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COMPREHENSIVE BASELINE REPORT

AI UTILISATION IN CULTURAL AND CREATIVE INDUSTRIES ACROSS EUROPE

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Prepared for: CREMEL 2.0

Work Package 2 - Baseline Report

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Abstract

This comprehensive baseline study examined AI utilisation in Cultural and Creative Industries across five European regions – **Poland, Latvia, the Basque Country (Spain), Italy, and Hungary** – to understand the complex landscape of implementation challenges and emerging opportunities. Drawing on a mixed-methods approach that synthesised findings from national country research reports, case studies, and sectoral data analysis, the research investigated adoption rates, application patterns, implementation barriers, and success factors across diverse creative disciplines. Findings revealed that the gaming, audiovisual production, and design sectors consistently lead AI implementation efforts. In contrast, traditional creative sectors, such as the performing arts and crafts, remain cautious due to concerns about authenticity and creative integrity. Universal barriers emerged, including critical skills gaps among creative professionals, financial constraints, particularly affecting small and medium enterprises, inadequate infrastructure access in peripheral regions, and cultural resistance rooted in fears about the dehumanisation of creativity. Despite these challenges, significant opportunities were identified in cultural heritage preservation, accessibility enhancement, and innovative business model development. The study concluded that successful AI integration requires coordinated policy frameworks emphasising education and training, targeted financial support mechanisms, and hybrid approaches that position AI as a creative collaborator rather than replacement, thereby preserving cultural values while leveraging technological capabilities for artistic enhancement and operational efficiency.

Key words: Digital transformation, Innovation ecosystems, Artificial intelligence, Cultural and Creative Industries, European policy, technology adoption

1

National Context Analysis

1.1 CCI Sector Economic Significance

The participating countries demonstrate substantial economic contribution from their cultural and creative industries, though with varying scales and sectoral focuses.

Italy's CCIs generate €104.3 billion in direct added value as of 2023, employing over 1.55 million workers, representing one of Europe's most robust creative economies (Fondazione Symbola, 2024). When including indirect contributions, the overall added value of culture and creativity rises to approximately €296.9 billion, encompassing nearly 284,000 enterprises and more than 33,000 non-profit organisations.

Poland's creative sector comprises 135,000 enterprises as of 2021, with 99.2% classified as micro-enterprises, which employ 75.8% of sector workers (Central Statistical Office, 2023). The gaming sector alone experienced remarkable growth of 250% between 2018 and 2022, reaching PLN 6.03 billion, with 97% of production exported to foreign markets, demonstrating high international competitiveness (Polski Instytut Ekonomiczny, 2023).

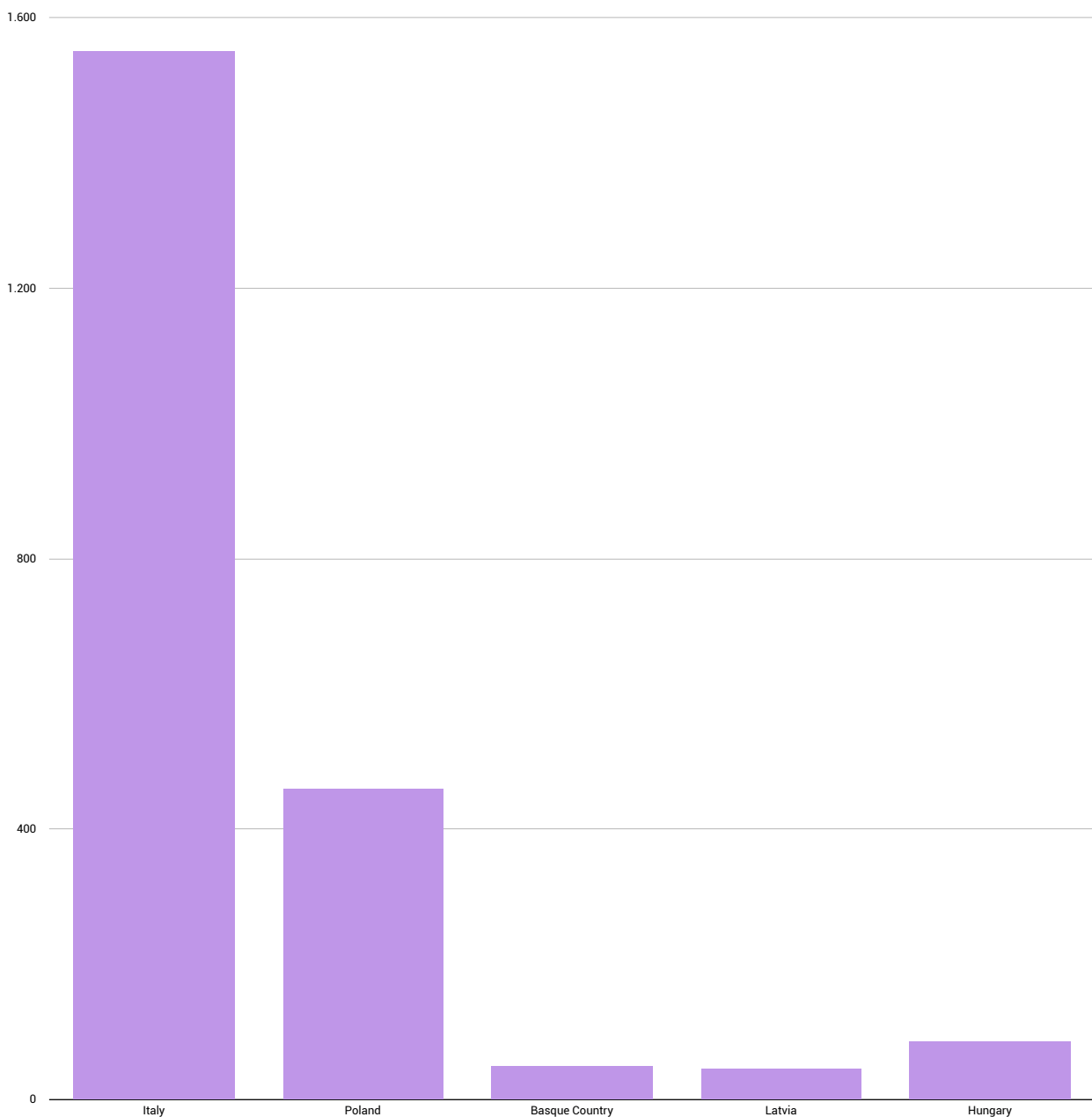
Hungary's design industry accounts for 1.1% of the nation's total economic output, demonstrating exceptional performance for a relatively young sector (Századvég Economic Research, 2024). Film production exhibits dynamic growth, significantly facilitated by state subsidies, with Budapest emerging as a major European film industry hub due to its favourable economic environment, highly trained professionals, and developed infrastructure (OECD, 2022).

Latvia presents a compelling growth trajectory, with the export share of CCI goods and services increasing dramatically from 5.82% in 2016 to 14.62% by 2019 (Ministry of Culture of the Republic of Latvia, n.d.). Before the COVID-19 pandemic, Latvia's cultural and creative industries demonstrated positive growth, with 12,900 creative enterprises in 2016 increasing by 0.2% by 2019, whilst total turnover in the sector rose by 0.4% over the same period.

The Basque Country demonstrates a significant economic contribution from its cultural and creative industries, with CCIs representing 10.25% of all businesses in the region, totalling approximately 16,000 creative companies. The sector employs around 50,000 workers, accounting for 5.29% of total regional employment. To put this in a national context, Spain overall hosts approximately 274,000 CCI-related companies. Despite this substantial presence, employment ratios remain below national averages due to the sector's structural characteristics, particularly the predominance of

micro-enterprises with 0-2 employees and a high concentration of freelancers and small-scale businesses. The sector has experienced steady growth driven by digital transformation, policy support, and increasing demand for creative content, with key economic drivers including the audiovisual industry, gaming, language services, and design sectors (GAIA/BDCC, 2024).

