CREMEL 2.0
CREATIVE MEDIA LAB

Artificial intelligence adoption among European cultural and creative professionals

A multi-national interview compilation study

Abstract

This study examines artificial intelligence adoption patterns across cultural and creative industries in **6 European nations** (Hungary, Latvia, the Basque Country, Poland, Estonia, and Italy) through **64 semi-structured interviews** with creative professionals across **12 creative sectors.** The research investigates how creative industries navigate the tension between technological innovation and cultural preservation, revealing significant variations in AI adoption levels, implementation strategies, and philosophical approaches.

Key findings indicate that **while 80% of professionals predict high AI impact within five years** (7.4/10 average rating), **current effectiveness ratings remain moderate** (5.67/10), revealing a **"transformation anxiety"** where professionals are sceptical about present capabilities yet convinced of AI's inevitable dominance. The study identifies **critical barriers**, including **inadequate training infrastructure, financial constraints, and fundamental concerns about creative authenticity.** Sectoral analysis shows **digitally-influenced creative sectors embracing AI** as practical tools, such as design and architecture, **while fundamentally human-centred cultural sectors express deep resistance**, including publishing and performing arts, fearing threats to human expression.

A crucial pattern emerges in what professionals describe as **"peripheral integration"** - the deliberate strategy of **keeping AI away from core creative acts** while leveraging it for administrative tasks, concept generation, and technical production. Professionals consistently frame AI as **"a pencil in our hands while the thought remains with us"**, treating it as a collaborative partner that provides suggestions rather than final solutions. The research concludes that successful AI integration requires **sector-specific training** featuring **hands-on workshops led by practitioners**, **sustainable funding models, clear ethical frameworks** addressing copyright and authorship concerns, and deliberate strategies to ensure **AI augments rather than replaces human creativity.** The overwhelming message from practitioners emphasises **developing both technical AI skills and strengthening uniquely human creative abilities** while maintaining critical oversight.

Keywords

artificial intelligence, creative industries, cultural sector, digital transformation, AI adoption, European creative economy, human-AI collaboration, creative technology, cultural preservation, innovation barriers, peripheral integration, transformation anxiety

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1. Introduction and research overview

Research question

How are European cultural and creative industries adopting artificial intelligence, and what factors shape their integration strategies across different national and sectoral contexts?

Study scope

This research examines AI adoption patterns through extensive fieldwork across:

- ώ **6 European nations**: Hungary, Latvia, the Basque Country, Poland, Estonia, and Italy
- ώ **12 creative sectors**: Education, Fashion, Journalism, Film and video production, Museums and heritage, Music, Performing arts, Publishing, Video games, Advertising, Architecture, and Design/digital arts
- ώ **64 in-depth interviews** with creative professionals

Distribution of interviewees

Sector	Number of Interviewees	Percentage
Design/Digital Arts	8	12.5%
Film/Video Production	7	10.9%
Publishing	6	9.4%
Museums/Heritage	6	9.4%
Journalism/Media	6	9.4%
Architecture	5	7.8%
Music	5	7.8%
Performing Arts	5	7.8%
Education	5	7.8%
Advertising	4	6.3%
Fashion	4	6.3%
Video Games	3	4.7%
Total	**64**	**100%**

Key research findings

1. **The AI paradox**: Professionals rate current AI effectiveness at 5.67/10 but predict 7.4/10 future impact, revealing widespread "transformation anxiety"

2. **Peripheral integration strategy**: Creative professionals deliberately keep AI away from core creative acts while using it for supporting tasks

3. **Sectoral divide**: Technical fields embrace AI while traditional arts maintain deliberate distance

4. **Resource inequality**: Well-funded institutions advance while regional organizations risk obsolescence

5. **Training vacuum**: 85% rely on self-directed learning due to absent formal education programs, with strong preference for practical, hands-on workshops

6. **Cultural preservation concerns**: Strong emphasis on maintaining human creativity and authenticity, with AI framed as "a tool in our hands while the thought remains with us"

7. **Generational divide**: Younger professionals naturally embrace AI tools while older practitioners show resistance, creating workforce tensions.

2. Research methodology

Data collection framework

The research employed qualitative methodology through semi-structured interviews:

- **Interview structure**: 15 thematic sections with approximately 50 core questions
- **Duration**: 60-90 minutes per interview
- **Sampling method**: Purposive sampling for sectoral and national representation
- **Data collection period**: May - July, 2025
- **Response rate**: 85.9% for quantitative metrics (55 of 64 participants)

Interview protocol sections

1. General AI usage patterns
2. Current implementation levels
3. Effectiveness assessments
4. Training and skills development
5. Financial investment

6. Infrastructure requirements
7. Ethical considerations
8. Business transformation
9. Sectoral challenges
10. National contexts
11. Future projections
12. Strategic planning
13. Collaboration patterns
14. Risk assessment
15. Recommendations

Key questions explored with practitioners

The research specifically investigated eight critical implementation questions:

What are the most important trends in AI adoption?

How can creative professionals prepare for the technological boom?

What training formats would be most useful for different sectors?

Which tasks can AI effectively replace without eliminating human added value?

What are the biggest concerns among professionals?

Does AI mean a threat to human creative values and skills?

How can critical human thinking be preserved while using AI?

How to use AI properly (asking the right questions and giving proper instructions)?

Quantitative metrics and limitations

Important note: All quantitative values derive from self-reported assessments and reflect subjective perceptions rather than independently verified metrics.

Participants provided numerical assessments on:

AI familiarity levels (1-10 scale)

Effectiveness ratings for creative processes (1-10 scale)

Projected five-year transformation impacts (1-10 scale)

Preferred automation levels (1-5 scale)

Budget allocations (percentage estimates)

Efficiency gains (percentage estimates)

Data analysis approach

- ώ **Primary method**: Thematic analysis to identify patterns across interviews
- ώ **Coding framework**: Systematic extraction of insights regarding adoption, challenges, and opportunities
- ώ **Comparative analysis**: Cross-national and cross-sectoral pattern identification
- ώ **Synthesis process**: Iterative refinement maintaining contextual sensitivity while integrating direct practitioner perspectives

3. Quantitative analysis and practitioner perspectives

AI familiarity level segmentation
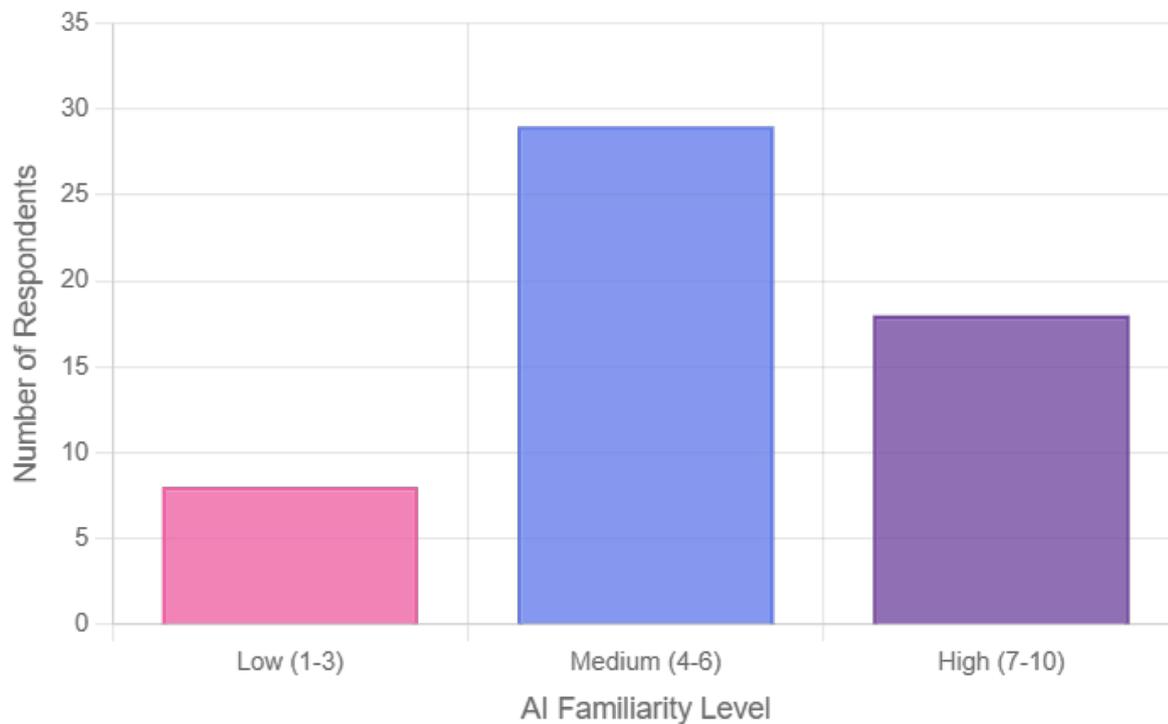
Source: CREMEL 2.0 Interviews

The 5.93 mean score with concentration in the 4-6 range indicates:

1. **Transitional phase**: The creative industries are in an active learning phase, beyond initial exposure but before expertise
2. **Pragmatic engagement**: Professionals know enough to extract value but not enough to maximize potential
3. **Uneven distribution**: The medium average masks significant variation between early adopters (32.7% scoring 7-10) and laggards (14.5% scoring 1-3)
4. **Knowledge ceiling effect**: Many professionals plateau at functional competence without advancing to strategic mastery

Key metrics:

Low familiarity (1-3): 14.5% (8 respondents)

Medium familiarity (4-6): 52.7% (29 respondents)

High familiarity (7-10): 32.7% (18 respondents)

Mean score: 5.93/10

Causes and implications of medium-level dominance

The concentration at medium familiarity (52.7% scoring 4-6/10) reveals three critical dynamics shaping AI adoption in creative industries:

Root causes

1. Absence of structured learning pathways. The 85% reliance on self-directed learning creates a natural ceiling at functional competence. As one advertising professional states: *"Training means self-teaching in this industry."* Without formal education frameworks, professionals plateau at tool-specific knowledge rather than developing a systematic understanding.

