CIRCE

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Navigating Global Competition: Alternative Policy Approaches for the EU´ s Creative Industries

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A. Executive Summary

European creative industries face a challenging future due to increased military spending, weaponised soft power from authoritarian regimes, and the ongoing impact of the pandemic and economic downturns. European creative sectors lag behind global competitors, only comprising a 15% share of market capitalisation in the segments of telecommunications, entertainment, software, media and press, and video games. Revenues per capita in the EU's entertainment and media sector are less than those in the US, Canada, Japan, South Korea, and Singapore.

A problem-oriented approach to policy-making is one of the reasons for the underperformance of the EU creative industries. The traditional focus on immediate needs often overlooks creative industries' forward-looking and long-term nature. The default policy-making framework allocates more attention and resources to urgent and tangible issues, often at the expense of 'soft' spheres, such as culture, science, and education. This research explores three alternative policy techniques that could bring creative industries to the forefront of the political agenda.

Intergenerational analysis, often applied to illustrate the effects of ignoring climate concerns, could be used to increase the visibility of creative industries. This multi-factor model could quantify their impacts on education, environment, crime rates, employment, and overall well-being, as well as trace the effects of implementing new institutions, legislative frameworks, and financing models. The proposed intergenerational analysis is based on the Integrated Assessment Modelling and the Hedonic-Motivation System Adoption Model. This approach could yield data to help decision-makers understand the value of creative industries.

Big Data analysis holds untapped potential for enhancing EU policy-making in creative industries. Despite some current efforts, this resource remains largely unemployed: policy-makers rely on official statistics that are limited in scope and lack dynamic indicators. To move beyond these limitations, it is recommended to engage NGOs and think tanks in experimental analytics that allow to have a more granular understanding of the dynamics of creative industries. They could provide insights into cultural production and consumption patterns, digital behaviours, and the long-term, cross-sectoral impacts of financial incentives on the entire value chain of EU-funded creative projects. Existing EU datasets may serve as a starting point: when combined with social media data, this information could help pinpoint the areas of improvement in the EU support measures or identify existing gaps. Moreover, EU creatives may consider establishing data spaces to capitalise on data resources rather than merely giving them away to dominant global players.

Regulatory sandboxes offer opportunities for cross-sectoral innovation in creative industries. Commonly used in fintech—a highly regulated domain—these sandboxes allow governments to create regulatory space with exemptions where innovators can test new projects and business models, leading to appropriate legislative adaptations. Although creative startups are not as heavily regulated as fintech projects, existing blockchain or AI sandboxes can still benefit them. One potential solution is blockchain-based platforms that ensure transparent and equitable revenue-sharing for artists. Other alternative funding models include the possible use of the intellectual property as collateral for loans, the creation of foundations investing in shares and cryptocurrencies and redirecting dividends to culture-related grants, and the establishment of overdraft facilities for creative businesses.

There are four projects launched as part of the EU Blockchain Sandbox that hold promise for applications in creative industries—ranging from tools for investing in music to authenticating creative works and enhancing tourist experiences. These applications merit further research.

These policy approaches—intergenerational analysis, big data analysis, and regulatory sandboxes—have the potential to **1) present data-driven insights into the impact of the creative sector to decision-makers; 2) highlight areas of growth or gaps that could guide state and EU public investment strategies; and 3) weave creativity as a distinct feature into various economic sectors, thereby benefiting from their innovative solutions.** Although the implementation of these techniques requires further research, they could allow to advocate for increased funding of creative industries. By boosting the ability of creative industries to innovate and operate across the economy, these approaches also enhance the global competitiveness of the EU's creative industries. This could be particularly pertinent in light of the EU's ambition to further its strategic autonomy agenda in the increasingly polarised world.

B. Research Problem

The main goal of this research is to explore innovative policy-making approaches that can enhance the global competitiveness of the EU's creative industries, particularly in the face of economic and security crises.

This chief research question is as follows: What policy analysis techniques account for the strategic and projection-based nature of creative industries and allow for their fair and sectorally balanced competition for state resources?

The research has three main objectives:

1. To explore the qualitative and quantitative impact of the EU's insufficient policies in the sphere of creative industries.
2. To propose alternative/additional policy approaches specific to creative industries and ways to prioritise the sphere.
3. To provide recommendations for implementing additional policy techniques at the EU level.

The term '*creative industries*' was conceptualised in the late 1990s and early 2000s and has since become a buzzword often seen as a remedy for various economic and social issues. Perceived as an inherent feature of an innovative, knowledge-driven economy, creative industries are claimed to have spillover effects across the areas of security, entrepreneurship, regional growth, education, and innovation. The EU has extensively woven creative industries into its policies, which is reflected in the six guiding priorities of the European Commission, each of them referring to creative industries in one form or another (European Commission, 2019). Further, as part of the Horizon Europe programme, a separate cluster was launched dedicated to culture, creativity, and inclusive society that received €2.28 billion in funding for 2021-2027. This development marks the first time cultural and creative sectors have been integrated into the European research programme. Creative industries are partially integrated into Digital Europe, Invest-EU, and the EU Structural Funds. The New European Bauhaus initiative focuses on translating the European Green Deal into a sustainable, well-designed lifestyle by employing creative sectors (interview with the European Commission officials, May 2, 2023).

However, the economic analysis reveals worrisome trends. Although the value added by cultural enterprises to the EU's economy has largely been consistent in recent years (except in 2020 due to the pandemic) (Eurostat, 2023), metrics suggest that the EU's creative industries are not keeping pace with international competition. For instance, the 2016 report by the European Commission highlighted a dip in EU competitiveness, underscoring the rise of new markets, especially in Asia (Enichlmair et al., 2016).

First, it is worth examining the **revenues** generated by nine trending sectors in the online segment of the entertainment and media industry in the EU, the United States, Canada, China, Singapore, Japan, and South Korea (see Annex A). In summary, the US leads in most sectors, and Asian countries have taken intermediate positions. Some Asian states excel in specific sectors: video game production (Japan and South Korea), ePublishing and digital music (Singapore), and e-commerce fashion (South Korea). The EU generally ranks toward the bottom, often alongside China. Asian countries have demonstrated significant progress in recent years, gradually closing the gap with top performers through increased investment and proactive policies. In contrast, changes in the EU tend to be primarily incremental.

Second, with a few exceptions, the global presence of European companies in key creative markets remains low. As of July 2023, the market capitalisation of the EU-registered firms accounted for 12% of the market cap of the largest telecommunication companies, 10%—of the entertainment companies, 4% in software, 4% in media and press, and a meagre 0.7% in video games production. In contrast, the EU businesses excel in the fashion industry: they comprise 59% of the market capitalisation in the clothing sector and hold a 15% share in the footwear industry. The advertising sector shows a moderately strong presence, where EU companies make up 23% of the market capitalisation.

It should be noted that these estimates can result in overlaps if companies are categorised under several sectors. Furthermore, market capitalisation is a dynamic indicator that can fluctuate daily and may be influenced by non-economic factors. Nonetheless, this analysis serves as a useful estimate of the market tendencies.