CCI Employment Across Countries (Thousands of Workers)

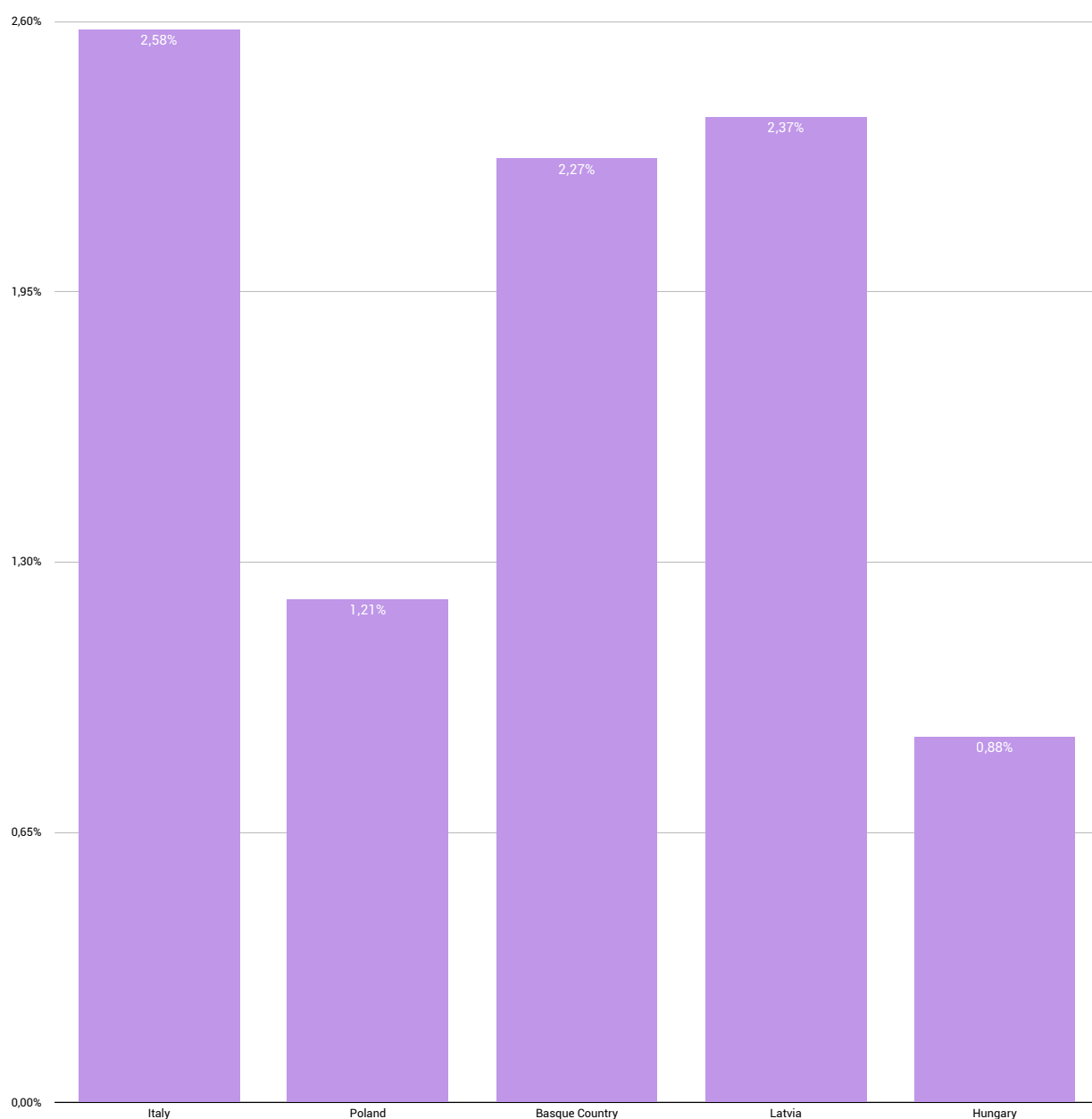


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CCI Employment as % of Total Population



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1.2 Sectoral Composition and Strengths

Across all participating countries, specific subsectors consistently demonstrate strength and potential for AI integration. **Gaming and software development** prove particularly prominent in **Poland and Italy, with Italy's software and videogames sector alone contributing €16.7 billion in added value**—approximately 16% of the entire cultural and creative economy—showing growth of over 10% compared to the previous year (Fondazione Symbola, 2024).

Audiovisual production maintains significance across all regions, presenting substantial opportunities for AI integration in post-production, content creation, and distribution workflows. The **design** and **architecture sectors** exhibit a robust presence, particularly notable in **Italy**, with a €8.6 billion contribution, and in Hungary, where the **design industry** has a disproportionate impact. **Publishing and printing** contribute €11.5 billion in **Italy**, employing over 196,000 people, making it the second-largest subsector in terms of employment.

The performing arts and visual arts maintain cultural vibrancy across regions and prove especially dynamic in southern areas like Puglia, although they exhibit high employment precarity, with 30.8% of workers on fixed-term contracts (Fondazione Symbola, 2024).

1.3 Geographic Distribution Challenges

A persistent pattern emerges across participating countries regarding the concentration of creative industries in capital cities and major urban centres. **Hungary** exemplifies this challenge most acutely, with Budapest serving as the overwhelming centre of the creative economy, thereby limiting the growth potential of regional creative industries and creating unequal access to funding, visibility, and professional networks outside the capital (Csite & Oláh, 2022).

Poland demonstrates similar concentration in major cities, particularly Warsaw and Kraków, whilst Latvia focuses creative activity primarily in Riga. **Italy** presents a somewhat more distributed model across Milan, Rome, Bologna, and Florence as primary hubs, yet still maintains significant urban concentration. **The Basque Country** shows relatively more distributed activity but continues to favour urban centres over rural creative communities.

This centralisation pattern creates systematic barriers for rural and peripheral creative communities seeking access to AI resources, funding opportunities, and professional networks. The geographic

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inequality particularly impacts smaller organisations and independent creators who lack the resources to relocate or maintain dual presences in major urban centres.

1.4 Research Methodology

This baseline report synthesises findings from six country research reports prepared by CREMEL 2.0 partner organisations during 2023-2024. Data collection methods varied by country but included:

- * Industry surveys
- * Statistical analysis of national CCI databases
- * Case study documentation
- * Policy document analysis

Adoption rate comparisons presented in this report are approximated due to significant methodological differences across national studies, which limits direct cross-country comparability and require careful interpretation of presented findings.

Survey Population Variations: The participating countries employed different target populations for data collection, creating fundamental comparability challenges. Italy's adoption figures derive from Deloitte Private's survey specifically targeting designers within the creative sector, providing sector-specific but professionally narrow insights (Deloitte Private, 2024). Conversely, the Basque Country's data encompasses broader creative business sectors through GAIA/BDCC's comprehensive industry survey, capturing a wider organisational perspective but potentially diluting sector-specific nuances (GAIA/BDCC, 2024). Poland's statistics represent general company adoption rates from KPMG's business survey rather than CCI-specific implementation data, while Latvia's findings concentrate exclusively on technology, media, and telecommunications industries rather than traditional creative sectors (KPMG, 2024; Danosa, 2024). These population differences mean that apparent variations in adoption rates may reflect survey scope rather than actual implementation disparities.

Definitional Inconsistencies: The interpretation of "AI adoption" and "recognition" varies substantially across studies, creating measurement validity concerns. Some surveys measure acknowledgement of AI's strategic importance for industry development, while others assess practical awareness of specific technological applications. Implementation definitions range

from experimental tool usage and pilot project deployment to systematic workflow integration and comprehensive organisational adoption. For example, Italy's "implementation" threshold may require regular professional usage, while other countries count occasional experimentation as adoption. This definitional variance means that identical organisational behaviours might be classified differently across national surveys, artificially inflating or reducing apparent adoption gaps.

Temporal and Sampling Disparities: Data collection occurred across different periods during 2023-2024, coinciding with rapid AI technological development and changing market awareness levels. Sample sizes vary dramatically across countries, from targeted professional surveys involving hundreds of respondents to broader industry studies encompassing thousands of enterprises. Geographic sampling strategies also differ, with some countries focusing on urban creative hubs while others attempt national representation. These temporal and sampling variations introduce systematic biases that compound direct comparison challenges.