2. Economic constraints on exploration. The €20/month subscription threshold represents a significant decision point for many practitioners. Limited budgets restrict experimentation to 1-3 essential tools, preventing broader exploration that would deepen familiarity.

3. Rapid technological change. The pace of AI development outstrips professionals' capacity for continuous learning. By the time practitioners master one tool, new capabilities emerge, maintaining a perpetual majority of medium-level competence.

Strategic implications

This medium-level equilibrium creates a **competence trap**: professionals know enough to resist training *("we already use AI")* but lack sufficient depth for transformative implementation. The result is incremental efficiency gains rather than revolutionary creative innovation.

The 32.7% at high familiarity (7-10/10) gain disproportionate competitive advantages, while the majority risk becoming what one educator called *"the mediocre middle that will disappear."* This polarization threatens to restructure creative industries around technical capability rather than artistic merit.

Intervention opportunities

The medium concentration represents optimal conditions for targeted intervention. These professionals possess sufficient baseline knowledge to benefit from advanced training without requiring basic digital literacy education. Three specific interventions could catalyze advancement:

1. **Sector-specific intensive workshops** bridging the gap between general AI awareness and domain expertise

2. **Subsidized tool access,** removing the €20 barrier to experimentation

3. **Peer learning networks** leveraging the knowledge of high-familiarity practitioners to elevate the medium majority

The window for intervention is critical. As AI capabilities accelerate, the gap between medium and high familiarity will widen, potentially creating irreversible competitive disparities.

Distribution of AI adoption maturity across respondents
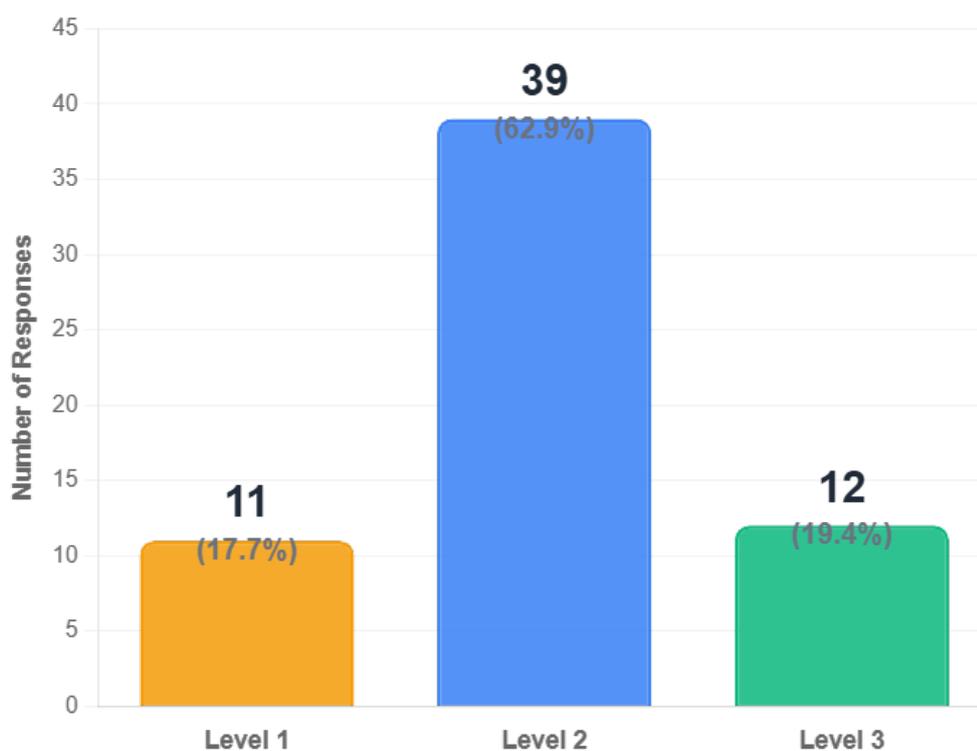
Source: CREMEL 2.0 Interviews

Adoption levels defined:

ὦ **Level 1** (17.7%): Unconscious use of AI-embedded software

ὦ **Level 2** (62.9%): Conscious use of AI systems/software

ὦ **Level 3** (19.4%): Custom AI development for their organizations

Key insight: The predominance of Level 2 adoption reflects a pragmatic equilibrium — professionals leverage accessible AI tools for immediate value without requiring extensive investment or expertise. This conscious middle represents what practitioners describe as "peripheral integration" - deliberately keeping AI away from core creative acts while using it extensively for supporting functions.

The practical AI applications listed below reveal that artificial intelligence permeates multiple points of the value chain, yet professionals consistently preserve the core act of creation as exclusively human territory.

Administrative and workflow tasks (Most common usage)

> Email drafting and communication
>
> Translation services
>
> Transcription (especially journalism/media)
>
> Documentation and report writing
>
> Meeting summaries and note-taking
>
> Grant applications (particularly in performing arts and museums)

Creative development (Collaborative usage)

> Concept generation and ideation
>
> Brainstorming and creative exploration
>
> Script and dialogue writing/enhancement
>
> Visual concept development
>
> Rapid prototyping
>
> Initial design iterations

Content production (Efficiency-focused)

> Text generation and editing
>
> Image generation and enhancement
>
> Marketing material creation
>
> Social media content and scheduling
>
> Newsletter production

Research and analysis (Information processing)

Content research and synthesis

Market analysis and trend identification

Audience analysis and insights

Data preprocessing and analysis

Information gathering and summarization

Technical production (Automation of repetitive tasks)

Layout generation (design)

Code assistance (basic programming)

Post-production editing (film/video)

Soundscape generation (performing arts)

UI/UX design (games/digital)

Resin dosing monitoring (manufacturing)

Quality control (Verification and optimization)

Plagiarism detection (publishing)

Fact-checking assistance (journalism)

Grammar and style checking

Content optimization

This "peripheral integration" strategy is exemplified by the publishing professional who rated AI effectiveness at just 3/10, insisting that "AI shouldn't override self-expression (at most supplement it)... Sincerity in the intention to communicate is essential — purely utilitarian approaches are not healthy."

Why Level 2 dominates:

Delivers immediate value without technical expertise

Modest investment (€20/month) yields effective outcomes

Allows professionals to maintain creative control while gaining efficiency

As one publisher notes: *"highly effective outcomes can often be achieved through modest expenditures, such as a €20 monthly subscription, which meets most operational needs"*

Barriers to Level 3:

Zero dedicated AI budgets

Costs exceed direct returns

Financial constraints override strategic interest

Concerns about losing authentic creative identity

Overall, the concentration of adoption at **Level 2 reflects a rational and sustainable approach** within the creative industries. Professionals in this category have surpassed the stage of unconscious or incidental use, yet refrain from pursuing custom solutions due to financial constraints and the adequacy of existing tools. This **"conscious middle"** is likely to persist as a defining characteristic of AI integration in the creative sectors - engaged in adoption, yet selective in investment, strategically positioned between leveraging available capabilities and pioneering bespoke developments.