The EU's innovation deficit is also evident in the scarcity of new business models, particularly when it comes to digital creative formats. Platforms such as Instagram, Snapchat, TikTok, YouTube, Netflix, Amazon, and Facebook have revolutionised online creativity, introducing user customisation, data-driven content development and live streaming. New creative formats and practices include cosplay, fanfiction, interactive fiction[1], creative coding[2], talent shows, entertainment parks, etc. In stark contrast to Europe's historically trendsetting role in global culture, Europe has largely been on the sidelines of these developments, as evidenced by the paucity of European tech enterprises in the entertainment sphere (Randolph, 2016).

The permacrisis deepens the existing challenges faced by creative industries. UNESCO (2022) highlights that the global cultural and creative sectors suffered a loss of $750 billion in value due to COVID-19, resulting in the termination of 10 million jobs globally in 2020. Further, Russia's full-scale invasion of Ukraine prompted European nations to increase their defence spending and meet NATO's 2% GDP defence spending benchmark. A significant portion of the national budgets was redirected to tackle the gas crisis: measures to protect consumers and offset the spike in gas prices reached nearly €800 billion in national fiscal policies (Sgaravatti et al., 2023).

UNESCO's findings (2022) indicate a concerning downturn in public investment in culture at a time when Russia and China employ culture and online creativity as a tool of propaganda. The most compelling counterstrategy is creating an environment conducive to the production of creative content that embodies European democratic values. Therefore, governments across Europe should support creative industries, given their capacity to craft perceptions, inform a nation's reputation, and spread narratives.

[1] Interactive fiction is a form of storytelling that allows readers or players to make choices that affect the story's outcome (like in Choice of Games, Inkle Studios' Sorcery! series, Bandersnatch or an interactive episode of Black Mirror on Netflix).

[2] Creative coding involves using programming languages to create visual and interactive works of art, with some popular examples being Processing, OpenFrameworks, and Three.js.

C. Research Process and Methodology

The declined competitiveness of the EU’s creative sectors and Europe’s diminished soft power can be attributed to a complex interplay of internal and external factors. Having explored the economic indicators of the EU's relative underachievement in creative industries, it is worth analysing the reasons that hinder the EU's ability to deliver innovation within these sectors (Hubert, 2022).

One of the chief challenges is the inflexibility of the EU's regulatory framework. Major industry stakeholders have described recent regulations, such as the Digital Markets Act, as 'stifling competition and economic freedom' (Schneider, 2021). Further, the segmented nature of the EU's venture capital markets poses a challenge for creative startups seeking funding. Despite the efforts to establish a Digital Single Market, regulatory disparities persist among Member States, especially concerning copyright protection (Plucinska, 2018). Such inconsistencies can impede the efforts of creative enterprises seeking to expand internationally and leverage the potential of the digital economy.

However, a comprehensive understanding of the EU's lag requires an exploration of foundational governance-related challenges and contextual factors of the current regulatory framework. Thus, a robust analysis of the legal, historical, and policy-making dimensions of the EU creative industries' policies is needed.

Based on the research, the three foundational reasons determining the status quo of the EU’s creative industries have been identified:

1. The EU's mandate to develop culture and creative industries is notably limited due to the subsidiarity principle.

Article 6 of the Treaty on the Functioning of the European Union delineates the EU’s role in the field of culture, restricting it to supporting or complementing the policies of Member States. There are no requirements for the Member States to harmonise their cultural legislation with *acquis communautaire*, unlike in other spheres, where legal approximation is essential to becoming an EU member. Member States enact distinct cultural policies encompassing a broad spectrum of support models.

The EU regulation of creative industries is scarce and mild, allowing only for limited support measures that tend to induce incremental changes: research enhancements, recognition awards, event hosting, awareness campaigns, and networking facilitation. Although the Creative Europe programme offers grant funding, its intricate bureaucratic machinery and multilateral cooperation requirements deter many creative startups. Pivotal, industry-transforming initiatives largely remain at the behest of individual Member States.

The subsidiarity principle also creates barriers to a seamless EU market for creative enterprises. The envisioned EU-wide single market for services remains unrealised due to inconsistencies between the regulatory, tax, and labour frameworks of individual Member States. This fragmented landscape increases costs for creative businesses attempting to penetrate neighbouring markets.

Such fragmentation deprives European companies of the expansive market scope crucial for scaling up into global entities. As Philippe Kern (2020) observes, although the EU's regulatory interventions have mostly benefited the cultural and creative sectors, they have not bolstered their global competitiveness.

2. The EU's emphasis on addressing regional European concerns overlooks the wider cultural production deficit on the global stage.

Given the rich tapestry of the cultural and historical heritage of the EU Member States, the EU's internal unity is not granted but rather constantly constructed. Creative industries are often leveraged to bridge the divides, addressing diverse regional concerns such as migration, multilingualism, environmental protection, the EU's complex history, and even public administration issues.

This inward-oriented approach damages the EU's position on the global creative market and means that creative industries have not been defined as a strategic tool of geopolitical influence. Instead, policy interventions aim to foster the European identity and promote social cohesion in the EU and its neighbourhoods. Europe's unparalleled linguistic diversity, which could have been a strategic edge in allowing European content to target vast audiences in Latin America and Africa, remains untapped.

Although the EU launched the Strategy for International Cultural Relations in 2016, its 2022 evaluation underscored several shortcomings (Bacian, 2022). The document seems unresponsive to dominant concerns, such as the pervasive influence of American cultural content, digital transformation, and copyright nuances. It is blind to the rising attractiveness of Asian creative markets for global audiences. The strategy's lens is predominantly regional, spotlighting neighbouring and prospective EU members rather than positioning the EU as a global influencer. A closer scrutiny of the strategy reveals a patronising undertone which echoes Ian Manners' concept of 'normative power' of the EU over democracy promotion. This position has been criticised for neo-colonial implications: Middle Eastern, African, and Asian countries might view ‘cultural diplomacy’ with a degree of scepticism (Bacian, 2022). The assessment underscores a need for the EU's cultural strategy to be more agile and offer a compelling alternative to external cultural policies.

Another document, the 2016 Global Strategy for the EU's Foreign and Security Policy, includes the cultural component, but it is only mentioned superficially. There is a lack of coherence between the Global Strategy and the EU Strategy for International Cultural Relations when it comes to discussing creative industries, which suggests a potential shortfall in recognising the broader global potential of the EU's creative industries.

3. The EU policy-making approach, which emphasises problem identification and solving, impedes the development of creative industries.

The prevailing policy-making model in the EU relies on a conventional policy cycle. This method emphasises the identification and analysis of policy issues, the formulation and choice of policy alternatives, implementation, and evaluation (Bardach, 2016).

Researchers have consistently spotlighted the shortcomings of the traditional policy cycle, noting its emphasis on problems rather than prospective benefits. Paul Cairney’s (2012) concept of 'bounded rationality' in policy-making illustrates how the policy cycle overlooks political intricacies, failing to accommodate the non-linear and multi-level dimensions of decision-making processes. The standard model also neglects the realities of policy implementation, which confront legal and institutional constraints. Thus, rooted deeply within institutions, legislative measures, and funding protocols, this problem-focused approach curtails innovative thinking and precludes governments from going beyond standard existing solutions.