Cultural and Linguistic Interpretation: Survey instruments developed in different languages and cultural contexts may carry inherent biases affecting response patterns. Questions about "creativity," "innovation," and "technological integration" may evoke different associations across European cultural contexts, influencing how respondents interpret and answer survey items. Additionally, varying familiarity with AI terminology across linguistic communities may affect comprehension and response accuracy.

Implications for Analysis: These methodological limitations necessitate treating presented adoption rates as indicative trends rather than precise comparative metrics. The report's analytical focus, therefore, emphasises pattern identification and qualitative insights over statistical precision. Where numerical comparisons appear, they should be interpreted as approximate indicators of relative positioning rather than exact measurements of adoption differences. Future research will benefit significantly from harmonised survey methodologies, standardised definitional frameworks, and coordinated data collection protocols to enable more accurate cross-national assessment of AI adoption landscapes in European creative industries.

Recommended Interpretation: Readers should consider adoption rate figures as estimates reflecting general technological engagement levels within each country's specific survey context, understanding that direct numerical comparisons may overstate or understate actual implementation differences due to these methodological variations.

2

AI Strategy and Policy Framework Analysis

2.1 National Strategic Approaches

The participating countries demonstrate varying levels of comprehensive AI strategy development, with some notable innovations alongside significant gaps in CCI-specific approaches. **Latvia** leads in institutional innovation, establishing Europe's first dedicated AI Centre in April 2025 with an annual allocation of approximately €370,000, representing a pioneering approach to coordinated AI development (Saeima, 2025). This centre aims to unite representatives from government, research, and the digital sector to plan AI industry development and identify strategic initiatives.

Hungary adopted its National Artificial Intelligence Strategy in 2020, with ambitious targets for achieving a 15% GDP increase by 2030 through the conscious utilisation of AI (VG, 2020). The strategy specifically supports digitalisation of creative industries and AI-based innovations, with particular attention to initiatives from the National Research, Development and Innovation Office.

Italy's "Strategia Italiana per l'Intelligenza Artificiale 2024-2026" outlines a comprehensive approach to AI development across multiple sectors, built on four pillars: research, public administration, enterprise, and education (Italian Department for Digital Transformation, 2024). The strategy promotes human-centred, ethical, and sustainable approaches to AI, aligned with EU values and goals. However, cultural and creative industries receive limited specific attention within the broader framework.

Poland's "Policy for AI Development" from 2020 supports creative sector digitalisation whilst emphasising the intersection of AI with cultural heritage preservation and digital creativity (Ministry of Digitisation, 2020). The document emphasises the importance of AI in automating creative processes, increasing the availability of cultural content, and protecting and digitising national heritage.

The Basque Country's approach aligns with broader European and national digital transformation strategies, incorporated within the Smart Specialisation Strategy (RIS3 Euskadi) and the Basque Digital Transformation Strategy 2025, which emphasises AI-driven innovation in audiovisual, gaming, and language industries.

2.2 Policy Gaps and Challenges

A significant policy gap emerges across all countries due to the lack of dedicated AI strategies specifically tailored to the cultural and creative industries. Most existing frameworks incorporate CCIs marginally within broader digital transformation initiatives rather than addressing the sector's unique requirements, challenges, and opportunities. This limitation particularly affects smaller cultural organisations and independent creators who struggle to access AI-related opportunities due to fragmented policymaking and funding structures.

2.3 Regulatory Framework Implementation

All participating countries actively implement EU AI Act requirements, demonstrating particular attention to copyright protection and authorship rights for AI-generated content. The regulatory focus encompasses transparency requirements for AI-generated cultural content, ethical AI governance principles, and comprehensive data protection compliance measures.

Italy has made notable progress with Senate approval of the Artificial Intelligence Bill (Butti bill), emphasising fundamental rights, security, copyright, healthcare, labour, and public administration principles. Poland's implementation emphasises protecting traditional cultural values whilst promoting innovation, particularly in heritage digitisation and cultural education contexts.

The regulatory approach across countries reflects a careful balancing of innovation encouragement and cultural protection, although specific frameworks for creative AI applications **remain underdeveloped compared to other sectors**.

2.4 Support Mechanism Diversity

Financial support mechanisms vary significantly across countries, reflecting different governmental approaches and resource availability. Italy offers comprehensive programs, including "Cultura Crea 2.0" for cultural heritage and tourism enterprises, "Transizione Digitale" for digital innovation in cultural organisations, and regional programmes managed by Invitalia, which provide substantial resources for creative industry development.

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The Basque Country leverages European programmes, including Creative Europe and Horizon Europe initiatives, supplemented by regional innovation policies within the framework of the Smart Specialisation Strategy. Hungary provides support through the AI Challenge programme, aiming to train one million individuals by 2030, complemented by NKFIH grants for AI-based creative industry projects.

Latvia combines EU Creative Europe funding with national digitalisation initiatives, whilst **Poland** utilises NCBR R&D projects and PARP grant programmes specifically targeting modern creative technologies. Despite this variety, smaller enterprises consistently report difficulties accessing funding due to complex application procedures and administrative burdens.

3

Current AI Adoption Landscape

3.1 Adoption Patterns and Rates

AI adoption across the participating countries reveals significant variation in both recognition and implementation levels. **The Basque Country** reports that 60% of creative businesses acknowledge AI's relevance to their operations, yet fewer than half have actively implemented AI-driven tools in their workflows (GAIA/BDCC, 2024).

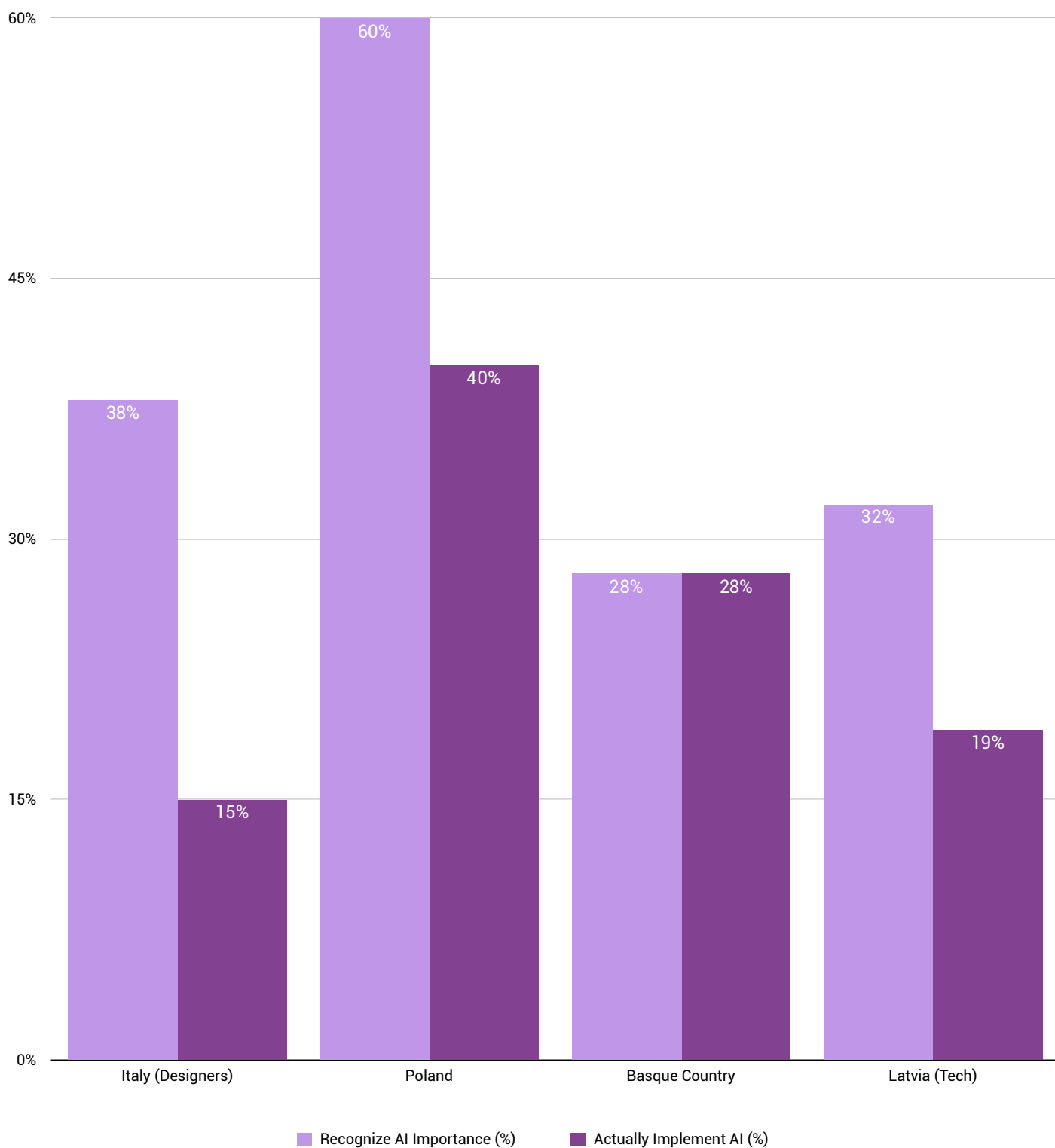
Italy presents a more cautious approach, with 38% of designers recognising AI as pivotal for the industry's future, whilst only 15% actively integrate AI tools into their creative processes (Deloitte Private, 2024). The Italian AI market reached EUR 1.2 billion in 2024, marking a 58% increase over the previous year, though only 7% of small enterprises and 15% of medium-sized enterprises have initiated concrete AI projects (Artificial Intelligence Observatory - Politecnico di Milano, 2024).