Preferred automation level distribution
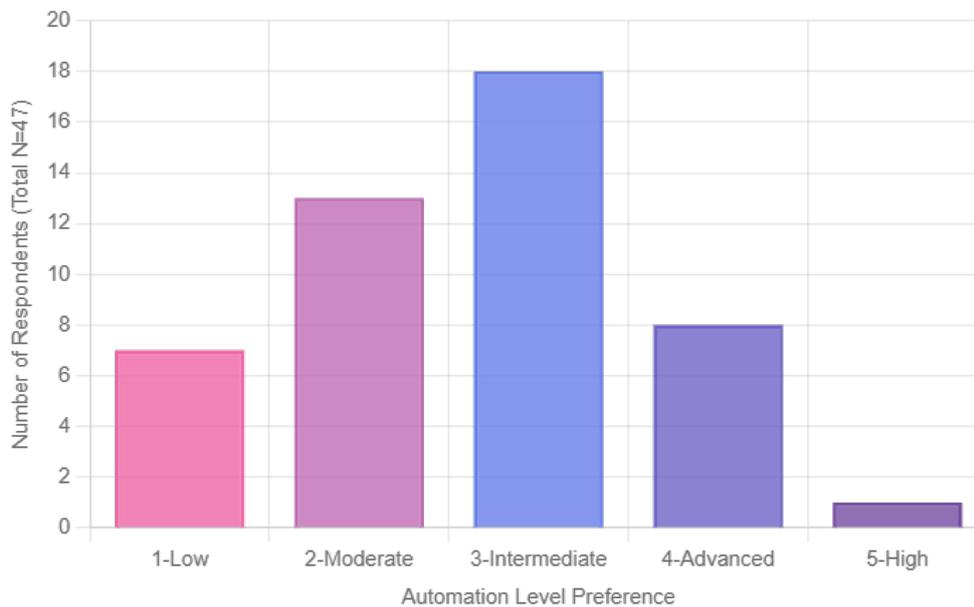
Source: CREMEL 2.0 Interviews

Distribution pattern:

Low automation preference: 14.9%

Medium-low: 25.5%

Medium: 38.3%

Medium-high: 19.1%

High automation: 2.1%

Why medium automation dominates

1. The creative control imperative. The bell curve distribution reflects professionals' determination to preserve what they consider irreducible human elements in creative work. As practitioners consistently articulate, AI should remain *"a collaborative partner that provides suggestions, not final solutions…"* This isn't technological conservatism but strategic positioning — maintaining approximately 50% human involvement ensures creative ownership and authenticity.

2. Risk mitigation strategy. The low percentage seeking high automation (2.1%) suggests professionals recognize existential risks in full automation. Medium automation allows efficiency gains without triggering client concerns about "machine-made" creative work or internal anxieties about professional obsolescence.

3. Quality assurance requirements. Creative industries operate on reputation and trust. Medium automation enables professionals to leverage AI's speed while maintaining human quality control — essential when, as multiple interviewees noted, AI outputs require extensive verification and refinement.

Strategic implications

This medium automation preference creates a **sustainable competitive position** where professionals can:

Achieve 20-60% efficiency gains on routine tasks

Maintain premium pricing for "human-crafted" work

Adapt gradually to technological change without disrupting core business

However, it also reveals potential vulnerabilities. Organizations committed to medium automation may be disrupted by competitors who either:

- ὼ **Fully embrace automation** (achieving dramatic cost reductions)
- ὼ **Reject automation entirely** (claiming superior authenticity)

The path forward

The medium automation preference shouldn't be viewed as resistance but as pragmatic adaptation. The challenge isn't pushing professionals toward higher automation but optimizing the human-AI collaboration at their chosen level. This requires:

1. **Tools designed for creative oversight** rather than full automation
2. **Workflows that formalize the 50/50 human-AI split**
3. **Client education** about the value of human-guided AI creation

The data suggests creative professionals have found their equilibrium — the question is whether this represents optimal positioning or a transitional compromise that will shift as AI capabilities and market expectations evolve.

How creative professionals evaluated the effectiveness of AI in creative processes (Scale 1-10)
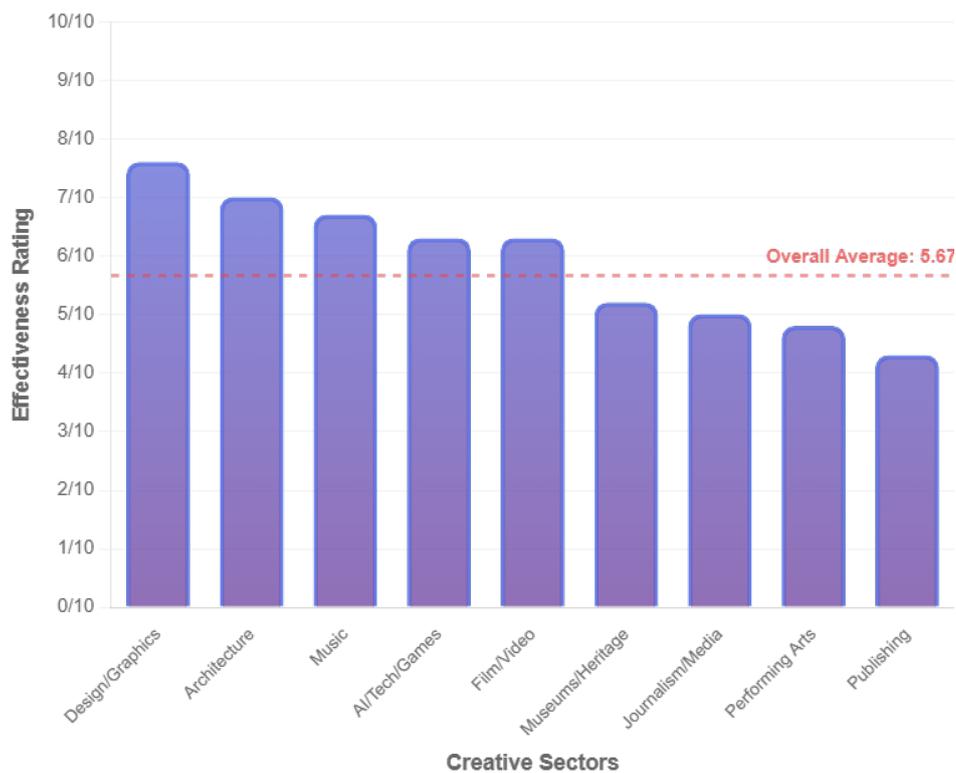
Source: CREMEL 2.0 Interviews

1. Fundamental conceptual differences:

- ώ **Tool-oriented sectors** (Design, Architecture): View AI as enhancing problem-solving capabilities
- ώ **Expression-oriented sectors** (Publishing, Performing Arts): See AI as threatening authentic human creativity

The 3.3-point gap reflects a philosophical split: technical sectors see creativity as problem-solving that AI can accelerate, while traditional arts see it as human expression that cannot be automated.

High-rating sectors (7.0-7.6/10) like Design and Architecture view AI as a practical tool that enhances their existing workflows. As one designer from Italy (8/10 rating) explains: *"AI has significantly impacted our business operations by improving the efficiency and quality of both creative and repetitive tasks... freeing up time for our team to focus on strategic and innovative activities."*

These fields already work extensively with digital tools, making AI a natural evolution. An architect notes: *"It has improved my design speed, enhanced collaboration, and enriched conceptual exploration."*

Low-rating sectors (3.0-4.8/10) like Publishing and Performing Arts express deep concerns about AI threatening the essence of human creativity. A publishing professional (3/10 rating) articulates this fear: *"AI shouldn't override self-expression (at most supplement it)... Having a personal narrative is very important... Sincerity in the intention to communicate is essential — purely utilitarian approaches are not healthy."*

2. What creatives currently use AI for versus what they want:

Current usage focuses on efficiency and support, but professionals express clear desires for AI development that respects creative autonomy:

- **Augmentation, not replacement**: Tools that enhance human capabilities
- **Control and transparency**: Understanding how AI makes decisions
- **Cultural sensitivity**: Preservation of local creative traditions
- **Ethical clarity**: Clear guidelines on copyright and attribution
- **Selective automation**: AI for mundane tasks, humans for creative decisions

3. The fear beneath the surface:

As one performing arts director articulates: *"The primary obstacle is not technical but conceptual... The risk lies in users becoming subservient to the tool rather than mastering it."*

This reveals the deepest fear: not job loss, but the gradual erosion of what makes creative work fundamentally human — the messy, embodied, politically charged humanity that defines artistic expression.

