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Study on the discoverability of diverse European cultural content in the digital environment

Final report

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Directorate-General for Education, Youth, Sport and Culture

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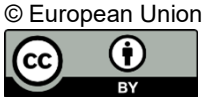

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List of abbreviations

ACPS	Artist-Centric Payment System (innovative music payout model introduced by Deezer)
AI	Artificial Intelligence (simulation of human intelligence by machines)
AIMAC	International Association of Arts and Cultural Management (organiser of the AIMAC conference on arts and cultural management)
ARCOM	Autorité de Régulation de la Communication Audiovisuelle et Numérique (France's Regulatory Authority for Audiovisual and Digital Communication)
ARTE	Association Relative à la Télévision Européenne (French-German cultural TV network)
AVMSD	Audiovisual Media Services Directive (EU directive governing audiovisual media services)
AVSS	Audiovisual Streaming Services (video streaming platforms, as defined in Canada's OSA context)
BAPLA	British Association of Picture Libraries and Agencies (UK trade association for image libraries)
CADAF	Crypto and Digital Art Fair (event showcasing digital art and NFTs)
CDEC	Coalition for the Diversity of Cultural Expressions (Canadian coalition promoting cultural diversity; *CDEC* is the French acronym "Coalition pour la Diversité des Expressions Culturelles")
CCS	Cultural and Creative Sectors (broader sectoral grouping of cultural and creative fields)
CEPIC	Coordination of European Picture Agencies – Stock, Press and Heritage (European association of picture libraries, known as the "Center of the Picture Industry")
CIDOC-CRM	CIDOC Conceptual Reference Model (an ISO standard ontology for cultural heritage information)
CISAC	International Confederation of Societies of Authors and Composers (global network of authors' rights societies)
COVID-19	Coronavirus Disease 2019 (COVID-19 pandemic)
CRTC	Canadian Radio-television and Telecommunications Commission (Canada's regulatory authority for broadcasting and telecom)
DG EAC	Directorate-General for Education, Youth, Sport and Culture (European Commission department often abbreviated as DG EAC)
DMLA	Digital Media Licensing Association (US-based trade association for media licensing, formerly PACA)

DMA	Digital Markets Act (EU law regulating large digital “gatekeepers”)
DSA	Digital Services Act (EU law on intermediary platforms and online content moderation)
EBU	European Broadcasting Union (alliance of public service media organisations in Europe)
ECCD	European Coalitions for Cultural Diversity (network of national coalitions supporting cultural diversity in Europe)
ECSA	European Composer and Songwriter Alliance (European network of music authors’ associations)
EIT	European Institute of Innovation and Technology (EU body supporting innovation)
EMC	European Music Council (European umbrella organisation for music sectors)
EP	European Parliament (legislative institution of the EU, often referenced in context of resolutions)
EPUB	Electronic Publication (EPUB, a standardised e-book file format)
ERGA	European Regulators Group for Audiovisual Media Services (EU network of audiovisual media regulators)
EU	European Union (political and economic union of 27 European states)
FEP	Federation of European Publishers (association of book publishers in Europe)
GDPR	General Data Protection Regulation (EU regulation on data protection and privacy)
GESAC	European Grouping of Societies of Authors and Composers (association of EU authors’ collective management organisations)
GLAM	Galleries, Libraries, Archives, and Museums (cultural heritage institutions sector)
HHI	Herfindahl-Hirschman Index (market concentration index used in competition analysis)
HTML	HyperText Markup Language (standard markup language for web pages)
IASPM	International Association for the Study of Popular Music (scholarly association for popular music studies)
IFPI	International Federation of the Phonographic Industry (global trade body of the recording industry)
IMPALA	Independent Music Companies Association (European association of independent music labels)
IMPF	Independent Music Publishers International Forum (global network of independent music publishing companies)

ISBN	International Standard Book Number (unique 13 or 10-digit code for identifying books)
ISRC	International Standard Recording Code (12-character code for uniquely identifying sound recordings)
ISO	International Organisation for Standardisation (international standards-setting body)
KIC	Knowledge and Innovation Community (thematic innovation network established under the EIT)
LATICCE	Laboratoire de recherche sur la découvrabilité et les transformations des industries culturelles à l'ère du commerce électronique – *"Research Laboratory on the Discoverability and Transformations of Cultural Industries in the Era of Electronic Commerce"* (Canadian research lab focused on discoverability)
MS	Member State (country that is a member of the European Union; plural *MSs* for Member States)
MSS	Music Streaming Services (audio streaming platforms like Spotify, Deezer, etc.)
OJ	Official Journal (of the European Union, the EU's gazette for legal acts and public notices)
OLMCs	Official Language Minority Communities (term used in Canada for minority-language communities)
OMC	Open Method of Coordination (EU intergovernmental policy cooperation framework)
ONIX	Online Information eXchange (ONIX, an XML-based standard for book industry metadata)
OSA	Online Streaming Act (Canadian law (2023) modernising broadcasting regulation for online platforms)
PDF	Portable Document Format (PDF, file format for documents independent of software/hardware)
PEACH	Personalisation and Recommendation Ecosystem for Digital Transformation (EBU's platform for personalised content recommendations)
SEO	Search Engine Optimisation (strategies to improve content's visibility in search engine results)
SQL	Structured Query Language (programming language used for managing data in relational databases)
TEU	Treaty on European Union (Maastricht Treaty, 1992) – one of the EU's primary founding treaties
TFEU	Treaty on the Functioning of the European Union (Treaty of Rome, 1958) – the other core EU foundational treaty, alongside the TEU

UK	United Kingdom (sovereign country; was an EU Member State until 2020)
UNESCO	United Nations Educational, Scientific and Cultural Organisation (UN agency promoting education, culture, and science)
URL	Uniform Resource Locator (web address used to locate resources on the Internet)
US	United States (of America; country)
USA	United States of America (often referred to as the United States or US)
VLOPs	Very Large Online Platforms (online platforms with over 45 million EU users, as defined in the DSA)
VLOSEs	Very Large Online Search Engines (search engine services with over 45 million EU users, per the DSA)
XML	Extensible Markup Language (flexible text-based format for structured data, commonly used for data exchange)

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Foreword

The digital world has a huge impact on the contemporary cultural landscape. Online platforms and algorithm-driven distribution systems increasingly influence which content is seen, recommended and consumed.