Poland demonstrates moderate adoption, with 28% of companies having implemented AI tools and an additional 30% planning implementation within the coming months; however, specific data for the creative sector remains limited (KPMG, 2024).

Latvia demonstrates leadership in the technology sector, with 32% of the technology, media, and telecommunications industries having experimented with AI tools, although only 19% use these tools regularly for work purposes (Danosa, 2024).

Hungary's adoption landscape reflects experimentation across multiple creative sectors, lacking comprehensive systematic data, which suggests widespread interest coupled with fragmented implementation approaches.

AI Adoption: Recognition vs Implementation



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This chart reveals a significant disparity between awareness of AI's potential and actual deployment across European creative industries, highlighting what can be termed the "AI implementation gap." **The Basque Country** demonstrates the highest recognition rate at 60% but achieves only 40% implementation, representing a 20-percentage-point gap between awareness and action.

Italy shows the most pronounced disconnect, with 38% of designers acknowledging AI's pivotal role for the industry's future while only 15% actively integrate AI tools – a substantial 23-percentage-point implementation deficit.

Latvia's technology, media, and telecommunications sectors show moderate recognition (32%) but significant implementation challenges, with only 19% regular usage despite initial experimentation.

Poland presents a unique case where recognition and implementation rates align at 28%, suggesting either more conservative expectations or a more realistic assessment of implementation capabilities. This pattern indicates that whilst awareness of AI's potential is growing across European creative sectors, substantial barriers persist in translating recognition into practical adoption.

Methodology and Data Limitations

The data presented derive from separate national studies employing different methodological approaches and target populations, which limits direct comparability. **Italy's** figures specifically focus on designers surveyed by Deloitte Private (2024), whilst **the Basque Country** data encompasses broader creative business sectors from GAIA/BDCC (2024). **Poland's** statistics from KPMG (2024) represent general company adoption rather than CCI-specific implementation, and Latvia's data from Danosa (2024) concentrates on **technology, media, and telecommunications industries** rather than traditional creative sectors. These measurements represent estimations from disparate sources rather than standardised cross-national metrics. The definitions of "recognition" and "implementation" vary across studies: some measure acknowledgement of AI's strategic importance.

In contrast, others assess awareness of industry relevance, and implementation ranges from

experimental usage to systematic integration into workflows. Additionally, the temporal variance in data collection (2023-2024) and the varying sample sizes across countries further limit the precision of comparative analysis. Future research will benefit from harmonised survey methodologies and consistent definitional frameworks to enable more accurate assessment of the AI adoption landscape across European creative industries.

3.2 Sectoral Leadership in Implementation

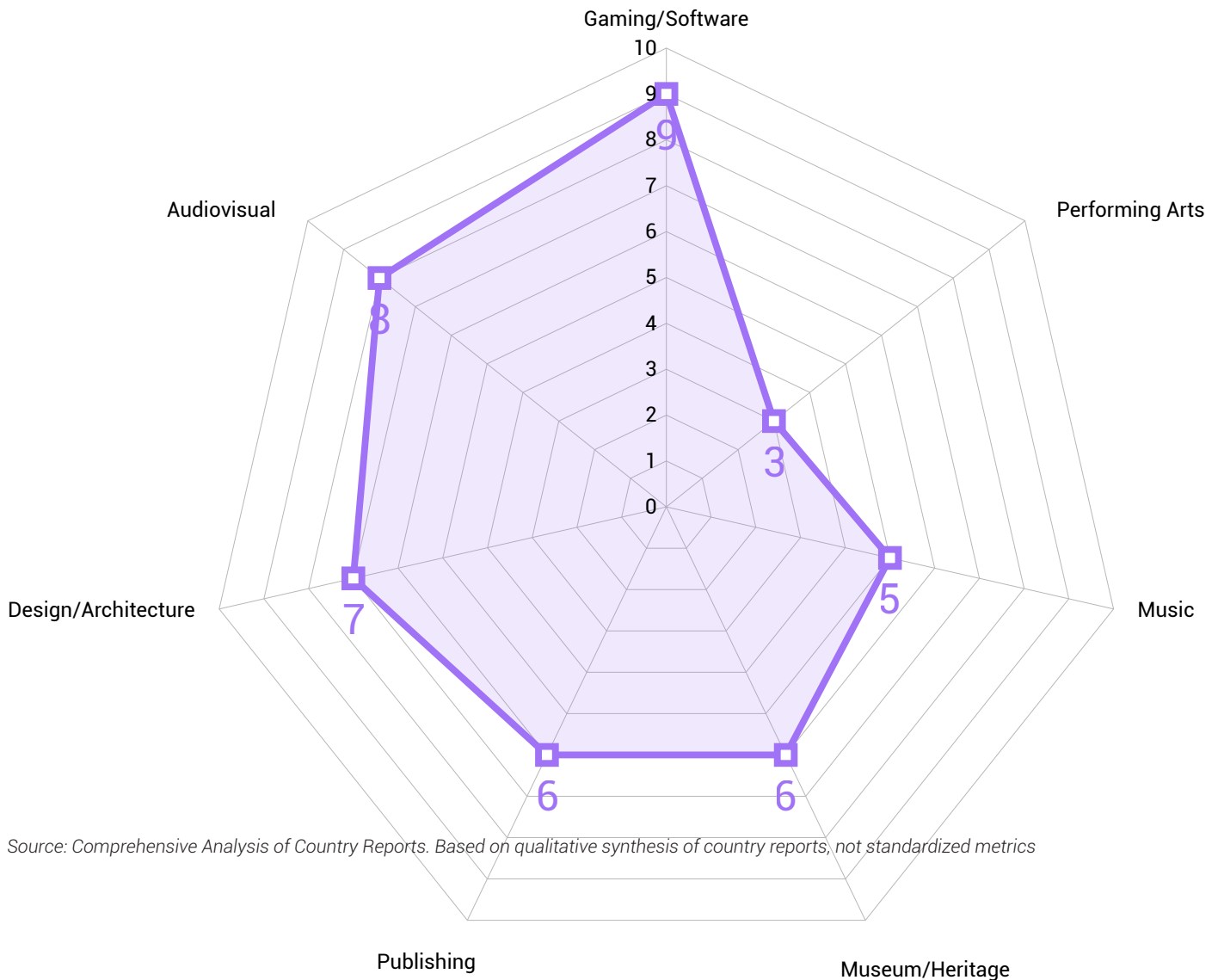
Gaming and software development consistently emerge as the highest adopters across all participating countries, driven by clear technical compatibility and immediate productivity benefits. These sectors demonstrate sophisticated integration of AI for procedural content generation, adaptive storytelling mechanisms, and enhanced player experience personalisation.