How do interviewees see the impact of AI development on the creative industry over the next 5 years

Low Impact (1-3): n=2 (5%) Medium Impact (4-6): n=6 (15%)
High Impact (7-10): n=32 (80%)
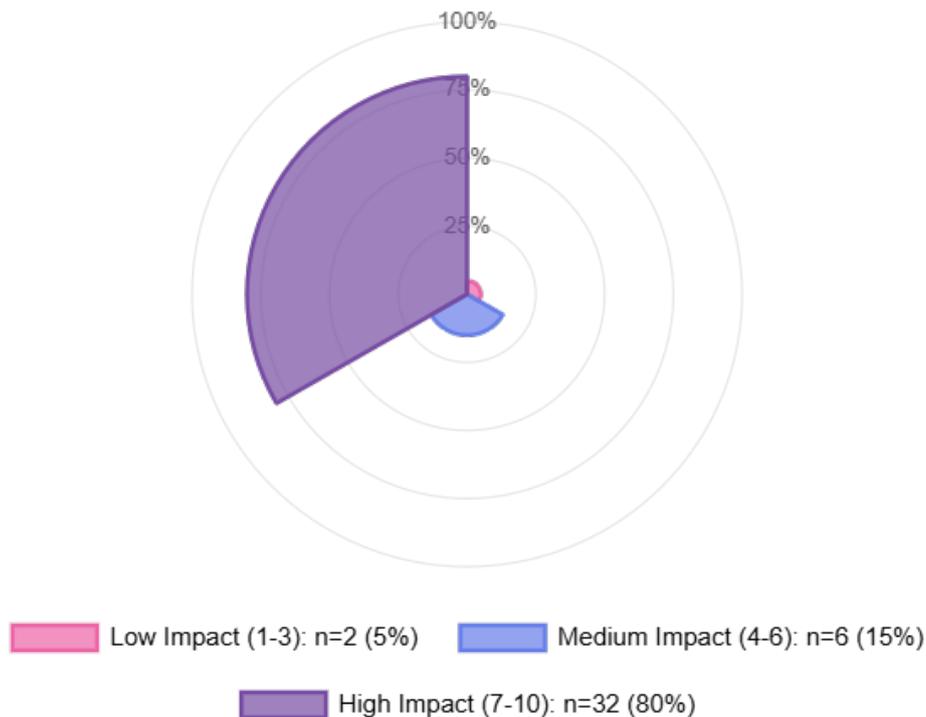
Source: CREMEL 2.0 Interviews

Temporal discontinuity in AI impact assessment

Key finding: Pronounced discrepancy between current effectiveness ratings (M=5.67/10) and future impact projections (M=7.40/10) reveals "transformation anxiety" among creative professionals.

The paradox manifests in three patterns:

1. Skepticism - conviction duality. Professionals simultaneously express doubt about present capabilities while maintaining certainty about future transformation. Example: Digital Arts practitioner rates current effectiveness at 3/10 but projects 9/10 future impact.

2. Inevitability discourse. Respondents frame AI adoption as a survival imperative rather than a strategic choice:

> Film industry: *"Companies that don't adapt will face existential threats."*
> Education sector: *"The mediocre middle will disappear"*
> Library science: *"Impact will be significant... we must steer the process"*

3. Anticipatory adaptation. Despite limited current implementation, professionals demonstrate preparatory behaviors:

Immediate skill acquisition priorities

Strategic positioning for future markets

Foundational digital literacy development

Theoretical implications: This temporal discontinuity suggests belief in AI's transformative potential functions as a self-fulfilling prophecy, driving adoption independent of current technological limitations. The five-year projection period creates a liminal phase characterized by preparatory behaviors rather than full operational integration.

Critical note: One respondent raises concerns about *"existential risks that aren't being adequately addressed",* suggesting awareness of potential negative consequences alongside transformation expectations.

4. Current state of AI adoption across nations

Latvia

Key AI adoption trends in Latvia

AI adoption in Latvia's creative sector is primarily informal and individually driven, with limited institutional support. Most professionals use ChatGPT regularly, though primarily for administrative rather than core creative tasks. As one interviewee put it, *"It's really a daily tool"* used for emails, translation, formatting, and project proposals.

Sector-specific insights

Advertising and production lead in adoption, leveraging a wide range of commercial AI tools to expand workflows significantly. Architecture shows similarly advanced use, applying AI from concept to visualization stages. In contrast, traditional performing arts institutions and public cultural bodies show a lower adoption pace, citing generational resistance, low digital skills, and slow digital transitions. Libraries show moderate uptake, limited by awareness gaps and cautious attitudes toward AI.

Geographic and institutional divides

A clear divide exists between state-funded cultural institutions and private enterprises, with the former constrained by outdated infrastructure and low digital proficiency. **Generational and linguistic barriers also affect adoption**; younger, English-speaking professionals tend to engage more actively with AI. While urban-rural differences are less explicit, regional professionals describe feeling isolated from technological shifts.

Professional preparation and self-learning

Most professionals rely on self-directed learning rather than formal training. Common learning approaches include:

- YouTube tutorials and online videos
- Paid online courses (Udemy mentioned specifically)
- Newsletter subscriptions
- Trial and error experimentation

The absence of sector-specific, Latvian-language training emerges as a critical gap. One architect notes taking *"courses on Udemy, participated in workshops by PAACADEMY,"* all international resources requiring English proficiency.

Current training landscape and needs

Formal training remains fragmented. While isolated efforts exist (e.g., journalist workshops by Helve), most professionals request:

- Practical, hands-on workshops
- Sector-specific training (e.g., tailored for museums)
- Latvian-language resources
- Integration guidance for existing workflows

One educator emphasizes the need for conceptual understanding: *"Everyone using AI should listen to a few lectures about how these models work... If you understand the math and logic behind it, you're already quite smart."*

Perceived Barriers to Adoption

Beyond training, professionals identify several obstacles:

- **Technical infrastructure** - Outdated computers and software
- **Ethical concerns** - Questions about authorship and copyright
- **Quality and reliability** - As one publicist notes, *"AI almost never says 'I don't know' or flags its limitations – it just lies."*
- **Economic constraints** - Limited budgets for tools and training
- **Cultural resistance** - Fear of job displacement and skepticism about AI's role in creative work

Conclusion

Latvia's creative sector faces a familiar paradox: while AI offers urgent efficiency gains, implementation remains constrained by **limited resources, infrastructure, and training**. The sector must balance global innovation pressures with local cultural values. Targeted, culturally sensitive training — especially in Latvian — will be essential to prevent a widening gap between internationally oriented professionals and those focused on domestic audiences. As one respondent summarized, success depends on treating AI *"as a tool, not a replacement for the creative process."*

The Basque Country (Spain)

Key AI adoption trends in the Basque Country

AI uptake across the Basque Country's creative sector remains uneven. Most organizations are still in exploratory phases, with adoption typically led by individual professionals using commercial tools like ChatGPT and Firefly. A small number exhibit advanced integration, using AI daily for writing, ideation, dialogue enhancement, and visual production, treating it as a co-creative assistant.

Leading sectors include:

- **Film and media production**, where AI supports content generation, summarization, and metadata tagging
- **Design and 3D visualization**, applying AI to accelerate rendering and creative development
- **Digital education**, exemplified by the University of the Basque Country, developing applications such as a Basque-language eye-tracking writing system

Slower-adopting fields include traditional publishing, where ethical concerns limit experimentation, and music/dance, which acknowledge AI's relevance but lack practical applications. Museums present a mixed picture, with some shifting focus toward Web3 rather than AI.

Institutional and geographic divides

A clear divide exists between academic institutions and commercial enterprises. Universities possess research capacity but face slow internal adoption due to bureaucratic limitations. Public institutions struggle with inflexible procurement cycles, which hinder timely adoption. Small creative firms cite budgetary limitations and rely on basic tools; as one noted, *"We don't have a dedicated AI budget — we're cautious with emerging technologies."*

Professional preparation and learning

Self-directed learning dominates. Interviewees frequently described gaps in digital literacy, even in basic tools like Excel. Practical, hands-on learning is strongly preferred over theoretical instruction. A film professional summarized the prevailing mindset: *"Start small, stay curious, and experiment constantly. AI should empower creative instincts — not replace them."*

Cross-disciplinary skill needs

Professionals stress the value of hybrid competencies that combine technical and creative fluency. As one heritage specialist put it, future talent must blend *"3D design, Unity, historical literacy, architectural analysis, and map reading"* to operate effectively in AI-enhanced environments.

Training landscape and needs

Spain's training infrastructure receives mixed reviews. While one interviewee considers it *"excellent, with top-level instructors and an increasing number of specialized courses,"* most identify significant

gaps. The primary criticism centers on the lack of strategic training that teaches *"when and how to apply technologies, not just technical know-how."*

Online platforms like Domestika fill some gaps, but professionals seek more comprehensive programs. The University representative identifies a *"notable gap in interdisciplinary training,"* noting that *"students frequently acquire technical knowledge only once they start working, not during their studies."*

Perceived training needs:

- Digital literacy as a foundation for AI use
- Strategic thinking around AI's role and application
- Sector-specific case-based instruction
- Ethical and legal frameworks
- Cross-disciplinary, project-based formats

Several professionals emphasized the importance of understanding underlying AI logic — beyond tool usage — enabling more creative and critical application.

Multiple interviewees emphasize the need for understanding AI systems' underlying logic. As one interviewee advocates for *"understanding how AI systems work internally, so professionals can apply the underlying logic creatively instead of just using tools superficially."*

Conclusion

The Basque Country's creative industries are at a pivotal moment. While awareness and enthusiasm for AI are growing, practical barriers — limited infrastructure, funding, institutional inertia, and skills gaps — slow deeper integration. Yet strong educational institutions, an emerging cohort of early adopters, and a cross-disciplinary mindset offer opportunities. Moving forward will require bridging the divide between technical capacity and creative culture, ensuring that AI is embedded ethically and strategically, amplifying rather than diluting the region's creative identity.

Poland

Key AI adoption trends

AI use in Poland's creative sector is emerging, marked by cautious experimentation and limited institutional integration. Tools such as ChatGPT, Gemini, and Claude are employed for content creation and editing, while image generation platforms (e.g., MidJourney, DALL·E, Firefly) support visual ideation. Despite growing awareness, most applications remain supportive rather than central to creative workflows.