The OECD report 'Better Regulation Practices across the European Union 2022' proposes several tools for improving the quality of policy-making in the EU, such as the wider use of non-regulatory policy tools, emphasis on ex-post evaluation of existing legislation, and better cost-benefit analysis and impact assessment practices. The EU's Better Governance toolbox (2023) offers adaptive or experimental governance methods, including strategic foresight for impact assessment and evaluations, as well as uncertainty and sensitivity analysis. However, it is the standard policy-making model itself that is problematic. The upcoming institutional reforms to adjust the EU mechanism to the enlargement process are being discussed (Costa et al., 2023). However, they mainly concern decision-making rules, procedures and balances rather than the change of methodological policy-making machinery.

Rather than proactively seeking opportunities and investing in them, the EU's fiscal priorities tend to lean towards pressing concerns. Creative industries are destined to compete for the decision-makers' attention with the urgency of healthcare, energy, and security policies. The budget of the EU's main creative industries programme, Creative Europe, is € 2.44 billion for 2021-2027 (ca. 0.2% of the Multiannual Financial Framework 2021-2027). Moreover, the EU's proposed 2024 budget indicates a €40 million reduction in Creative Europe, prompting concern from European cultural organisations and associations (letter of concern, 2023).

The EU often focuses on immediate issues, as exemplified by its copyright policy, which protects intellectual property rights but may stifle innovation and online creativity. In the US, 'an individual who knowingly purchases a copy of a copyrighted work from the copyright holder receives the right to sell, display or otherwise dispose of that particular copy, notwithstanding the interests of the copyright owner' (Copyright Infringement, n.d.), whereas in the EU, the equivalent concept of exhaustion of rights applies only to the first sale of a physical copy of a work and not to further sales. Furthermore, the Digital Millennium Copyright Act in the US protects online service providers from liability for copyright infringement as long as they promptly remove infringing content upon notice. In contrast, the EU's Copyright Directive imposes stricter obligations on online service providers. It obliges them to obtain licenses from right holders and implement content filtering systems to prevent the unauthorised use of copyrighted material (Article 17). In the case of Google Books, the US courts ruled that Google's digitalisation of millions of books was fair use (Coldewey, 2016), while the equivalent case in the EU led to a settlement, and Google had to pay royalties to authors and publishers.

Thus, the EU's problem-solving approach to policy-making has unintended consequences for creative industries and leads to a narrow, instant, and rigid mindset that inhibits creativity. When decision-makers approach creative industries from a problem-solving perspective, they focus on addressing issues such as copyright infringement, piracy, and competition. While these issues are important, they often take away from the potential for growth and the expansion of the creative sector.

Research focus

Among the three reasons for the EU's lagging performance highlighted in this paper, the research presented below focuses on the policy-making factor. From the methodological perspective, it is underpinned by Eugene Bardach's policy analysis cycle model and its critique by Paul Cairney. To corroborate the hypotheses that the traditional policy cycle does not work for creative industries, interviews with stakeholders were conducted, including with the officials of the

European Commission's Directorate-General for Education and Culture (DG EAC) and Directorate-General for Communications Networks, Content and Technology (DG CNECT). Additional insights were gathered from a confidential conversation with a former senior EU official. The interviewees preferred to remain anonymous.

This research seeks to identify alternative policy cycle arrangements and explores alternative policy techniques that might benefit creative industries. One of them is regulatory sandboxes. I identified and reached out to several sandboxes or authorities governing them (European Blockchain Regulatory Sandbox, Latvijas Banka Regulatory Sandbox, and German Federal Ministry for Economic Affairs and Climate Action). The representatives of the German Ministry confirmed the absence of creatives under their regulatory sandboxes umbrella; other requests remained unanswered. Given the embryonic stage of regulatory sandboxes in the creative industries, the research leaned towards their theoretical foundations and desk research of culture-related cases under the European Blockchain Regulatory Sandbox.

As for the quantitative analysis, the source for data on the revenues of creative sectors was Digital Market Outlook (Annex A). Data on the proportion of EU companies in global market capitalisation (https://tinyurl.com/4td59rv8) was sourced from https://companiesmarketcap.com/all-categories/ on July 24, 2023. It covers categories such as Entertainment, Telecommunication, Clothing, Footwear, Video Games, Software, Media/Press, Esports, and Advertising.

A methodological obstacle arose when examining international trade data related to creative services. The intent was to calculate the market penetration of creative services of the EU and its global competitors using the formula: market share of country A in country B in a given sector = exports from country A to country B in that sector / total imports by country B. The analysis was supposed to cover the EU, the US, and China. It was essential for data compatibility to get all information from one source with sufficient data aggregation, which is why the OECD was chosen as a primary source.

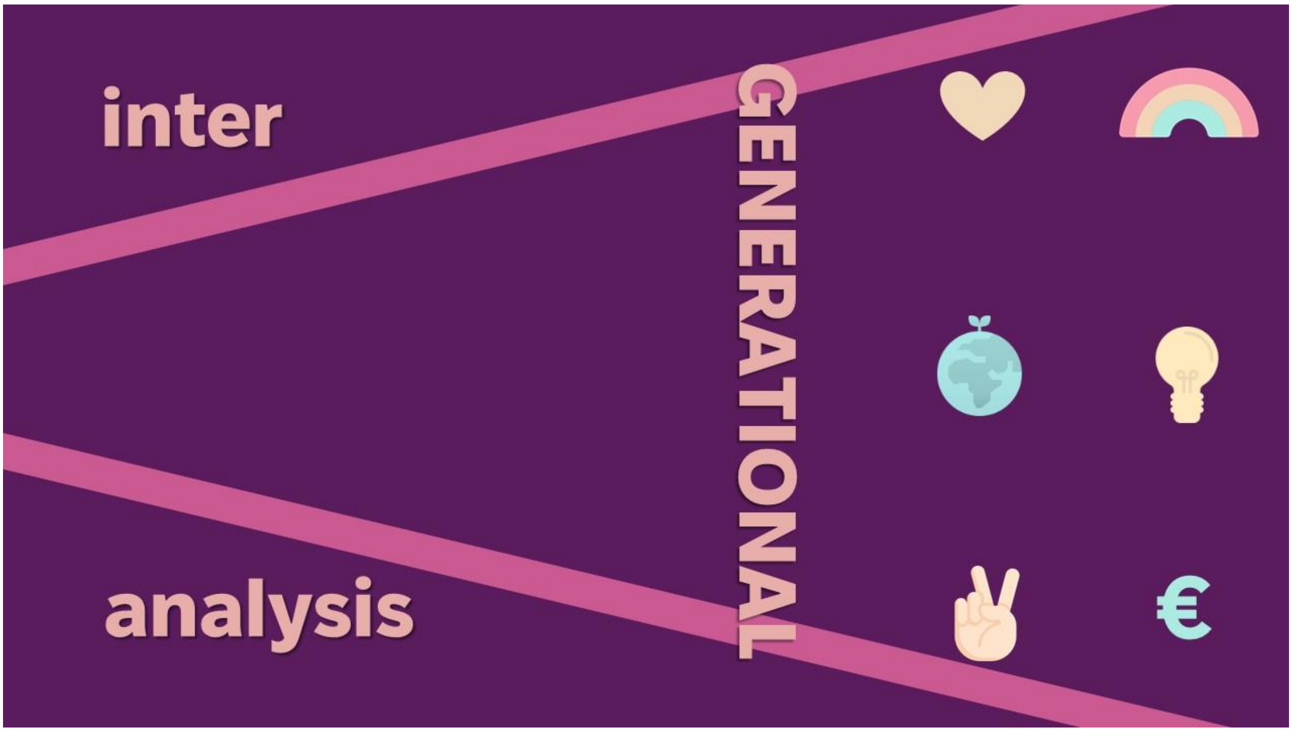
However, discrepancies were noted during the analysis. For instance, the recorded value of the EU telecom exports to the US surpassed the total telecom imports of the US, which is unlikely. Consequently, I decided against using the OECD data and instead shifted the focus to the EU's international trade balance data.