Audiovisual production represents the second-leading sector, utilising AI for automated editing processes, dubbing solutions, and visual effects generation. The Basque Country reports particularly impressive results with AI-assisted dubbing developed by Vicomtech, reducing localisation costs by 40% whilst accelerating content adaptation timelines by 60% through deep learning speech models and neural voice cloning.

The design and architecture sectors are showing strong adoption of generative AI tools for rapid prototyping, visualisation, and sustainability simulation purposes. Language technologies demonstrate significant potential, particularly in multilingual contexts like **the Basque Country and Latvia**, where AI supports translation, localisation, and voice synthesis for regional languages such as Euskera and Latvian.

Cultural heritage applications demonstrate growing sophistication in digital archiving, restoration planning, and visitor analytics, though implementation remains infrastructure-dependent. Conversely, **traditional performing arts, fine arts and crafts, and conventional publishing** (excluding experimental applications) continue to lag in adoption, reflecting cultural resistance, technical barriers, and unclear value propositions for these sectors.

■ Implementation Success Level (1-10)



Source: Comprehensive Analysis of Country Reports. Based on qualitative synthesis of country reports, not standardized metrics

This chart illustrates the relative maturity and effectiveness of AI adoption across different cultural and creative industry subsectors, rated on a scale from 1 (minimal success) to 10 (highly successful implementation). The analysis reveals a clear hierarchy of AI integration success, with **gaming and software development** leading at level 9, followed by **audiovisual production** at level 8, and **design and architecture** at level 7. These technology-adjacent sectors demonstrate the highest success rates due to their inherent compatibility with digital tools and clear value propositions for automation and enhancement. **Publishing** (level 6) and **museums/heritage** (level 6) occupy

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a middle ground, showing moderate success with experimental applications and pilot projects. **Music production** (level 5) reflects emerging but still limited adoption, primarily in niche experimental contexts. The **performing arts** (level 3) exhibit the lowest implementation success, reflecting significant cultural resistance and unclear integration pathways within traditional live performance contexts.

Methodology and Data Limitations: This assessment represents a qualitative synthesis based on a comprehensive analysis of the country research reports rather than standardised quantitative metrics. The success levels were derived by evaluating multiple indicators mentioned across the reports, including: adoption rates where available, reported efficiency improvements, cost reductions, market expansion, and overall sector readiness for AI integration.

Specific evidence includes **the Basque Country's** documented 40% cost reduction in AI-assisted dubbing (audiovisual sector), **Poland's 250% gaming industry growth** correlating with AI adoption, and **Italy's design sector** showing 38% recognition vs. 15% implementation rates. However, it is essential to note that this chart represents an estimate based on qualitative evidence from country reports, **rather than precise statistical measurements**. The participating countries (**Poland, Latvia, Basque Country, Italy, and Hungary**) do not maintain standardised AI adoption metrics across creative sectors, necessitating this interpretive approach. Future research would benefit from developing consistent measurement frameworks to enable more precise cross-sector and cross-national comparisons of AI implementation success in cultural and creative industries.

4

AI Application and innovation Analysis

4.1 Content Generation and Creative Enhancement

Creative professionals across participating countries increasingly utilise AI for content generation and creative enhancement purposes. **Visual arts** applications of tools like Midjourney, DALL-E, and Stable Diffusion have gained widespread adoption for concept development, mood boarding, and iterative design processes. **Italian designers**, in particular, leverage these platforms for early-stage visual ideation, branding development, and creative prototyping, with younger professionals and freelancers showing the highest integration rates.

Writing and editorial applications demonstrate growing sophistication, with ChatGPT and Claude supporting editorial workflows, content summarisation, and automated planning tasks. Small publishers and independent authors across countries are experimenting with AI for synopsis generation, keyword optimisation, and style-checking processes, although large-scale systematic integration remains limited.

Music production shows emerging potential through platforms like AIVA, Soundraw, and Amper Music for composition assistance and original score generation. Italian composer Marco Odino's experimental project exemplifies hybrid creative processes, utilising ChatGPT for lyric generation and Midjourney for visual artwork creation, demonstrating a successful balance between AI-generated materials and human creative intuition.

Architecture and design sectors leverage AI for parametric design, Building Information Modelling automation, and sustainability simulations. Italian firms particularly utilise tools like Rhino+Grasshopper with AI plugins for complex architectural form generation, thermal performance simulation, and environmental impact assessment.

4.2 Production and Workflow Optimisation

Production workflow optimisation represents a major application area where AI demonstrates clear value propositions across creative sectors. Audiovisual production benefits significantly from automated editing, colour correction, and content tagging systems, with Hungarian post-production studios like Colorfront and Focusfox reporting substantial efficiency improvements in production timelines (Harrison, 2023).

Gaming industry applications include sophisticated procedural content generation, dynamic environment creation, and adaptive storytelling mechanisms that respond to player behaviour patterns. **Polish** companies implement advanced simulation technologies, contributing to the sector's remarkable 250% growth between 2018 and 2022.

Publishing sector workflow optimisation encompasses content curation, audience analytics, and automated distribution optimisation. Publishing platforms like PublishDrive utilise AI-based solutions for book distribution and marketing optimisation, demonstrating practical applications for smaller publishers seeking market expansion.

Museum and cultural heritage applications focus on visitor behaviour analysis, personalised recommendation systems, and digital archive enhancement. The Hungarian National Museum's implementation of AI-driven chatbots and interactive exhibitions demonstrates the successful integration of technology with cultural education objectives.

4.3 Notable Innovation Examples

Several exceptional innovation cases demonstrate AI's transformative potential in cultural contexts. **Latvia's** Ziedonis Museum created an AI-synthesised voice of deceased poet Imants Ziedonis using over eight hours of archived recordings, providing visitors with unique guided garden tours that honour the poet's unfulfilled dream of becoming a gardener (Team Tilde, 2024). This project received the prestigious Latvian Museum Association Annual Award for innovative cultural heritage interpretation.

Poland hosted its first AI Art Festival in 2024, exploring the intersection of art and artificial intelligence through competitions, exhibitions, and panel discussions, promoting AI use in artistic creation while addressing ethical considerations. The festival included presentations from ML in the PL Association and demonstrations of AI applications in creative processes.

Hungary achieved a significant milestone with Duna TV's introduction of Bíró Ada, the country's first AI-generated television presenter, co-hosting the science programme Delta. This implementation represents the cutting-edge integration of advanced language and visual models in broadcast media, sparking widespread discourse on AI's evolving role in journalism and television production.

In the **Basque Country**, we can also see notable examples of innovative AI usage. For example, We Love Glams is a creative studio transforming museums through AI-assisted curatorial tools, digital twins of artworks, and immersive technologies like AR and VR. Their most innovative contribution lies in using AI to create interactive, personalised cultural experiences that engage younger audiences and reimagine access to heritage. By blending technology with storytelling, they are setting a new standard for AI-driven cultural preservation and engagement.

Italy's "Strolling Cities" art installation at the Venice Biennale 2021 exemplified sophisticated AI-art collaboration, utilising generative algorithms trained on urban imagery and historical narratives to produce dynamic poetic interpretations of Italian cities, demonstrating AI's potential for deepening cultural engagement whilst maintaining artistic integrity.

5

Implementation Landscape and Support System

5.1 Infrastructure and Educational Foundation

The participating countries benefit from a generally robust educational and research infrastructure supporting creative and technological innovation. Universities such as Politecnico di Milano, MOME in **Hungary**, the University of **Latvia**, and technical universities across **Poland** provide advanced training in **design, media**, and digital technologies, though AI-specific programming for creative professionals remains limited.

Hungary's Moholy-Nagy University of Art and Design stands out for conducting AI-based architectural research and offering specialised training programmes that integrate technological innovation with creative practice (MOME, 2023). **Italy's** institutions, including IULM, ISIA, and Domus Academy, increasingly introduce AI-related modules, particularly in design thinking, computational creativity, and data-driven storytelling applications.

The availability of technical infrastructure varies significantly between urban and rural areas across all countries. Whilst major cities generally provide adequate digital infrastructure and cloud computing access, peripheral regions face limitations that restrict AI experimentation and implementation opportunities for smaller creative organisations.

Financial support mechanisms exist through various national and regional programmes, though accessibility and effectiveness vary considerably.