One noted divide lies between conscious and unconscious AI use; professionals often use AI-powered tools (e.g., autocorrect, GPS) without recognizing their underlying systems. A theater interviewee reflected: *"Many tools we use rely on AI, but we're often unaware of it."*

Sector-specific insights

Leading sectors:

- ώ **Marketing and Media** show the highest adoption rates, with professionals actively integrating AI into daily workflows. One media professional reported using AI for *"automation cycles"* and noted that *"companies that employ 50 or 100 people may have a completely different approach to this topic."*
- ώ **Graphic design** demonstrates strong practical adoption, particularly in photo editing and visualization. A design professional explained: *"Lightroom now offers smart overlays and filters that automatically correct a whole series of photos. They can also eliminate repetitions."*

Moderate adoption:

- ώ **Museums and cultural institutions** are exploring AI primarily for visitor engagement and exhibition enhancement. One museum professional described plans to use AI to "bring a painting to life" for an upcoming exhibition, viewing it as a tool to make content "more attractive" especially for younger audiences.

Slower-adopting sectors:

- ὡ **Performing Arts** shows minimal conscious adoption. A theater representative admitted: *"As for the conscious use of tools based on artificial intelligence, I have to admit that in the theater we are unlikely to do so. Neither I nor, as far as I know, other employees reach for such solutions on purpose."*

Institutional and geographic divides

A clear gap exists between public cultural institutions and private enterprises. The former face:

> Limited budgets for tools or training
>
> Outdated IT infrastructure (e.g., no internal servers)
>
> Bureaucratic procurement processes

Generational divides further affect uptake; younger professionals are more open to AI, while older colleagues often remain skeptical. Urban–regional disparities are implied: one professional from Kielce expressed concerns about lagging technologically.

How Professionals Are Preparing for AI

AI-related knowledge is mostly self-taught, through:

> YouTube tutorials and online resources
>
> Trial-and-error
>
> Webinars and informal peer learning

Few participants reported attending structured training. A museum professional rated their own competency at *"3 out of 10"*, highlighting the widespread perception of inadequate readiness.

Identified Training Needs:

> Practical, hands-on workshops using real case studies
>
> Sector-specific training tailored to micro-specializations
>
> Step-by-step guidance to counter participant confusion
>
> Legal and ethical literacy, particularly around copyright and attribution

Conclusion

Poland's creative sector also sits at an inflection point, shaped by enthusiasm but hindered by fragmented knowledge and infrastructure gaps. Marketing and design professionals lead adoption, while public institutions lag due to funding and access constraints. The widespread reliance on self-learning shows initiative but reflects systemic failure to support professional upskilling. **Moving forward requires practical, affordable, and sector-specific training; improved infrastructure for public institutions; and clear ethical frameworks.**

Estonia

Key AI adoption trends

AI engagement across Estonia's creative sector is notably high. **All interviewees reported using AI tools professionally and personally**, often rating their familiarity between 6–9 out of 10. Adoption shows a clear shift from experimentation to strategic integration, with emphasis on leveraging existing platforms like ChatGPT, MidJourney, Claude, Runway, and Evoto rather than building proprietary systems.

Professionals take a pragmatic approach, applying AI throughout the creative value chain — from ideation to automation of marketing processes. As one noted, *"AI is integrated across the workflow."*

Sector-specific insights

Leading sectors:

- ὡ **Tech/AI services**: develop custom AI tools for clients, demonstrating advanced proficiency
- ὡ **Social media and digital marketing**: use AI for trend analysis, audience segmentation, and hybrid solutions
- ὡ **Photography and design**: employ AI at all stages from concept generation to post-production

Moderate adoption:

- ὡ **Video production and gaming**: selectively apply AI in administrative or early-stage ideation
- ὡ **Academic research**: use AI for analysis and content generation, while maintaining ethical caution

Common applications include content generation, image manipulation, workflow automation, and translation — reflecting broad integration across disciplines.

Institutional and structural divides

While no major geographic disparities were reported, institutional differences are clear. Structured AI training opportunities remain limited, with significant variation in support based on organization type. Key divides include:

> **Tech-savvy vs. traditional creatives**
> **Individual initiative vs. institutional support**
> ὼ **Small vs. large enterprises** (smaller actors rely on commercial tools; larger ones build custom solutions)

Professional preparation and learning

Estonian creatives exhibit strong self-reliance. Most learning is informal, driven by:

> YouTube tutorials, MOOCs (e.g., Stanford)
> Peer collaboration, especially with engineers
> Practical experimentation (*"learning-by-doing"*)
> Critical engagement with cultural, ethical, and aesthetic implications

As one professional stated: *"I am self-taught and continue to learn through critical engagement."* **The consensus is clear: current AI literacy is largely self-acquired rather than formally taught.**

Training landscape and needs

Despite high engagement, professionals report a **lack of structured, comprehensive training.** Existing offerings tend to focus on tool-specific usage rather than broader workflow integration or conceptual understanding.

Identified needs include:

> Holistic, workflow-oriented training
> Hands-on, cross-disciplinary workshops and artist-led labs
> Ethical and philosophical frameworks alongside technical skill-building
> Prompt engineering as a core competence
> Industry-specific applications tailored to creative subfields

Preferred formats are project-based, collaborative, and accessible on demand.

Conclusion

Estonia's creative sector demonstrates strong grassroots AI adoption and technical confidence, yet lacks systemic institutional support. **The main challenge is not willingness or capacity, but the absence of coordinated, structured education that combines technical proficiency with ethical and creative insight.**

Given Estonia's digital infrastructure and proactive creative professionals, the country is well-positioned to lead in ethical, innovative AI integration — provided that formal training systems evolve in parallel with practitioner enthusiasm.

Italy

Key AI adoption trends

AI adoption in Italy's creative industries is fragmented but accelerating. **Approximately 75% of interviewees reported daily or regular personal use** of tools like ChatGPT, MidJourney, and specialized platforms for research, content creation, and design. Adoption typically progresses through three phases: exploratory use for efficiency, workflow integration, and ongoing challenges with strategic implementation.

The democratization of AI has lowered entry barriers; as one participant noted, *"the investments required are relatively small compared to previous infrastructure costs."*

Sector-specific insights

Leading sectors:

- ώ **Film and video production** show advanced implementation, with companies using tools such as Runway Gen-4, MidJourney V7, and Cling for end-to-end production. Projects that once took weeks are now completed in days.
- ώ **Design and architecture** professionals report strong integration across the pipeline, employing AI for conceptual development and parametric design.

Moderate adoption:

- ώ **Publishing and journalism** vary by region and scale. While some newsrooms apply basic AI (e.g., for statistics and image classification), others — particularly in southern Italy — lack access to advanced tools or capacity for implementation.

Slower-adopting sectors:

- ώ **Traditional performing arts** express concerns over preserving embodied practices. As one dance professional put it, *"The body remains the center."*
- ώ **Museums and cultural heritage institutions** face budgetary and institutional barriers, though some are piloting tools like chatbots and visitor analytics.

Institutional and geographic divides

A pronounced **north−south divide** characterizes AI readiness. Northern institutions benefit from better funding, infrastructure, and training, while southern organizations often depend on basic, free tools and lack dedicated AI budgets. Similarly, large, well-resourced institutions provide formal training, whereas smaller entities rely on informal peer learning.

As one interviewee noted: *"Most colleagues learn through corporate or university programs… but these tend to be superficial."*

Professional preparation and learning

Learning is overwhelmingly self-directed. Common approaches include:

Trial-and-error experimentation

Online forums, peer knowledge exchange

YouTube tutorials and international MOOCs

Exposure to global innovation hubs (e.g., China, USA)

Professionals increasingly pursue *"AI workflow literacy"* — not just how tools work, but when and why to use them effectively.

Training landscape and perceived needs

Interviewees widely report a lack of structured, sector-specific training. Most available programs are generic, superficial, or inaccessible in southern regions.

Expressed needs include:

> Hands-on, practical workshops
>
> Training tailored to specific disciplines (e.g., dance, heritage)
>
> Cross-disciplinary formats combining technical and creative perspectives
>
> Ethical and philosophical frameworks to preserve artistic autonomy

Some support the idea of a **pan-European "AI license"** to provide baseline literacy with options for specialization.

Conclusion

Italy's creative industries face both structural barriers and transformative potential. The **key challenges include regional disparities, lack of tailored training, and cultural resistance** tied to protecting craftsmanship. At the same time, the country's creative legacy positions it uniquely to develop AI applications that amplify, rather than replace, human creativity.

The path forward lies in **democratizing access, building ethical frameworks, and developing *"radical creative practices"*** that merge human ingenuity with technological innovation. As one respondent aptly noted: *"The real challenge isn't replicating past work, but using AI to create fundamentally new forms of creative expression."*

5. Sectoral patterns and applications

Across all studied nations, certain sectors consistently demonstrate more advanced AI integration while others maintain deliberate distance from automated technologies. These sectoral patterns transcend national boundaries, suggesting that the nature of creative work itself shapes AI adoption more significantly than geographic or cultural factors.

