assets and offering tax incentives, this policy would ensure that financial security is maintained while driving investment into the innovation economy. The fund would channel resources into immersive tech, offering high potential returns and stimulating growth across key industries.

This recommendation aligns with the Letta Report's vision of utilising private savings to bolster Europe's competitiveness, while ensuring Draghi's investment gap is addressed through sustainable, private-public collaboration. The approach strikes a balance between risk mitigation and economic opportunity, providing clear benefits for households, investors, and Europe's broader competitiveness.

3 "LEAD BY EXAMPLE" WITH A TRULY SME-SCALE 28TH REGIME

Pioneer the simplification of regulation for SMEs by renewing the SME test of the Better Regulation Toolbox for a 28th regime that addresses the needs of startups and SMEs in the Digital Single Market to meet the EU's 25% administrative burden reduction target.

To enable immersive tech startups and SMEs to thrive across the European Single Market, the SME Test in the Better Regulation Toolbox should be enhanced and fully integrated into a 28th regime designed specifically for smaller businesses. The current one-size-fits-all approach disproportionately burdens SMEs, which struggle with compliance costs and administrative complexity compared to larger companies. By improving the SME Test, the EU can ensure that regulatory frameworks are proportional, streamlined, and supportive of innovation.

This would directly contribute to achieving the EU's goal of reducing compliance costs by 25% by 2024, as highlighted in the Draghi and Letta Reports. Tailoring rules to the unique needs of SMEs, particularly in fast-growing sectors like immersive technologies, would unlock significant growth potential while ensuring that these businesses are not stifled by unnecessary bureaucratic hurdles.

To reduce the regulatory burden on immersive technologies SMEs, the EU should create SME-friendly regulatory frameworks and harmonise regulatory implementation. Specifically, they should introduce simplified compliance mechanisms for SMEs, particularly for regulations like GDPR and the AI Act. This could involve developing regulatory sandboxes that allow smaller companies to test new technologies under more flexible rules before moving to full-scale compliance. Further, the EU should work to standardise the implementation of data protection and AI regulations across all Member States, reducing the need for SMEs to navigate different legal frameworks in each country.

To better address the barriers faced by SMEs, the EU should establish a unified hiring regime that simplifies cross-border recruitment and harmonises the recognition of qualifications and micro-credentials. Additionally, adopting a life-based events approach to map SME pain points in the business journey would help identify critical bottlenecks, such as qualification delays and administrative burdens. These insights could inform the design of a truly SME-friendly regulatory framework, ensuring that the 28th regime becomes a practical enabler of growth.

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4 "PUT YOUR MONEY WHERE YOUR MOUTH IS" TO MONITOR THE REAL TIME ECONOMY

Establish a real-time reporting and benchmarking system to track RTE progress across Member States, driving a time-bound action plan to ensure measurable adoption and a 25% reduction in SME compliance costs.

The Real-Time Economy (RTE) is an economic system where all administrative processes, such as tax filings, business registrations, and compliance activities, are conducted and updated in real time, without delays or manual interventions. The RTE enables instant data exchanges between businesses and public authorities, reducing bureaucracy and streamlining operations for companies, particularly SMEs, by leveraging digital infrastructure for immediate, automated processes. This approach enhances efficiency, transparency, and competitiveness, as all interactions happen instantaneously within a seamless digital ecosystem.

To make the Real-Time Economy (RTE) a reality, the European Commission should create a benchmarking and reporting system that collects real-time data from Member States. This system will generate a European RTE Scorecard that tracks the adoption of real-time processes like tax filings, business registrations, and compliance, providing transparency on progress.

When it comes to overcoming market fragmentation, the EU should simplify administrative processes and reduce the bureaucratic burdens that SMEs face when setting up subsidiaries or expanding into new Member States. Standardising the process for registering businesses, handling taxation and complying with local regulations could make it easier for SMEs to scale across borders.

Scaling the Estonian e-residency model to an EU-wide initiative would further enhance the real-time economy by providing SMEs with a seamless digital infrastructure for cross-border operations. Such a system could simplify tax compliance, regulatory processes, and business registrations, ensuring that SMEs benefit from the efficiencies of the RTE. By integrating this approach into the EU's broader digital strategy, the Commission could create a more cohesive and accessible ecosystem for immersive tech businesses to thrive.

By putting a system in place to track progress, the Commission can ensure the RTE is not just a concept but a measurable reality. This system will drive quicker adoption of real-time administrative processes, helping the EU meet its goal of reducing SME compliance costs by 25%. The scorecard will create accountability and ensure that the benefits of the RTE reach businesses faster and more consistently across Europe.

The ethnographic approach adopted in this policy brief has proven instrumental in uncovering the real-world challenges that European entrepreneurs face when navigating the Single Market. By centring the experiences of business owners and managers, the business journey framework has offered a unique lens to examine systemic hurdles as they are lived and understood by those directly impacted. This method not only highlights the pain points in cross-border operations—such as administrative burdens, regulatory inconsistencies, and limited market access—but also contextualises these issues within the broader structural environment of the Single Market.

The business journey is more than a diagnostic tool; it sets the foundation for more systemic work on addressing the specific challenges faced by SMEs in immersive tech and virtual worlds. It provides policymakers with a tangible baseline for understanding how overarching issues trickle down to day-to-day business realities. This focus on lived experiences ensures that the resulting policy interventions are rooted in actual challenges rather than abstract assumptions.

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This groundwork offers a robust starting point for initiatives such as the development of a truly SME-scale 28th regime, which can directly address the pain points identified in the business journey. Similarly, it serves as a critical baseline for aligning other policy development efforts—such as harmonising regulations, reducing compliance costs, and fostering a real-time economy—with the practical needs of entrepreneurs.

Ultimately, by bridging systemic policy objectives with the granular realities of business operations, this approach ensures that the European digital economy can evolve in a way that is not only innovative and competitive but also inclusive and responsive to the needs of its most agile and dynamic actors: its SMEs and startups.

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