Italy's "Cultura Crea", "Smart&Start Italia", and regional POR FESR funds provide essential support for innovation, while the **Basque Country** effectively leverages European programmes through its regional innovation policies. However, complex application procedures and administrative requirements often limit access for smaller cultural operators.

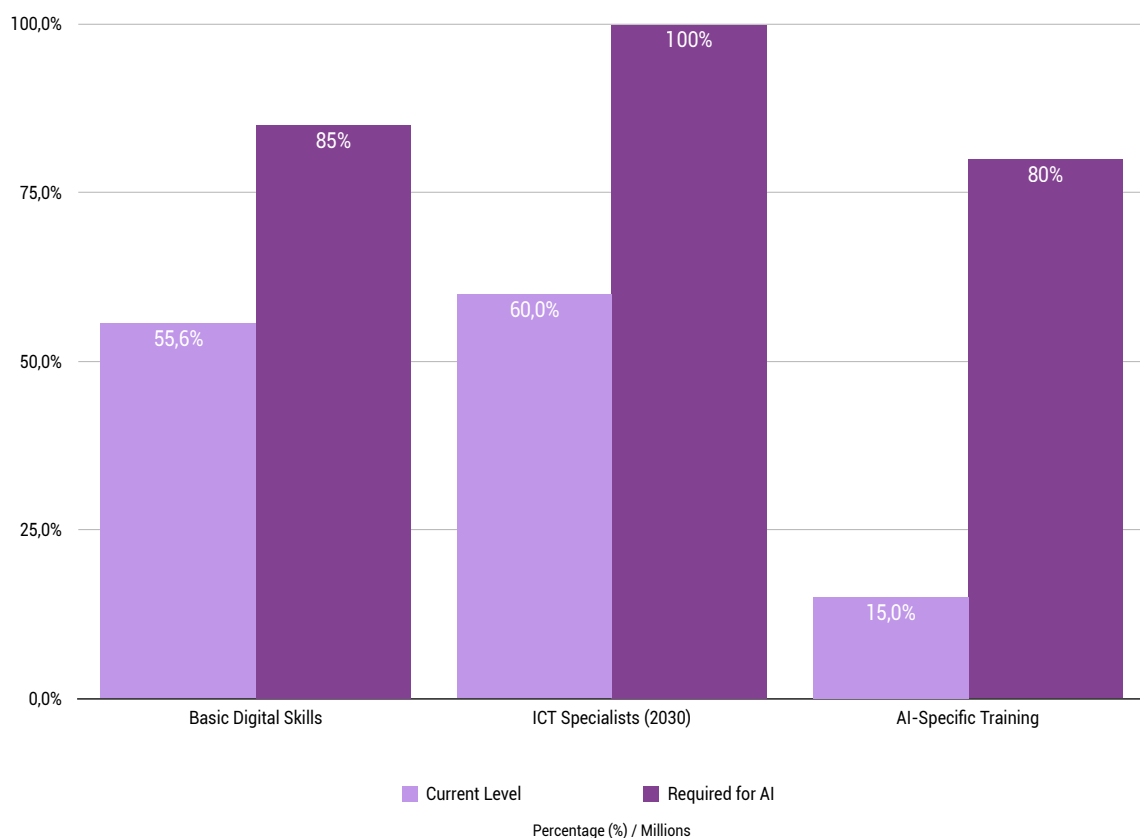
Industry networks play crucial roles in ecosystem building and knowledge sharing. Organisations such as Puglia Creativa, GAIA/BDCC, CICC, and various national chambers of commerce facilitate collaboration between universities, private technology firms, incubators, and creative businesses, although their geographic reach remains uneven across regions.

5.2 Systematic Challenges and Barriers

Technical challenges pose significant implementation barriers, particularly for smaller creative enterprises that lack access to high-performance computing resources, cloud-based AI solutions, and advanced machine learning tools. Many creative professionals struggle with integrating AI into their existing workflows, as available solutions often target broader industries rather than addressing the specific requirements of the creative sector.

Data quality and availability issues particularly affect applications that require local language support or culturally specific content. Basque-language AI tools, whilst improving, require further refinement for accuracy and usability in translation, content generation, and voice synthesis applications. Similar challenges exist for other regional languages and cultural contexts across participating countries.

Skills gaps represent the most universally cited barrier across all countries. Latvia reports that only 45.3% of the population possesses basic digital skills, falling below the EU average of 55.6% (European Commission, 2024). This deficit particularly impacts creative professionals who lack the technical expertise necessary for effective AI tool utilisation, creating dependencies on external expertise or resulting in underutilisation of available technologies.



Source: European Commission Digital Skills Index 2024, EU Digital Decade Report 2024

The EU Digital Skills Gap chart reveals a fundamental crisis threatening AI integration across Europe's CCIIs. The data demonstrates three critical deficiencies: only 55.6% of EU citizens possess basic digital skills compared to the 85% baseline required for AI interaction, current ICT specialist availability (12 million) falls 40% short of 2030 requirements (20 million), and merely 15% of the workforce has AI-specific training versus the 80% coverage needed for competitive adoption (European Commission, 2024).

These interconnected gaps create a particularly acute challenge for CCIIs, where **99.2% of enterprises operate as micro-businesses** with limited resources for technical expertise acquisition (Central Statistical Office, 2023).

The skills deficit manifests clearly in the implementation patterns observed across CREMEL countries. While creative businesses demonstrate awareness of AI's strategic importance, they struggle with practical deployment, as evidenced by **Italy's** designers recognising AI's pivotal role (38%) yet achieving minimal integration rates (15%) (Deloitte Private, 2024).

Similarly, the **Basque Country** exhibits a 20-percentage-point gap between AI recognition (60%) and implementation (40%), contrasting with **Poland's** aligned rates (28%) that suggest more realistic capability assessment (GAIA/BDCC, 2024). This awareness-implementation disconnect reflects the broader European challenge where geographic and sectoral variations compound existing barriers.

The skills crisis intersects critically with financial constraints, creating systemic vulnerabilities for creative enterprises. The combination of inadequate technical competencies and limited funding access, with 69% of creative SMEs reporting financial barriers and 38% citing AI knowledge deficiencies, positions European CCIIs at risk of marginalisation in an increasingly AI-driven global creative economy (European Commission Creative Industries Survey, 2024). The extremely competitive innovation landscape, exemplified by the EIC Accelerator's 5.9% success rate, further constrains opportunities for skills development and AI adoption among resource-limited creative enterprises (European Innovation Council, 2025). Without coordinated intervention addressing basic digital literacy, specialist development, and AI-specific training, European CCIIs face a significant competitive disadvantage in global markets where AI-enhanced creativity increasingly defines industry leadership.

Financial constraints also disproportionately affect small and medium enterprises across all regions. Whilst funding mechanisms exist, smaller creative businesses frequently lack financial