Media and Journalism

Across all countries examined, the media and journalism sectors demonstrate a relatively advanced level of AI integration, particularly in the areas of:

> content research,
>
> transcription services, and
>
> preliminary content generation.

Hungarian media companies report the most sophisticated implementations, with systems such as custom AI avatars and automated news workflows. These technologies enable a **50–60% reduction in process time**, especially in transcription and newsletter production.

In contrast, Latvian and Polish journalists highlight the importance of **quality verification protocols**, which often limit the potential efficiency gains of AI. Their approach emphasizes:

> editorial transparency,
>
> rigorous content verification, and
>
> the protection of editorial voice to avoid homogenization.

Italian journalists face structural and institutional limitations. In particular, southern newsrooms suffer from a lack of adequate resources and insufficient access to advanced AI tools comparable to those used in international media organizations.

A consistent theme across all countries is that **AI is perceived as a supportive tool**, not a substitute for human expertise. Journalists and editors **unanimously reject full automation**, citing the importance of human editorial judgment, contextual understanding, and the creative, interpretive aspects of content creation.

Publishing Sector

The publishing sector, by contrast, exhibits **more conservative AI adoption trends**. Current usage is largely confined to supporting functions, such as graphic design, marketing, and ancillary editorial processes. Publishers across regions express **widespread skepticism regarding AI's ability to replicate core creative tasks, personal narratives, and authentic storytelling.**

Hungarian publishers limit AI usage to plagiarism checks and the development of marketing materials, underlining that the **preservation of originality** remains a defining feature of professional identity.

Italian publishers demonstrate selective integration of AI into **social media scheduling**, and **CRM** (Customer Relationship Management) **systems**. However, they report a lack of advanced prompting skills, and generally view AI as a time-saving mechanism that frees up resources for creative work.

In the Basque publishing sector, AI remains at a largely exploratory stage. While there is an awareness of its potential in predictive analytics and content personalization, further adoption is hampered by **limited digital competencies and ethical concerns** regarding creative integrity.

As one publishing professional notes: *"It is difficult to make accurate forecasts due to the exponential pace of technological development; however, adoption within traditional sectors such as historical publishing remains relatively moderate."*

Design, Digital Arts

The design and visual arts sectors across all examined regions **broadly embrace AI technologies**, particularly in concept development, rapid prototyping, and client communication.

In Estonia and the Basque Country, designers report **full-spectrum AI integration** within production workflows. These systems enable small studios to compete with larger entities while maintaining a personalized service model.

Hungarian digital artists also make use of an extensive array of AI-based tools. However, they note that **human labor hours remain largely unaffected**, primarily due to the ongoing need for manual programming and troubleshooting. As a result, current AI integration is estimated to yield only a **30–40% improvement in efficiency**.

Italian design professionals stand out for their widespread AI usage across creative, cultural, and educational domains. For them, AI is considered **essential infrastructure**, not merely an optional enhancement. Their strategies often combine proprietary system development with commercial tool adoption.

Architecture

The architecture sector demonstrates a technically sophisticated approach to AI, particularly in the Basque Country and Italy, where professionals apply advanced tools for **visualization**, **conceptual modeling**, and **design optimization**.

In Latvia and Italy, architects incorporate AI deeply into design workflows, while Hungarian counterparts apply AI more selectively and experimentally.

Despite varying levels of adoption, a **common technical barrier** exists across all countries: difficulty integrating AI systems with **industry-standard architectural software**. This limitation restricts the broader application of AI tools beyond early-phase design.

As a result, AI use is generally confined to the **initial creative stages** — such as concept generation, visualization, and idea refinement — rather than technical execution.

There is a **shared professional consensus** that, while valuable, AI should **remain a supplementary instrument** in the creative process in order to **safeguard traditional skills and critical design thinking**.

Fashion

The fashion industry increasingly adopts AI as a collaborative partner, rather than as a replacement for human creativity. Integration is most pronounced in the areas of **marketing**, **trend forecasting**, and **early-stage design testing**.

In Hungary, fashion professionals report approximately **six years of AI implementation** within the framework of **Global Sustainability Fashion Week**. These applications have led to measurable improvements in:

> marketing quality,
> operational efficiency, and
> waste reduction, particularly through digital prototyping before physical production.

AI is also recognized for its **strategic value in market segmentation and niche identification**, enabling more targeted and data-informed design processes.

However, adoption across the sector remains uneven. A **generational divide** is clearly observable: while younger professionals integrate AI tools more naturally into their workflows, older practitioners often exhibit resistance. This hesitance is primarily attributed to **digital skill gaps** and a persistent adherence to traditional methods and creative paradigms.

Advertising sector

The advertising industry is undergoing rapid transformation as a result of AI integration, with Estonian and Latvian case studies exemplifying advanced implementation within creative and strategic workflows.

In Estonia, advertising agencies prioritize precision-driven applications, using AI tools for:

> campaign optimization,
> performance measurement, and
> structured creative enhancement.

These applications span the full campaign lifecycle, including post-production review, pre-publication evaluation, and campaign planning.

Latvian professionals approach AI as a **creative expansion engine**, utilizing it to scale content production and support experimentation. In many cases, **AI is applied throughout the entire value chain** — from initial ideation to the development of social media narratives.

Despite variations in application, both national contexts demonstrate convergence around a central insight: **Failure to adopt AI is now seen as a clear competitive disadvantage.**

Agencies that have embraced AI report:

increased audience engagement,
accelerated production timelines, and
broadened commercial opportunities.

Video Games and Entertainment Media

The video game development sector demonstrates regionally differentiated yet technically advanced patterns of AI integration.

In Hungary, developers primarily utilize large language models for:

English-language content creation,
marketing strategy support, and
basic coding assistance.

These applications yield approximately **20% efficiency gains**, although the improvements stem from **task-specific support, not from full-process automation**. AI remains a complementary tool rather than a system-level disruptor.

Italian game studios adopt a broader range of AI platforms — including OpenAI, LLAMA, Runway, and other specialized tools — for diverse purposes such as; brainstorming, background research, UI design, and pitch preparation.

These integrations result in **notable reductions in development time**, while preserving a **human-led creative process** as central to the production pipeline. Across both contexts, a shared perspective emerges: **AI should serve to augment human creativity, not replace it.** Future advancements are expected to arise not merely from increased execution speed, but from the emergence of entirely new creative formats and narrative structures enabled by AI.

Museums, Heritage, and Cultural Institutions

The adoption of AI in museums and cultural heritage institutions varies significantly, with **resource availability** emerging as a more decisive factor than institutional mission or vision.

Well-funded national institutions in Hungary and Italy **are actively experimenting with AI** to enhance visitor engagement and accessibility. In contrast, **regional museums** across multiple countries **face infrastructural limitations** that inhibit even basic AI integration.

In Latvia, heritage professionals report AI applications in digitization and qualitative research. These efforts highlight the transformative potential of AI in:

> large-scale object digitization,
> historical analysis—such as decoding damaged materials (e.g., burnt scrolls), and
> authorship attribution in archival content.

Hungarian museums, constrained by budgets, have positioned AI as a **cost-effective internal substitute** for external service providers in areas such as translation, graphic design, and exhibition text development.

Reported outcomes include **dramatic reductions in turnaround time**, from multiple days to mere minutes. As one professional from the field notes: *"We use AI internally to support productivity tasks, but most of our client-facing work focuses on Web3 solutions like blockchain and metaverse projects."*

The Basque Country and Latvia show growing interest in AI for **content enrichment** and **cultural preservation**, though most implementations remain internally focused rather than directed at public engagement.

In Poland, AI adoption is in its experimental stages, with initiatives such as:

> animated portraits for museum exhibitions,
> exploratory projects in library systems,
> object cataloguing, and
> educational game development.

Nevertheless, challenges persist, including infrastructural deficits and variable staff readiness.

Italian institutions pursue selective applications of AI, primarily for **documentation management**, **transcription**, and **early-stage storytelling**. There is also emerging interest in creating **personalized museum experiences** through **AI-trained visitor models**, signaling a potential shift toward interactive and adaptive cultural engagement.

Performing Arts and Theatre

Among all cultural sectors, the performing arts and theatre maintain the **most human-centered orientation**, with AI integration generally limited to **administrative functions** and **conceptual ideation**.

Polish and Italian artists express philosophical opposition to the inclusion of AI in live performance, emphasizing the **irreducibility of embodied human presence** and the unique nature of physical co-presence in artistic expression. This resistance reflects a deeper cultural valuation of the **non-replicable, affective dimensions** of performance.

Nonetheless, even in these traditionally conservative sectors, there is growing recognition of AI's practical value in areas such as:

soundscape generation,
visual concept development, and
administrative task optimization.

In Hungary, performing arts professionals report relatively **advanced AI integration in back-office operations**, achieving **daily time savings of four to six hours**. On this basis, some predict a **50% reduction in administrative staffing needs** within the next five years.