The work on this project has started as part of the College of Europe thesis 'Enhanced Policy Analysis in Creative Industries in the EU and Its Implications for the European Integration of Ukraine' and has been developed and deepened with the CIRCE research fellowship.

D. Analysis and Main Insights

The study suggests three techniques that could enhance or alter conventional policy-making to serve better the evolving needs of the EU creative industries: intergenerational analysis, big data analysis, and regulatory sandboxes. The research aims to foster a more dynamic and responsive policy environment—one that not only addresses challenges but also capitalises on opportunities for the long-term development of the creative sectors.

1. Intergenerational Analysis



The intergenerational analysis identifies the potential impacts of policy decisions on future generations. Positioned at the crossroads of cost-benefit analysis, impact assessment, and scenario planning, intergenerational analysis has been successfully applied in the context of climate change (Kavuncu & Knabb, 2001) and social security. In the former case, it helped to identify the cost of 'the long-term damages caused by the emission of one additional tonne of carbon dioxide into the atmosphere' (Evans et al., 2017), which is used to evaluate the negative consequences of carbon emissions in economic decision-making. In the latter case, it is meant to allow policy-makers to consider adjusting benefits or raising the retirement age to ensure the pensions remain viable for future generations.

However, the utility of intergenerational analysis in the creative industries remains largely unexamined. The inherent challenge lies in the sector's transformative yet intangible social spillover effects, which make it difficult to quantify their impact on future generations.

The European Parliamentary Research Service (EPRS) recently took a step toward bridging this gap with their study 'Increasing European added value in an age of global challenges: Mapping the cost of non-Europe (2022-2032).' It applied intergenerational cost-benefit analysis to 50 policies but acknowledged the absence of a tailored model for creative industries. Instead, the EPRS recommended borrowing a methodology used to analyse the R&D sector, citing the Commission's impact assessment of the Horizon Europe programme as a useful proxy. Employing metrics like return on investment and GDP multipliers, the EPRS suggests that every euro invested in the creative sector could yield up to €11 in GDP, drawing parallels with the R&D sector (Panella et al., 2023). However, this approach falls short of capturing the multi-layered impacts of the creative industries, such as their influence on climate, cultural diversity, and innovation.

To address this gap, the Integrated Assessment Modelling (IAM) could be employed. Traditionally used to evaluate the multifaceted implications of climate change strategies and calculate the social cost of carbon, IAM could be tailored to creative industries. This comprehensive methodology integrates diverse models—from economics and energy to climate and land use—to furnish a more holistic understanding of the subject matter. Many universities and research centres have developed different IAM models, underscoring its adaptability and applicability.

A separate Impact Assessment Model for creative industries may include the following components and characteristics:

1) Basic estimates: value added (including per employee) generated by creative industries, employment in creative industries, creative industries education (applicants, graduates, formal and informal opportunities), number of creative businesses and their turnover/profits, number and density of creative industries infrastructure, state and private capital expenditures for creative industries, creative content consumption, including on digital platforms, etc.

2) Procedural changes and points: impact of new institutions, new legislation, and new access to finance models; the impact of new digital technology on the markets.

3) Time horizon: 2023-2033, annually.

4) Geography: EU (aggregated), Member States and neighbouring countries, NUTS-1 and NUTS-2 levels.

5) Impact on:
- employment multiplier;
- digital creative content creation and distribution;
- digital infrastructure for creative purposes (social media, blockchain, NFT, etc.);
- gross regional domestic product;
- foreign direct investment;
- creative hubs, concert facilities, workshops, libraries, etc.;
- innovation and scientific discovery;
- cultural participation in the region;
- cultural participation and education outputs (students' performance);
- crime rates;
- health and overcoming post-traumatic stress disorder;
- investments and the banking system.

One particularly relevant theoretical framework in designing an Integrated Assessment Model tailored to the creative industries is the Hedonic-Motivation System Adoption Model (HMSAM). This model elucidates the factors driving individuals to adopt and continuously use new technologies and is primarily used to emphasise systems that deliver pleasure rather than mere productivity (Lowry et al., 2013). HMSAM assumes that people are more inclined to embrace and consistently use technology when they perceive it as enjoyable and rewarding.

Given that creative industries often operate at the intersection of technology and hedonism—whether through design, immersive experiences, or emotional engagement—HMSAM offers a lens through which the diffusion and societal uptake of creative technologies can be assessed. Incorporating HMSAM into the impact assessment would help identify how likely a technology or innovation stemming from creative industries will be adopted and used over time.

By understanding these dynamics, policy-makers can make more informed decisions about which projects to invest in and support based not just on immediate economic gains but also on their potential to enrich human experience over the long term.

2. Big Data Analysis

EU's competitors have been leveraging big data analysis for a long time, especially in the business segment (Izsak et al., 2022). Take Netflix as an example: its success can largely be attributed to the recommendation engine. Through a machine learning method called the contextual bandit approach, Netflix anticipates viewer preferences by analysing their viewing habits, searches, demographics, feedback, and preferences. These predictions are correct 80% of the time, significantly elevating user engagement (Mage Dev, 2022). AI's role extends to customer retention and predictive analytics, which can gauge a show's potential success and influence investment decisions. Creative businesses use web scraping to pull data from online platforms and pinpoint emerging trends. In Europe, Sweden's Spotify employs big data analytics via Hadoop to process data from millions of users and refine music recommendations.

The EU governance system has a lot to learn from these businesses. There is a lack of detailed data offering insights into aspects, such as market trends, consumer interest, return on investment, and interconnections within the creative sectors. Eurostat's Culture statistics framework currently provides basic metrics, such as gross value added, employment rates, number of entities, public cultural expenditure, etc., lacking the granularity required for nuanced insights into the performance of creative industries. Even the datasets accessible through the EU's open data platforms are largely static and fail to deliver dynamic trend analyses or financial performance monitoring of creative enterprises.

The evaluation report for the Creative Europe Programme showed that the programme data favours supply-side feedback, which results in a positively biased perception among stakeholders (Feifs et al., 2017). The report also highlighted a data deficit on the financial outcomes of projects supported by the programme. Overall, there is a lack of quantitative insights into how the EU incentives impact the creative sectors, as well as limited empirical understanding of how state aid trickles down the value chain and influences other industries.

While key decision-makers in cultural policy at the European Commission have not fully embraced big data or foresight techniques, some efforts have been initiated by its Joint Research Centre (JRC). Research focusing on Google Search data, OpenStreetMap, Wikidata, news, and online job postings aims to augment traditional statistics with alternative, big data sources. This pilot work suggests that acquiring microdata for creative sectors online is feasible and could serve as a foundation for future economic statistics.