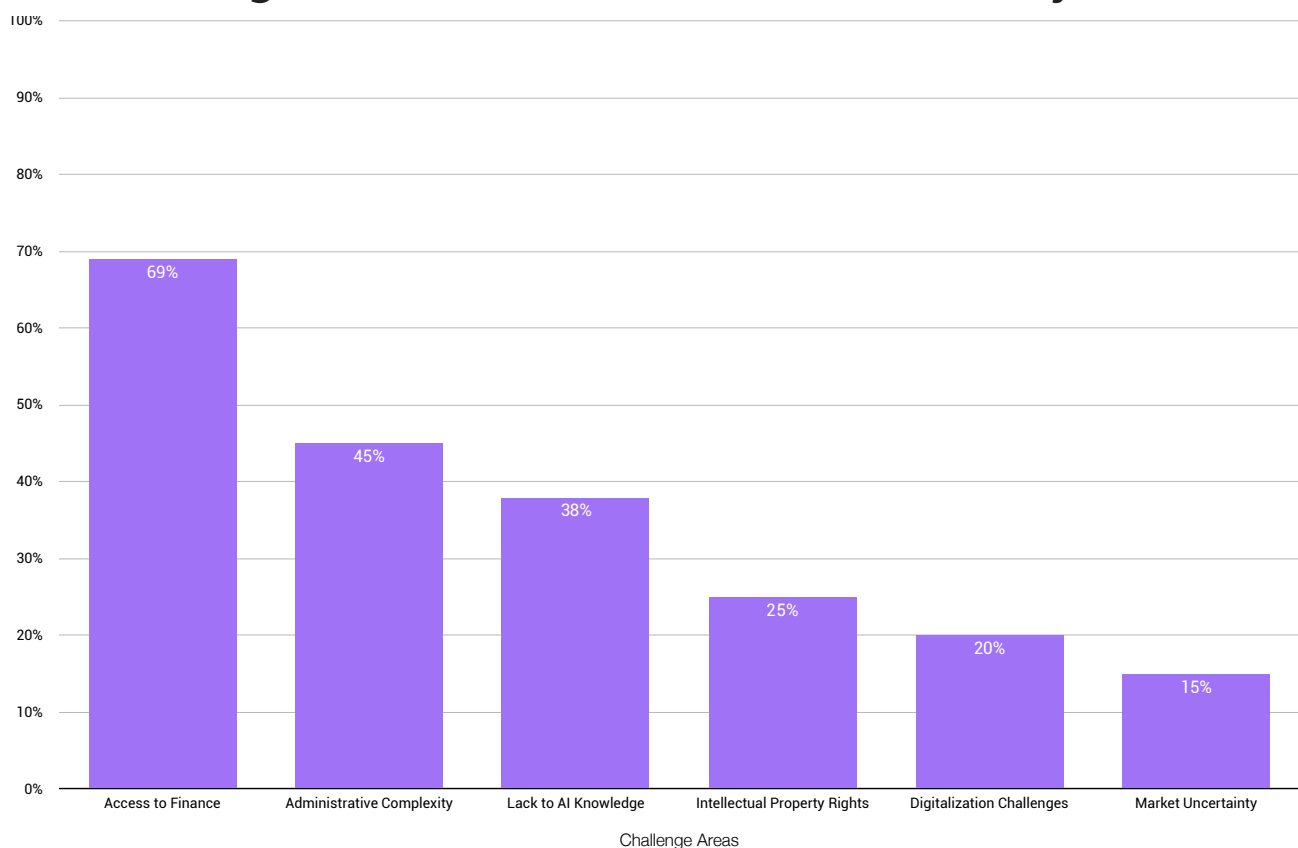
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capacity for AI infrastructure investment, software licensing, and specialised training. Administrative complexity in accessing available funding creates additional barriers, with many organisations struggling to navigate application procedures successfully.

Funding Access Barriers for Creative Industry SMEs



Source: European Commission Creative Industries Survey 2024, Cultural and Creative Sectors Guarantee Fund Report

This analysis reveals significant structural barriers preventing creative SMEs from accessing innovation funding, directly supporting the baseline report's findings on financial constraints. Access to finance emerges as the primary obstacle (69% of respondents), followed by complex administrative procedures (45%) and lack of familiarity with AI applications (38%).

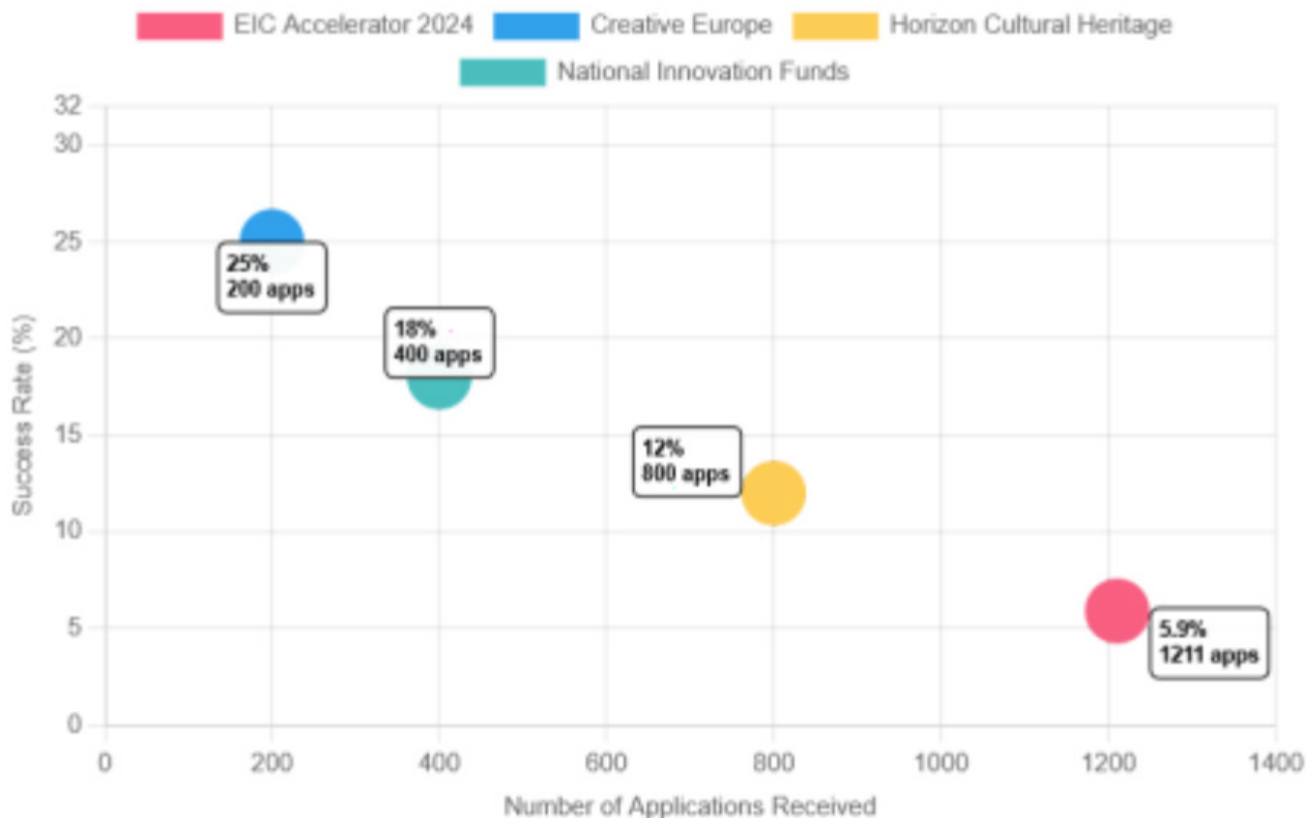
The Creative Europe programme's €2.44 billion budget and the Cultural and Creative Sectors Guarantee Fund's €250 million allocation have reached only 1,547 SMEs to date, representing less than 0.1% of the 284,000 creative enterprises across the EU. This data validates the country reports' consistent findings that smaller enterprises struggle to navigate funding mechanisms, particularly for AI-related innovations, where technical expertise requirements compound administrative complexity.

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European Innovation Funding Success Rates vs Competition Intensity



Source: European Innovation Council Impact Report 2025, EIC Accelerator Statistics 2024

This chart demonstrates the competitive landscape facing innovative creative enterprises seeking EU funding support. The EIC Accelerator, Europe's flagship innovation programme, shows a success rate of just 5.9% (71 selected from 1,211 proposals), indicating extremely high competition for breakthrough technology funding. Cultural and creative applications face additional challenges, as the EIC prioritises deep-tech sectors with only minimal allocation for creative technologies. The €1.4 billion EIC budget generates €2.6 billion in additional private investment, demonstrating strong leveraging potential, yet creative industries remain underrepresented in this ecosystem.

This data contextualises the baseline report's emphasis on policy framework development and targeted support for creative AI applications, highlighting the need for sector-specific innovation pathways rather than competition within general technology programmes.

Cultural resistance also emerges from legitimate concerns about AI's impact on creative authenticity and human artistic value. Traditional creative sectors, particularly in countries with strong artisanal heritage, express scepticism about machine involvement in creative processes. These concerns reflect deeper questions about the nature of creativity, authorship, and cultural identity in an AI-enhanced environment.

Ethical concerns span intellectual property rights, authorship recognition for AI-generated content, transparency in algorithmic decision-making, and potential bias in AI systems. Creators across countries express uncertainty about copyright frameworks' ability to protect their works adequately, whilst unclear legal precedents for AI-generated content discourage broader experimentation and adoption.