Meanwhile, Italian performers are cautiously experimenting with AI-driven tools for **real-time musical accompaniment** during live shows. These initiatives are pursued with a deliberate balance between technological innovation and ethical concerns, including environmental sustainability and copyright management.

Music

The music industry displays a **wide spectrum of AI maturity**, ranging from early-stage experimentation to **advanced operational integration**, depending on regional and institutional contexts.

In Hungary, music professionals have adopted **custom GPT-based models** for tasks such as documentation, book writing, and workflow automation. These implementations have resulted in the replacement of **three human assistants**, accompanied by **notable cost savings** and enhanced internal efficiency.

Italian music enterprises reflect a divergence in AI strategy. One segment prioritizes real-time audience sentiment analysis, enabling dynamic performance adjustments and achieving a **60% reduction in data preprocessing time**. Another focuses on generative audio technologies for non-linear composition and conceptual exploration, thereby challenging conventional notions of authorship and creative control.

In contrast, the **Basque music sector** exhibits **minimal AI adoption**, driven by **strategic caution**. While acknowledging AI's potential — particularly in music creation and personalized content delivery — stakeholders continue to emphasize **human-centered creative processes**.

As one industry professional notes: *"I acknowledge the growing relevance of AI in the cultural sector, especially in music creation and content personalization. Although we are not actively using AI in our internal processes yet, I closely follow its development and expect it to shape future creative work."*

Education Sector

The education sector reveals **nationally distinct AI adoption patterns**, shaped by a combination of **technological maturity**, **cultural attitudes**, and **funding structures**.

Estonia stands out as a leader, where educational institutions demonstrate **advanced integration** of AI. Their approach balances technical skill development with ethical and philosophical inquiry, embedding AI education into broader curricular frameworks.

In Latvia, adoption is considered moderate. While individual educators make extensive use of AI for **administrative efficiency** and **academic preparation**, **institutional support** and **dedicated funding remain limited,** constraining broader systemic implementation.

Italy shows low to intermediate levels of adoption, with AI usage mostly confined to **individual experimentation** in areas such as **lesson planning** and **adaptive learning**. Cultural resistance and infrastructure deficiencies continue to pose barriers to large-scale implementation.

The Basque educational sector exhibits high specialization in **assistive technologies**, particularly in support of **accessibility initiatives**. However, broader integration remains limited due to **funding constraints** and **interdisciplinary skill shortages**.

Across all contexts, experts identify **emerging opportunities** for AI in education, particularly in:

adaptive learning systems,

differentiated instruction,

simulation-based teaching, and

artistic and creative exploration through generative tools.

6. Training and knowledge development challenges

A pervasive challenge across all examined countries and creative sectors is the **absence of adequate training infrastructure** to support AI adoption. Professionals consistently report reliance on **self-directed learning pathways**, including:

YouTube tutorials,

informal experimentation, and

peer-to-peer knowledge sharing.

This training vacuum leads to **inefficient, trial-and-error-based approaches**, often resulting in suboptimal use of AI tools and **limited understanding of ethical and strategic implications**.

In Hungary, experts identify that the **most critical knowledge gap** lies not in technical skills per se, but in **logical reasoning** and **effective prompting techniques**. Respondents argue that current educational systems fail to provide the **conceptual and cognitive foundations** necessary for mastering AI interactions. This results in a lack of what one professional described as: *"Socialized thinking patterns"* — the mental frameworks required to retain control over AI systems rather than become overly dependent on them.

The **performing arts sector** echoes this sentiment, emphasizing the need for **critical thinking and structured reasoning** as core AI-related competencies, extending well beyond baseline digital literacy.

Latvian creative professionals express a strong preference for **hands-on workshop formats**, enabling direct experimentation with real project scenarios. This demand for applied, context-specific learning appears consistently across all countries and sectors, reflecting the practical orientation of creative work. Rather than abstract theory, professionals require training that demonstrates **AI capabilities within their specific workflows**.

The architecture and design sectors, in particular, call for **integrated training models** that blend **technical upskilling** with **creative preservation**, ensuring that innovation does not come at the expense of disciplinary identity.

In the Basque Country, institutions advocate for **interdisciplinary program development**, merging **artistic** and **technological education** to cultivate hybrid professional profiles. The long-term objective is to enable professionals to make **informed decisions** about AI integration—knowing **when**, **how**, and **to what extent** it should be applied within creative processes.

Similarly, the music sector proposes co-designed artist-engineer training programs, aiming to blend creative, technical, and strategic skill sets.

Polish professionals articulate the need for **project-based, hands-on training** that addresses **workflow-specific challenges** while providing actionable implementation guidance. In these contexts, **case study-based learning** proves especially valuable for building confidence and identifying appropriate AI use strategies. The publishing and video game industries underscore the need for **sector-specific education**, especially regarding:

> copyright and attribution,
> intellectual property rights, and
> fair use principles.

In Estonia, despite relatively high levels of individual AI literacy, professionals highlight a lack of understanding regarding **AI's back-end mechanics** — including questions such as:

> how models are trained,
> what data they rely on, and
> how embedded biases may affect outputs.

This **technical opacity**, when combined with the lack of sector-specific training programs, constitutes a significant barrier, even for early adopters.

The advertising sector raises concerns about the **rapid pace of technological change**, underscoring the need for **continuous skills development** and **ongoing professional education** to maintain relevance and competitiveness.

Italian creative professionals propose innovative training models, including:

- ώ *residency-style laboratories* combining **physical practice and AI interaction**, and
- ώ experiential, co-created learning formats integrating **technical labs** with **artistic studios**.

Such proposals reflect a **nuanced understanding** that effective AI education must move beyond mere technical instruction. It must also cultivate **critical thinking, ethical awareness, and creative integration capabilities.**

The film industry, in particular, advocates for **hybrid training programs** that maintain **human oversight and editorial judgment**, even as AI tools are increasingly used in scripting, editing, and production workflows.

7. Financial and infrastructure barriers

Economic limitations emerge as a **significant barrier** to AI adoption across all regions and creative sectors studied. While the manifestations of financial constraints differ by national context, their cumulative effect is consistent: they **restrict experimentation**, **limit access to training**, and **slow infrastructure development**, all of which are essential for sustainable and effective AI integration.

In Hungary, the creative industries—particularly museums—face **severe budgetary constraints**. Many institutions report **zero dedicated budgets** for AI, relying instead on personal subscriptions and free tools to implement even basic functions. Even in relatively advanced sectors, professionals acknowledge that **AI investments often outpace immediate returns**, forcing organizations to frame technology spending as a form of strategic positioning rather than a source of short-term profit. In the fashion sector, small brands similarly lack earmarked budgets for AI adoption, with dependence on grant funding that remains inconsistent and unreliable.

In Latvia, economic instability in the cultural sector — further compounded by **recent budget cuts** — limits organizational capacity to invest in technology and professional development. Small creative enterprises **struggle to cover ongoing subscription costs** for AI tools, while larger infrastructure investments often exceed available funding. Even in sectors like advertising, which demonstrate high levels of AI integration, professionals report difficulties in **navigating the cost and capabilities** of an increasingly fragmented AI tool ecosystem.

The Basque Country identifies **resource limitations** affecting approximately 80% of surveyed organizations, most of which **lack dedicated budgets** for AI development or access to specialized technical expertise. Small and medium-sized enterprises (SMEs) face particular barriers in reaching advanced AI solutions and consulting services, often turning instead to **public support schemes** and **peer-based knowledge networks** to compensate. In architecture, budget limitations in smaller studios obstruct systematic AI adoption, despite recognition of the technology's strategic importance.

Polish institutions operate under **rigid budgetary constraints**, requiring **pragmatic, cost-conscious approaches** to AI adoption. Organizations often integrate AI tools into **existing software allocations** rather than establishing dedicated AI budgets, reflecting both financial pressure and **uncertainty about long-term technological needs**. Museums in particular suffer from **hardware deficits**, with outdated equipment preventing effective deployment of AI applications.

In Estonia, professionals report a broad range of investment levels. While some rely on **modest individual subscriptions** ranging from $12 to $150 per month, others engage in **substantial organizational investments** to develop custom AI solutions. Nevertheless, many creative institutions continue to **lack dedicated AI development budgets**, limiting their ability to experiment or scale despite recognizing the potential benefits. The video game sector emphasizes that future competitive advantage will likely be determined by the **capacity to invest in hardware and infrastructure**.

Italy presents a similarly constrained picture. Professionals report **minimal AI budget allocations**, typically **4–5%** of overall software expenditures. Regional disparities exacerbate these challenges, with southern institutions disproportionately affected by what one respondent described as a: *"Stark north–south investment divide,"* which risks creating a **two-tier system** within the national creative economy.

The video game industry in Italy highlights particularly **high infrastructure costs**, citing hardware investments ranging from **€100,000 to €200,000**, and recurring **annual software subscription fees** of approximately **€5,000**—figures that remain prohibitive for many small and mid-sized developers.