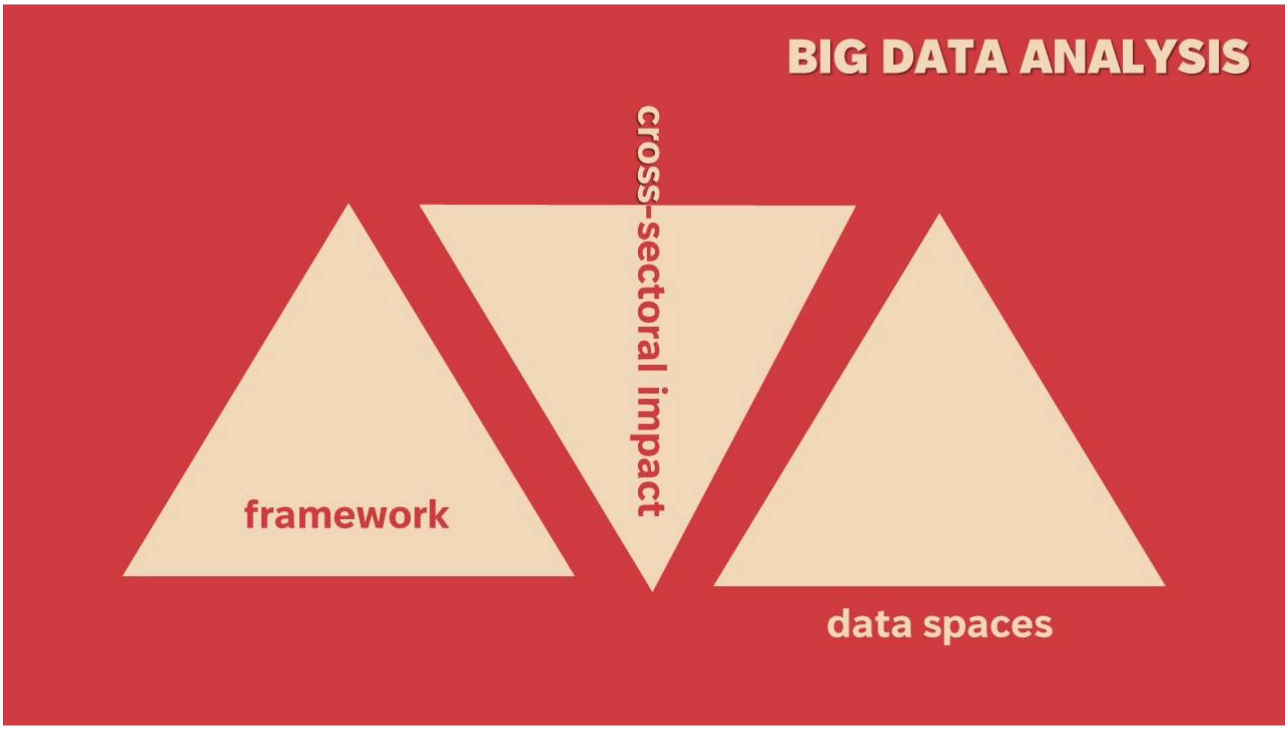
Non-traditional data sources are also making their way into the Cultural and Creative Cities Monitor. For instance, TripAdvisor data feeds into categories like Sights and Landmarks, Museums and Art Galleries, and Concerts and Music Halls, while OpenStreetMap provides information on cinemas and theatres. The JRC has additionally examined online music consumption in Europe through web search data and used online job ads to monitor cultural occupations.

Big data analysis could show how various tax and administrative systems across the EU influence creative businesses, highlight financial shortfalls, and outline areas for growth. Social media platforms, such as comments on YouTube, hashtags on Instagram, and Twitter threads, offer alternative data sources for understanding public perception, market demands, and emerging trends akin to Lev Manovich's cultural analytics (Manovich, 2020).

Big data may scrutinise state aid—the State Aid Register lacks comprehensive information on the financial performance of the projects or companies that receive this aid. This void in data makes it difficult to measure the performance of tools like Creative Europe or EURIMAGES in reversing the declining competitiveness of the European film industry.

Attempting to address these issues, the EU is moving towards data-driven policy-making in cultural sectors. There is a cultural statistics reform coming in the EU, and a report titled 'Measuring the Cultural and Creative Sectors in the EU' (Qmetrics et al., 2022) has been proposed to build a new framework for measurement, aligning with ongoing revisions by Eurostat and NACE. Various EU-funded projects, such as the MESOC (Measuring the Social Impact of Culture), Cicerone, and DISCE (Developing Inclusive & Sustainable Creative Economies), are exploring these new frameworks and taxonomies. A specialised task force, consisting of officials from DG EAC, Eurostat representatives, and academic researchers, has been gathered to refine and update the existing framework for cultural statistics.

However, Eurostat faces challenges in adopting alternative data sources that are compatible at the European level. There are definitional issues that need to be addressed, such as how to distinguish between core and auxiliary activities within creative sectors, or the blur between the audio-visual and music sectors in today's digital landscape. Defining an appropriate sample size for the analyses of songs, music videos, and performances remains a complex task, as it should represent new, emerging projects and not just top positions.



At the same time, creators should have an opportunity to capitalise on the data they generate. As of now, people willingly offer their personal data to tech giants like Google and Meta, which profit immensely from analysing this information. Web 3.0 introduces new approaches to data management, urging creative sectors to get ready for intra-industry data collaboration to unlock its various applications. EU projects, such as a Europeana platform that promotes the sharing of cultural data among heritage organisations and a Skills-OVATE database of online job advertisements, could be a promising initiative. The databases can be leveraged in partnerships with the hospitality sector to enrich the tourist experience and with recruitment firms and educational institutions to align training programmes with market needs. Implementing tiered access could generate revenue by offering in-depth analysis or additional features. This collaborative approach is the driving force behind the concept of data spaces (interview with the European Commission officials, May 2, 2023), which are currently being integrated across various sectors, including media, healthcare, cultural heritage, agriculture, and technology. The end goal here is to interlink these distinct data ecosystems to foster cross-sectoral synergies.