5.3 Success Factors and Enabling Conditions

Successful AI implementation in creative contexts depends on several critical enabling conditions that emerge consistently across participating countries. **Adequate digital infrastructure and reliable internet connectivity** form essential foundations, though availability varies significantly between urban and peripheral regions. Access to cloud computing resources and AI platforms enables experimentation and scaling, whilst integration capabilities with existing creative software determine practical implementation feasibility.

Organisational readiness proves equally crucial, requiring leadership commitment to innovation and change management. The most successful implementations feature hybrid teams that effectively combine creative sensibility with technical competence, creating collaborative environments where artists and technologists work together rather than in isolation. Implementation approaches that achieve sustained success typically follow phased integration strategies, beginning with pilot projects before attempting full-scale adoption.

This approach allows organisations to build internal capacity, understand AI capabilities and limitations, and develop workflows that integrate seamlessly with existing creative processes.

Human-AI collaboration models emerge as particularly effective, positioning AI as a creative assistant that augments human capabilities rather than replacing artistic decision-making. The most successful projects maintain clear human oversight and creative control while leveraging AI for tasks such as rapid iteration, pattern recognition, and technical optimisation.

6

Comparative Analysis of Regional Approaches

6.1 Common Patterns and Divergent Strategies

Despite geographic and cultural differences, participating countries demonstrate remarkable similarity in their AI adoption challenges and opportunities. Skills gaps represent universal barriers, though specific manifestations vary based on existing educational infrastructure and digital literacy levels. Financial constraints affect SMEs consistently across regions, whilst cultural resistance patterns reflect similar concerns about authenticity and creative integrity.

However, strategic approaches diverge significantly based on national priorities and the availability of resources. **Latvia's** establishment of a dedicated AI Centre represents a significant institutional innovation, while **Hungary's** focus on university-led research reflects its academic strength in creative education. **Italy's** regional approach leverages existing development agencies and funding mechanisms, while the Basque Country emphasises industry cluster development and participation in European programs.

Poland's emphasis on cultural heritage preservation through AI applications aligns with the country's rich historical legacy, whilst the **Basque Country's** multilingual focus addresses specific regional language preservation needs. These differences suggest that successful AI strategies must adapt to local cultural contexts, economic structures, and institutional capabilities rather than following universal models.

6.2 Sectoral Variations and Specialisations

Certain sectors demonstrate consistent leadership across countries, whilst others show regional specialisation patterns. **Gaming and software development** maintain a strong leadership position in AI adoption, reflecting their technical compatibility and clear value propositions. **Audiovisual production** shows strong performance across regions, though specific applications vary based on local industry strengths and market focus.

Design and architecture sectors demonstrate sophisticated adoption in **Italy** and **Hungary**, reflecting strong educational foundations and industry demand. **Language technologies** show particular development in multilingual regions like **the Basque Country and Latvia**, where AI supports cultural preservation alongside commercial applications.

Cultural heritage applications vary significantly based on institutional capacity and policy priorities. Countries with strong **museum networks** and digitalisation initiatives show more advanced implementation, whilst regions with limited cultural infrastructure face greater barriers to adoption.

7

Future Outlook and Emerging Opportunities

7.1 Technological Evolution and Market Potential

The trajectory of AI development suggests increasingly sophisticated applications will become available for creative industries, with multimodal systems capable of handling text, image, audio, and video simultaneously. These developments will enable more immersive storytelling formats and real-time creative collaboration between humans and AI systems.

Context-aware AI tools trained on localised cultural datasets offer particular promise for heritage institutions and regional content creators seeking to preserve and reinterpret cultural identity in digital formats. Development of AI models that understand regional languages, dialects, and cultural contexts could address current limitations in language technologies and cultural representation.

Personalised and adaptive content creation represents a growing market opportunity, enabling cultural organisations to provide customised experiences for diverse audiences. AI-driven cultural tourism applications could also enhance visitor experiences whilst supporting local creative economies.

7.2 Economic and Social Impact Projections

AI adoption in creative industries is likely to reshape business models, employment patterns, and creative practices across participating countries. Subscription-based platforms for AI-powered creative tools may democratise access to sophisticated capabilities whilst creating new revenue streams for technology providers and creative professionals.

Collaborative creation models where AI functions as a creative partner rather than a tool could redefine concepts of authorship and artistic value. These developments require new legal frameworks, professional standards, and ethical guidelines to ensure fair recognition and compensation for human creativity.

The potential for AI to enhance accessibility in cultural experiences could significantly expand audience reach and social impact. AI-powered translation, audio description, and adaptive interfaces could make cultural content available to previously underserved communities.

8

Comprehensive Recommendations

8.1 Policy Framework Development

National governments should develop comprehensive AI strategies that specifically address the unique requirements, opportunities, and challenges of the cultural and creative industries. These strategies must integrate CCI considerations throughout broader national AI frameworks rather than treating creative applications as afterthoughts. Cross-ministry coordination mechanisms should ensure coherent policy approaches across **culture, education, economy, and technology portfolios.**

Regulatory frameworks require a careful balance between innovation encouragement and cultural protection. Clear guidelines for AI use in creative contexts should address copyright and intellectual property rights for AI-generated content, transparency requirements for AI use in cultural productions, and ethical standards specific to creative applications.

8.2 Industry Support and Infrastructure

Financial mechanisms should be restructured to improve accessibility for **small and medium enterprises in creative sectors.** Dedicated AI innovation funds for creative industries should complement existing programmes, with simplified application processes and reduced administrative burden. Tax incentives for AI adoption in cultural sectors could accelerate implementation whilst supporting experimental projects with uncertain commercial outcomes.

Infrastructure development must address persistent **urban-rural disparities in digital access** and capabilities. Investment in peripheral region connectivity should be complemented by shared AI computing resources for creative communities, innovation labs and makerspaces with AI capabilities, and support for open-source AI tool development tailored to creative applications.

8.3 Educational Reform and Capacity Building

Educational system reform should integrate AI literacy throughout creative education curricula, whilst developing interdisciplinary programmes that effectively combine creativity with technology. Teacher training in AI applications for creative subjects is essential, alongside pathways for technical professionals to enter creative industries and contribute to hybrid approaches.

Professional development programmes must address the needs of established creative professionals seeking to integrate AI capabilities. Continuous learning programmes should be developed for different creative disciplines, with AI competency frameworks providing clear progression paths.

8.4 Research and Innovation Promotion

Research and development funding should prioritise culturally-sensitive AI applications that reflect European values and diversity. Support for the development of local language and cultural AI models could address current limitations while encouraging experimentation with new forms of human-AI collaboration.

Collaboration facilitation through hackathons, innovation challenges, and international exchange programmes could accelerate knowledge sharing and best practice development. Corporate-cultural institution partnerships should be encouraged alongside platforms for sharing successful AI implementation cases.

Conclusion

The comprehensive analysis of AI utilisation in cultural and creative industries across **Poland, Latvia, the Basque Country, Italy, and Hungary** reveals both significant potential and substantial challenges facing Europe's creative sectors. Whilst AI adoption accelerates across gaming, audiovisual production, and design applications, success remains uneven and dependent on addressing persistent barriers in skills development, infrastructure access, and cultural adaptation.

The research demonstrates that successful AI integration requires a careful balance between technological capability and cultural authenticity. The most effective approaches position **AI as a creative collaborator rather than a replacement**, maintaining human agency and artistic vision while leveraging computational capabilities for enhancement and efficiency. This finding has profound implications for policy development, educational programming, and industry support mechanisms.

Skills development emerges as the most critical challenge across all participating countries, requiring comprehensive responses that span formal education, professional development, and public awareness initiatives. The persistent urban-rural divide in access to AI resources and opportunities demands targeted infrastructure investment and support for peripheral creative communities.

The CREMEL 2.0 project's findings provide a proper foundation for collaborative effort, highlighting both opportunities and responsibilities facing Europe's cultural and creative industries during this transformative period. Success will ultimately depend on the creative sector's ability to shape AI development according to its values and needs, ensuring technology serves cultural enrichment rather than displacement.

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