8. Ethical considerations

Ethical concerns surrounding AI are consistently present across all countries and sectors studied, indicating a mature understanding of the moral implications tied to creative work. These concerns go beyond questions of efficiency, touching on **human dignity**, **cultural preservation**, and **creative authenticity**.

Copyright and intellectual property dominate ethical debates. Italian professionals offer particularly strong critiques, with one calling current AI training practices *"history's greatest creative plunder."* Hungarian respondents echo concerns about **unauthorized use of creative content**, while Estonian and Latvian professionals emphasize the need for **clear attribution and transparency** when using AI-generated outputs. The journalism sector stresses the risk of **over-reliance on AI**, which may erode **independent thinking** and compromise editorial integrity.

Cultural preservation is especially important in countries with strong traditional arts. Polish and Italian professionals warn of **aesthetic homogenization** and loss of **cultural specificity**, while Basque respondents highlight risks of **bias reinforcement** and **misrepresentation**. The performing arts sector, in particular, cautions against AI-driven **cultural flattening**, threatening diversity in expression.

Environmental sustainability also features in ethical reflections with professionals concerned about **AI's energy demands** and advocating for **renewable-powered infrastructure**. In the fashion sector, AI is viewed as a tool for promoting material efficiency and supporting **eco-conscious practices**.

Across sectors, maintaining **human oversight and creative control** emerges as a shared ethical imperative. Journalists focus on **verification**, publishers on **authenticity and plagiarism**, and performers on the **non-replicable essence of live presence**. Advertisers raise issues around **censorship**, **authorship**, and the **environmental footprint** of generative tools.

Finally, **data sovereignty and privacy** are persistent concerns. Italian professionals point to legal uncertainties, while Estonian respondents highlight **platform dependency** and **infrastructure vulnerability**. The publishing sector calls for tools with **transparent data policies** and clear **copyright/fair use guidelines**, reflecting broader concerns about corporate control over creative data ecosystems.

9. Strategic implications and future trajectories

The synthesis reveals **divergent national visions** for AI's future role in European creative industries, yet several **shared themes** emerge — most notably, the call for **balanced integration** that **preserves cultural values** while leveraging **technological innovation**.

Across countries and sectors, professionals anticipate **significant transformation within five years**, though expectations vary by industry maturity and regional context.

In Hungary, experts foresee a **fundamental restructuring** of creative work. One respondent likens the upcoming five-year AI transition to a **compressed version of the 25-year analog-to-digital shift**, urging immediate strategic planning. The music sector predicts near-universal AI adoption, with **live performance and authentic storytelling** emerging as **premium differentiators**. As one professional notes: *"Audiovisual and technological disciplines will merge more deeply, with growing demand for interactive, participatory formats."*

Latvian professionals expect a **more gradual transition**, shaped by institutional conservatism and slower technological diffusion. Nevertheless, **global market pressures** may force acceleration, particularly in advertising, where **brand avatars** and **AI-generated content** are projected to replace live filming.

In the Basque Country, creative organizations rate AI's expected impact at 7.2/10, predicting **business model evolution** and **competitive advantages** for small enterprises able to scale through AI. Sectors like architecture and design anticipate AI becoming a **baseline competency**, with non-use signaling a strategic disadvantage.

Polish professionals express measured optimism, favoring **gradual implementation** with strong emphasis on **human oversight** and **creative quality**. This culturally grounded approach aims to ensure sustainable integration, especially in performing arts, that most strongly reflects the view that AI should serve to augment — not replace — human expression.

Estonian professionals anticipate high-impact transformation, with expected outcomes including **hybrid human−machine processes**. AI is seen as a tool to offload **repetitive tasks**, allowing professionals to focus on **emotional depth, narrative meaning, and strategic vision**. Creative democratization may narrow the gap between large agencies and independent creators, particularly in advertising, where **hyper-personalized hybrid campaigns** are seen as inevitable.

In Italy, predictions are philosophically diverse, ranging from visions of **pervasive AI dominance** to **purposeful resistance**. Professionals highlight innovation potentials such as:

> personalized content,
> ώ **dynamic audience−AI−artist feedback systems**, and
> integration with emerging technologies like drones and smart connectivity.

The video game industry expects *"thirty years of change in five years"*, with AI and robotics driving deep restructuring and value shifting toward **soft skills and creativity**.

10. Recommendations for sustainable AI integration

Based on the comprehensive analysis across six nations and twelve creative sectors, several strategic imperatives emerge for supporting effective AI integration while preserving the distinctive character of European creative industries.

1. **The development of sector-specific training ecosystems proves essential across all contexts.** These programs must combine technical skills with critical thinking and ethical awareness, employing practical, hands-on approaches that address the specific needs of different creative disciplines. The consistent preference for experiential learning over theoretical instruction suggests that effective training must be embedded within actual creative practice rather than delivered through traditional educational models.

2. **Sustainable funding models must move beyond project-based support to create consistent resources for AI experimentation and implementation.** The research suggests that modest but reliable funding could have a significant impact, particularly for smaller organizations and independent practitioners who currently lack access to AI tools and training. Regional equity considerations demand targeted investments to prevent geographic location from determining access to technological capabilities.

3. **Clear ethical frameworks and legal clarity around copyright, authorship, and data use prove essential for confident AI adoption.** The current legal uncertainty identified across all nations inhibits both innovation and ethical practice, creating risks that many organizations cannot afford to assume. Development of comprehensive regulatory frameworks should involve creative professionals, technologists, and policymakers working collaboratively. Key areas requiring attention include:

   Standardized attribution requirements for AI-generated content;

   Compensation models for creators whose work trains AI systems;

   Data sovereignty protections for creative industries, and;

   Environmental standards for AI infrastructure.

4. **Infrastructure development must address both technical and human dimensions**. While hardware and software capabilities require attention, the research emphasizes that successful AI integration depends equally on developing organizational cultures that support experimentation, continuous learning, and critical engagement with technology. This cultural transformation may prove more challenging than technical implementation, but it remains essential for sustainable adoption.

5. **Cross-sector and international collaboration mechanisms could accelerate learning and innovation while preserving cultural distinctiveness.** The research reveals that innovations in one sector often have applications in others, suggesting that formal knowledge-sharing platforms could multiply the impact of individual experimentation. International collaboration could facilitate technology transfer while respecting diverse cultural contexts and creative traditions.

6. **The preservation of human-centered creative practices must remain paramount even as AI capabilities expand.** The research consistently demonstrates that successful integration maintains human creativity, judgment, and cultural sensitivity at the core of creative work. This requires deliberate strategies to ensure AI augments rather than replaces human capabilities.

11. Conclusion

This synthesis reveals **European cultural and creative industries navigating AI integration with remarkable sophistication, balancing technological opportunity with deep commitment to preserving human creativity and cultural authenticity**. The diversity of approaches across nations and sectors demonstrates that **there is no singular path to AI adoption**, but rather multiple strategies shaped by cultural values, economic realities, and creative traditions.

The research consistently demonstrates that **successful AI integration requires far more than technical implementation**. It demands **fundamental reconsideration of creative processes, business models, and professional identities** while **maintaining the essential human elements** that define artistic expression. The professionals interviewed across all nations emphasize that **AI should enhance rather than replace human creativity**, serving as what multiple practitioners describe as *"a tool in our hands while the thought remains with us."*

The striking **disparities revealed between well-resourced and struggling organizations,** between **nations and regions**, and between **different creative sectors** underscore the **urgent need for coordinated support that ensures equitable access to AI's benefits.** Without intervention, **these gaps risk creating fragmented creative economies** where technological capability rather than artistic merit determines success, impoverishing Europe's cultural diversity and diminishing the varied voices that constitute its creative heritage.

The sector-specific insights reveal particular **challenges and opportunities** that **require tailored approaches.** Education needs comprehensive pedagogical frameworks for AI integration; journalism requires robust verification protocols; performing arts must preserve embodied practice; museums need infrastructure investment; fashion requires sustainability alignment; and **all sectors need clear ethical guidelines and legal frameworks.**

Perhaps most significantly, the research demonstrates that **European creative industries possess the adaptability, creativity, and critical awareness necessary to navigate this technological transformation successfully.** The challenge lies not in the capacity of creative professionals to

engage with AI, but in **ensuring they have the resources, training, and supportive frameworks** necessary to do so in ways that align with cultural values and creative excellence.

The path forward requires collaborative effort across educational institutions, policymakers, industry organizations, and creative communities to ensure that AI serves to amplify rather than diminish the human creativity that defines Europe's cultural contribution to the world.

The future of European creative industries will be shaped by how effectively they navigate the tension between technological innovation and cultural preservation, between efficiency and authenticity, between global competitiveness and local distinctiveness. Success will require not choosing one over the other, but finding innovative ways to achieve both through thoughtful, ethical, and culturally sensitive AI integration that respects the unique character of European creative expression while embracing the transformative potential of artificial intelligence.

Partners