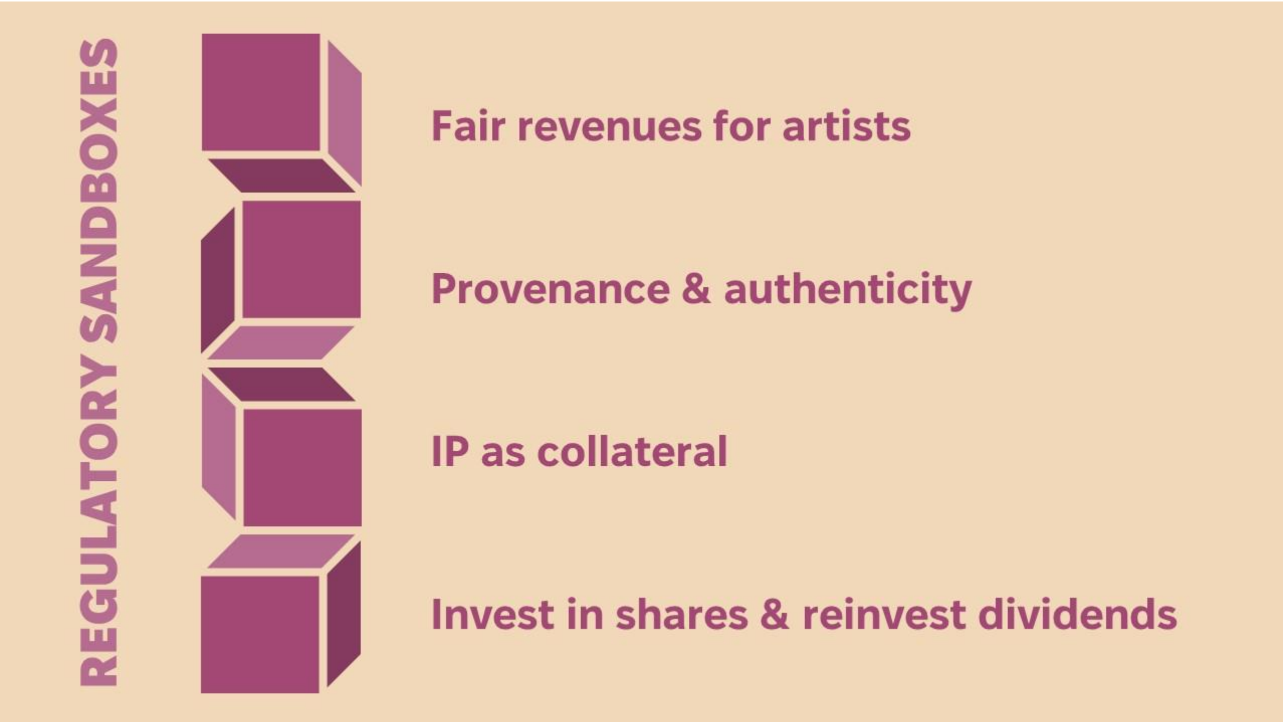
For big data to benefit policy-makers, developing a comprehensive big data framework is necessary. Beyond undertaking individual research projects using web-scraping, NGOs and think tanks could contribute to the establishment of the framework in partnership with the European Commission: the datasets used for analysis, their sources, the conditions under which they are obtained, the frequency, and so on.

3. Regulatory Sandboxes

A regulatory sandbox is a controlled environment that allows enterprises to test new goods, services, or business models without imposing a fully-fledged regulatory burden (Madiega & Van De Pol, 2022). According to the data of the World Bank, there were more than 70 regulatory sandboxes in fintech as of 2020.

There exist different sandbox mechanisms: some modify existing norms, while others involve commitments not to enforce measures for violations of a rule that formally remains in effect

(Johnson, 2023). In practice, regulatory sandboxes are established through a combination of legal and administrative measures. Usually, a government agency or a regulatory body oversees the sandbox and determines which innovations are eligible for participation. The body issues guidelines or criteria for participation, including what types of innovations would be considered, the duration of the testing period, the size and legal form of the business participating, etc. In some cases, regulatory changes may be necessary to enable the effective functioning of a sandbox. For example, the government may need to issue exemptions or waivers to allow the testing of new technologies or business models that would otherwise be prohibited. The sandbox may also provide administrative support, such as access to technical expertise, legal or financial advice, and other resources that can help innovators navigate the regulatory landscape.



There are two major regulatory sandboxes at the EU level. The first one is an AI sandbox, which is part of the draft Artificial Intelligence Act and the broader Digital Single Market strategy. Overseen by the Spanish Ministry of Economic Affairs and Digital Transformation in collaboration with the European Commission, the AI sandbox has a three-year budget of approximately €4.3 million. Testing for this sandbox started in October 2022, and results are expected to be published during the Spanish Presidency of the Council of the EU in the second half of 2023 (Madiega & Van De Pol, 2022).

The second sandbox, known as the European Blockchain Sandbox, is already operating. It was initiated in 2023 to foster collaboration between regulators, supervisory authorities, and blockchain innovators. It plans to support 20 projects annually, starting in 2023, providing them with a secure and confidential environment for legal and regulatory guidance. The first cohort of 20 participating companies was announced in September 2023 (Develle & Waterman, 2023). Among them, one pertains exclusively to the creative industries, specifically the music sector, and three have potential applications in the cultural sphere:

Anotherblock.io is a Swedish platform that changes the relationship between music creators and consumers through blockchain technology. Using the ERC-721 tokens on Ethereum, the platform allows artists to sell ownership percentages of their songs directly to fans, thereby eliminating the need for financial intermediaries. Each token possesses a unique ID containing the ownership percentage for a specific song and includes a legally binding contract outlining terms like streaming royalties. This allows artists to have better control over their work while providing a fair price for their music rights.

The Italian company Almaviva applied to the Sandbox with Giotto OnChain Notarization SaaS, a blockchain-based service designed to certify digital assets' authenticity, immutability, and origin. It offers timestamping and transaction ownership verification on both public (Ethereum and Bitcoin) and private blockchains and is compatible with the European Blockchain Services Infrastructure. The service supports the European Strategy for Data and could be used in R&D projects for carbon footprint certification, aiding enterprises in achieving their ESG goals as part of the European Green Deal. As far as creative industries are concerned, its functionality covers authenticating creative works. In particular, it can confirm that the creative work was done on a certain date (video, photo, audio file, etc.), verify that files, including media files, are unchanged (or changed), and authenticate any file to prove its originality and existence at a specific date and time.

Luxembourgish Compellio has developed a Digital Product Passport solution aligned with the EU's digital strategy to enhance accountability and transparency in supply chains across multiple sectors. Using blockchain, verifiable credentials, and decentralised identity technologies, the solution initially targets circular supply chains within the construction industry, a sector with significant environmental and socio-economic impact. Culture is also identified as a prospective area of focus, particularly for issues such as the importation of cultural goods, illicit trade mitigation, and intellectual property management.

Spanish unBlock is a web3 Smartcity SuperApp designed to connect cities, spaces, businesses, and people, offering a unified digital experience for both residents and tourists. The app serves as a one-stop solution replacing countless cards, apps, or registrations. It allows users to buy, pay for, book, and access various products, events, tourist experiences, and services in a city. unBlock integrates the new European Digital Identity (EU ID WALLET), enabling citizens and tourists to authenticate themselves for any service, procedure, or transaction within public or private spaces in the city. This provides a streamlined, personalised experience that supports tourism as a creative industry.

The selected initiatives of the European Blockchain Sandbox outline the following scope of sandboxes' application for creative industries: copyright law, licensing, authentication, and distribution. The real impact of regulatory sandboxes on creative industries is yet to be seen. However, it is already clear that they have a solid cross-sectoral effect. Since creative sectors typically consist of small companies, freelancers, as well as NGOs and are not extensively regulated, it is not evident if there are specific laws from which creative businesses should be exempt. Thus, the importance of sandboxes to creative industries lies in the provision of testing spaces at the crossroads of different industries, which opens up creative industries to apply and adopt solutions from other sectors. That is, creative sectors will benefit from the technological advancements facilitated by sandboxes.

E. Recommendations

Based on the conducted research, several recommendations are proposed to incorporate additional policy techniques in the traditional policy cycle so that the position of creative industries on the political agenda becomes more visible to leverage their innovative spillover effects:

1. Mobilise cross-sectoral collaboration for creative industries.
The observed trends highlight that creative industries are progressively shifting towards a cross-sectoral model. Rather than functioning as isolated economic sectors, they are becoming an integrated quality across various industries. Given the declining funding for creative industries and the militarisation of the economy, it becomes crucial for these sectors to weave themselves into larger sectoral frameworks, and to identify and capitalise on unique opportunities within specific programmes in fields like energy, climate, and fintech. One example of such integration is the Culture, Creativity, and Inclusive Society cluster in the Horizon Europe research programme. Ultimately, creativity should be promoted as a horizontal attribute of the economy, much like digitalisation and inclusivity, permeating all sectors for greater social impact. Such integration efforts should be backed by a sufficient institutional framework (interministerial working groups, funds, units, etc.) and actionable resources for effective implementation.

2. Harness alternative statistics, especially big data, to provide insights for policy-making.
In line with the ongoing statistical reforms and initiatives, alternative data collection methods could be explored to supplement existing statistics. Although the EU's statistical framework may be reluctant to adopt entirely new, experimental statistics sourced from social media due to the need for consistent and regular data, third-party organisations like think tanks and NGOs can fill this gap. They could provide the EU with non-standard data to highlight new perspectives for policy-making in the field of culture and creative industries. Potential projects might include social media analyses to investigate the cross-sectoral and intergenerational impact of creative industries. A good place to begin might be supplementing the existing databases maintained by the EU, including records of EU funding programme recipients. Coupled with financial reporting statistics, the new data could help to investigate the economic effectiveness of subsidies. New initiatives should consider establishing European data spaces and leveraging the data collected from European creatives for their own benefit and monetisation. Particular attention should be paid to developing the big data analysis framework in creative industries rather than supporting standalone research activities.

3. Encourage creative startups to participate in blockchain, AI and other emerging regulatory sandboxes.
Regulatory sandboxes remain a somewhat novel phenomenon within creative industries, and only a limited number of case studies are currently available. The EU's recent launch of specialised AI and Blockchain sandboxes promises more data points for research—further investigation is needed. Regulatory sandboxes offer a secure environment for experimentation at the intersection of various technologies, such as IT and fintech, thereby facilitating cross-sectoral cooperation and innovation within creative industries.

As far as creative industries are concerned, regulatory sandboxes can offer blockchain-based distribution platforms that provide transparent and fair revenue-sharing for artists. Another application could be the alternative models funding creative industries. Under the regulatory sandbox, it would be possible to test the possibility of using intellectual property as collateral for loans, launch foundations investing in shares (the model of the Finnish Cultural Foundation) and cryptocurrencies and reinvesting dividends in culture-related grants, and provide overdrafts for creative businesses.

At this moment, establishing a standalone creative sandbox may not be cost-effective. Considering the sector's limited capacity and the cost of administrating a sandbox, it would be worthwhile to encourage creative businesses to apply for existing regulatory sandboxes (blockchain, artificial intelligence, fintech services) to test solutions related to creative industries.

Both governments and the EU could promote the existing sandboxes not only among fintech startups but also among the creative ones to encourage their participation and thereby maximise their impact.

4. The interviewed experts identified several alternative options that would allow to allocate additional resources to the creative industries in the EU:

1) One solution lies in reinvesting revenues by video-on-demand (VOD) services, as allowed by Article 13(2) of the Audiovisual Media Services Directive. This directive authorises Member States to require financial contributions from VOD services for the creation of European works, either through direct content investment or contributions to national funds. Many Member States have already begun implementing this provision, obliging platforms like Netflix and YouTube to allocate a share of their earnings toward cultural production from either the host nation or other European states (Blázquez et al., 2022).

2) In 2022, the European Investment Bank released the Philanthropic Capital Study (Venon, 2022), showing opportunities to engage foundations and philanthropic organisations in the InvestEU programme. These organisations hold significant capital, which is often uninvested. This capital could be leveraged to generate more funding for social sectors, including creative industries. In some cases, it makes more sense for foundations to channel their resources through 'mission-related investments' instead of providing grants. This approach can help establish sustainable enterprises that are financially self-sufficient and capable of supporting other less stable entities. While the concept is still emerging, there is a rising interest among foundations to explore such investment opportunities, and the EU stands ready to facilitate this.

3) Inspired by the concept of ‘sandbox,' the interviewees suggested a cooperative framework that fosters partnerships between small startups and larger organisations, such as public broadcasters. Under this model, a substantial grant could be allocated to a large public broadcaster to establish 'playground' spaces within their facilities. These spaces would be open for startups to work on and present various projects. This arrangement would provide a win-win scenario: startups gain access to affordable workspace and potentially secure contracts, while public broadcasters benefit from the innovative projects and technological expertise that they may otherwise lack, such as that in the field of data analysis (interview with the European Commission officials, May 2, 2023).

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Annex A

Quantitative analysis of the revenues generated by nine sectors in the online segment of the entertainment and media industry (event tickets; video games; video on demand; ePublishing; digital music; apps: social networking; digital advertising; eCommerce: fashion; eCommerce: furniture) in several countries or regions in North America, the European Union, and Asia with strong or emerging creative economies: the EU, the United States, Canada, China, Singapore, Japan, and South Korea.

In the **video games** sector, the EU has the lowest per capita revenue at 31, while leading countries such as Japan, South Korea, and the US boast per capita revenues of 587, 410, and 274, respectively. A similar situation can be observed in **ePublishing**, where the EU (19) trails all analysed countries except for China (3), with Singapore (85) and the US (63) at the top. In the **digital music** sector, the EU has a similar indicator (12) to that of Canada (12) and South Korea (12), not far from the US (31), with the leader being Singapore (124).

The **online ticket** market is dominated by North America (US—98, Canada—67), while the EU (27) is slightly behind South Korea (32) and Singapore (30). In the **Video-on-Demand** segment, North America (US—188, Canada—87) leads again, followed by Asian countries such as Japan (51) and South Korea (45). The EU (39) ranks further behind.

In terms of revenue from **social networking apps**, the EU holds the lowest position (18), while the leader, the US, generates $150 per capita. Asian countries have relatively homogenous estimates, with China at 41, South Korea at 34, and Japan at 33. European countries lag in **digital advertising revenues**, ranking second to last (140) after leaders such as the US (806), Canada (385), Singapore (263), Japan (204), and South Korea (197). As for the **e-commerce fashion** sector, South Korea holds the top position (636), followed by the US (617), Canada (436), Japan (401), and the EU (322).

		Revenues generated across nine sectors in the online segment of the entertainment and media industry								
Sectors	Year	EU-27, US$, bn	USA, US$, bn	Canada, US$, bn	China, US$, bn	India, US$, bn	Indonesia, US$, bn	Japan, US$, bn	Singapore, US$, bn	South Korea, US$, bn
Event tickets	**2019**	8.84	24	1.72	6.8	1	0.19	2.51	0.12	1.24
	2020	2.38	6.76	0.51	2.2	0.3	0.62	0.85	0.032	0.32
	2021	3.87	11.77	0.9	3.19	0.63	0.12	1.26	0.066	0.49
	2022	9.2	24.25	1.73	9.46	1.31	0.28	2.56	0.13	1.3
	2023	12.2	33.04	2.2	10.42	1.6	0.34	3.08	0.18	1.64
	2024	12.8	35.28	2.32	11.08	1.82	0.37	3.18	0.19	1.71
	2025	13.19	36.76	2.4	11.54	1.9	0.38	3.25	0.2	1.75
Video games	**2019**	16.52	47.93	2.91	66.25	1.28	0.92	42.35	0.14	8.38
	2020	19.19	56.55	3.51	84.1	1.7	1.1	45.86	0.17	11.59
	2021	23.3	71.47	4.43	99.42	2.1	1.4	57.69	0.19	15.54
	2022	25.12	81.61	5.08	92.76	2.4	1.6	65.46	0.22	18.39
	2023	29.22	92.27	5.77	109.2	2.77	1.8	73.59	0.25	21.05
	2024	32.38	101.8	6.41	125.6	3.14	2	80.77	0.29	23.4
	2025	35.26	110.1	6.98	134.1	3.5	2.1	86.85	0.34	25.39
Video on demand	**2019**	8.43	29.52	1.53	13.02	1.12	0.28	3.28	0.08	1.09
	2020	11.3	38.66	2.05	17.48	1.71	0.4	4.28	0.12	1.48
	2021	13.94	47.78	2.55	21.73	2.41	0.5	5.17	0.15	1.82
	2022	14.28	53.71	2.85	24.45	3.01	0.56	5.62	0.16	2.01
	2023	17.67	63.38	3.35	28.24	3.77	0.65	6.41	0.19	2.29
	2024	19.89	72.55	3.84	31.89	4.5	0.74	7.12	0.22	2.56
	2025	21.73	80.33	4.28	35.01	5.13	0.81	7.71	0.24	2.78
ePublishing	**2019**	7.56	19.6	0.93	2.79	0.73	0.2	3.6	0.45	1.26
	2020	7.39	19.34	0.91	3.08	0.75	0.21	3.53	0.43	1.32
	2021	8.15	20.69	1	3.6	0.95	0.24	4.09	0.48	1.38
	2022	7.96	20.66	1.04	3.89	1.1	0.25	4.15	0.49	1.41
	2023	8.63	21.22	1.08	4.23	1.21	0.26	4.33	0.51	1.45
	2024	8.97	21.77	1.13	4.57	1.32	0.28	4.48	0.52	1.5
	2025	9.18	22.11	1.15	4.8	1.4	0.3	4.58	0.54	1.52
Digital Music	**2019**	3.45	6.32	0.32	1.49	0.2	0.14	0.54	0.37	0.32
	2020	4.49	8.1	0.4	2.08	0.33	0.2	0.64	0.48	0.44
	2021	5.03	9.04	0.43	2.51	0.39	0.22	0.7	0.65	0.52
	2022	5.05	9.68	0.45	2.85	0.45	0.24	0.75	0.67	0.58
	2023	5.51	10.59	0.48	3.22	0.51	0.26	0.82	0.74	0.65
	2024	5.85	11.3	0.5	3.5	0.57	0.28	0.88	0.82	0.7
	2025	6.11	11.88	0.52	3.71	0.62	0.3	0.93	0.88	0.75
Apps: Social Networking	**2019**	4.11	23.79	0.98	22.71	0.49	0.27	2.02	n/a	0.86
	2020	5.42	32.59	1.27	32.21	0.61	0.34	2.61	n/a	1.1
	2021	7.16	42.89	1.66	46.42	0.82	0.45	3.34	n/a	1.49
	2022	7.57	45.86	1.79	51.39	0.87	0.47	3.65	n/a	1.6
	2023	8.29	50.35	1.99	59.83	0.93	0.51	4.1	n/a	1.77
	2024	8.82	53.48	2.15	64.32	0.99	0.54	4.47	n/a	1.9
	2025	9.28	56.16	2.29	68.56	1.04	0.56	4.78	n/a	2.01

Digital Advertising	2019	37.58	139	8.46	87.03	2.47	1.5	16.96	0.88	5.79
	2020	42.09	168.7	9.7	107.1	2.9	1.8	18.32	1	6.71
	2021	53.13	224.2	12.54	145.2	3.83	2.3	22.24	1.3	8.32
	2022	57.76	243.9	13.64	155.7	4.3	2.6	23.93	1.42	9.12
	2023	62.96	271.2	14.91	173.6	4.81	2.8	25.61	1.57	10.11
	2024	67.86	298.4	15.99	189	5.29	3	27.18	1.72	10.97
	2025	72.58	325	16.88	203.9	5.79	3.3	28.7	1.88	11.7
eCommerce: Fashion	2019	85.46	115.8	8.88	224.4	7.49	3.6	28.31	0.75	23.87
	2020	112.12	144.8	10.95	277.5	11.77	5.68	34.76	1.11	28.36
	2021	133.01	180.7	14.03	312.1	16.85	8.98	47.45	1.63	36.01
	2022	114.68	183.6	13.33	295.9	16.46	7.8	41.19	1.58	29.72
	2023	144.81	207.7	16.86	336.8	19.86	8.29	50.23	1.92	32.64
	2024	165.65	236.2	19.94	376.1	23.64	8.64	56.34	2.26	33.7
	2025	189.16	266.9	23.39	418.3	28.39	9.04	62.99	2.66	34.69
eCommerce: Furniture	2019	22.02	62.62	2.76	22.87	2.3	0.95	5.65	0.21	3.44
	2020	29.86	76.67	3.42	28.01	2.8	1.36	6.42	0.3	3.8
	2021	35.97	86.45	3.91	33.47	3.6	2.1	7.83	0.41	3.99
	2022	30.85	84.49	3.73	36.32	3.4	1.9	7.12	0.39	3.29
	2023	39.84	92.62	4.88	48.14	4	2.2	9.39	0.48	3.72
	2024	45.83	103.1	5.92	61.13	4.6	2.5	11.2	0.57	3.91
	2025	52.51	114.1	7.16	76.51	5.4	2.8	13.3	0.67	4.1
Source: Digital Market Outlook. (2023). Statista. https://www.statista.com/outlook/dmo/digital-advertising/worldwide?currency=usd Years 2023-2025: forecast										

		Revenues per capita across nine sectors in the online segment of the entertainment and media industry						
Sectors:		Revenues per capita, EU-27, US$	Revenues per capita, US, US$	Revenues per capita, Canada, US$	Revenues per capita, China, US$	Revenues per capita, Japan, US$	Revenues per capita, Singapore, US$	Revenues per capita, South Korea, US$
Event tickets	2023	27.1	98.2	56.9	7.2	24.6	30.1	31.9
Video games	2023	31.0	274.2	149.2	75.0	586.9	41.8	409.6
Video on demand	2023	39.2	188.3	86.6	19.4	51.1	31.8	44.6
ePublishing	2023	19.1	63.1	27.9	2.9	34.5	85.3	28.2
Digital Music	2023	12.2	31.5	12.4	2.2	6.5	123.7	12.6
Apps: Social Networking	2023	18.4	149.6	51.4	41.1	32.7	N/a	34.4
Digital Advertising	2023	139.6	805.9	385.5	119.3	204.3	262.5	196.7
eCommerce: Fashion	2023	321.1	617.2	435.9	231.4	400.6	321.0	635.1
eCommerce: Furniture	2023	88.3	275.2	126.2	33.1	74.9	80.3	72.4

Revenues per capita = Revenues/Population

Data about the countries' population (2023 projection) is retrieved from Worldometer (www.Worldometers.info)—elaboration of data by United Nations, Department of Economic and Social Affairs, Population Division.