In this context, the fact that cultural content is available is no longer enough. It must be discoverable. It must be easily found by audiences.

That is why discoverability has emerged as a key condition for safeguarding and promoting **Europe's cultural and linguistic diversity;** a cornerstone of the European project.

Supporting our cultural and linguistic diversity is at the heart of EU cultural policy making.

With regard to the digital transition, the Culture Compass for Europe acknowledges the leading role of the EU in establishing a regulatory and policy framework that allows European creators and cultural diversity to thrive. It also announced the development of a dedicated **AI strategy for the cultural and creative sectors,** to ensure that AI contributes to a diverse European cultural environment and supports human creativity.

This report on the discoverability of diverse European cultural content online is a step towards realising the vision of the Compass - a more diverse, resilient, and sustainable European cultural landscape.

It provides valuable insights on issues including the dynamics of content discovery, cultural trends and editorial and algorithmic curation. Furthermore, it sets out innovative recommendations for a way forward.

I trust that this report will play an important role in the development of cultural policies at all levels, and will support the cultural and creative sectors as they work to effectively navigate the digital world and leverage technology for their benefit.

Let's build a future where European cultural diversity is celebrated, shared, and sustained, online and offline!

Glenn Micallef

European Commissioner for Intergenerational Fairness, Youth, Culture and Sport

Executive summary

Introduction

The Importance of discoverability

In an increasingly digital cultural landscape, where audiences encounter music, films, books, and other creative works primarily online, **discoverability** has become a decisive factor in shaping what is seen, heard, and valued. Put simply, discoverability determines whether a cultural work can rise above the digital noise to be noticed, accessed, and engaged with by audiences. For Europe's rich cultural and linguistic diversity, this is no longer a peripheral concern but a central condition for visibility and access in the digital age.

At the same time, Europe's cultural and creative industries are operating in a fast-evolving environment shaped by digitalisation, intensifying global competition, and the growing power of large online platforms. While these platforms open unprecedented pathways to global audiences, they also introduce new structural challenges. Algorithmic curation, limited transparency, and control over data can shape cultural consumption in opaque ways, while market concentration, content saturation, potential bias in recommendation systems, and the rapid rise of AI-generated content further complicate the ecosystem.

Against this backdrop, safeguarding cultural and linguistic diversity online has emerged as a pressing policy priority at international, European, and national levels. Europe has long championed cultural diversity, as reflected in UNESCO conventions and EU treaties. Yet policy efforts have traditionally focused on supporting the production and availability of diverse cultural content. Today, policymakers increasingly recognise that **being available is no longer enough**: discoverability has become the next critical frontier. This shift raises a new set of complex questions, which this report explores in depth.

Objectives, scope and methodology

Commissioned by the European Commission under the **EU Work Plan for Culture 2023–2026**, this study examines how European cultural content is discovered and accessed in today's digital environment. It assesses the current state of online discoverability of diverse European cultural works, with particular attention to the role of platforms, curation, and recommender systems, and identifies emerging challenges and areas for policy action.

The study focuses primarily on the **music and book sectors**. Other cultural sectors are addressed more selectively, while the audiovisual sector falls outside the scope of the study.

The research combines desk research, sectoral analysis, and data mapping with extensive stakeholder engagement, including interviews, focus groups, and a workshop. A Europe-wide consumer survey of over 400 participants provided

additional insights into user experiences. Quantitative analyses examined consumption patterns, curation practices, algorithmic recommendations, and metadata in the music and book sectors. Academic and methodological rigour was ensured through expert peer review by a Scientific Board.

The impact of digitalisation and platformisation on cultural and linguistic diversity

Digitalisation, platformisation, and diversity

Digitalisation and the rise of global platforms have **fundamentally reshaped cultural and linguistic diversity in Europe**. Content availability has expanded dramatically, but availability alone does not guarantee diverse consumption. Instead, discoverability now depends on exposure diversity — whether audiences are actually recommended, notice, and engage with a variety of cultural expressions.

Platformisation has **blurred traditional sectoral boundaries**, with performers, creators, cultural organisations and museums producing cross-media content, while global tech platforms act as gatekeepers. This convergence has created an attention economy where recommendation systems and curation practices strongly influence what becomes visible, prioritising certain works while neglecting others.

A conceptual framework for discoverability

Digital discoverability is the likelihood that cultural content will actually be noticed and engaged with online. It is not just about content being available, but about whether audiences are exposed to it and interact with a diverse range of works. In today's digital environment, supply is abundant—but visibility is scarce. What people end up seeing is shaped by a complex ecosystem of actors and dynamics. This study describes a discovery ecosystem with six interconnected elements:

- **Engagements** – the personal and social conditions that shape whether people can and want to explore, such as language, background, and digital skills.
- **Presentations** – the way platforms organise and showcase content through design, navigation, and placement—deciding what catches the eye and what stays hidden.
- **Facilitators** – the human and automated gatekeepers, from search tools and recommender systems to editorial teams, that decide what gets pushed forward.
- **Interpreters** – the behind-the-scenes systems that track clicks, listens, and viewing habits, turning behaviour into signals that shape future suggestions.
- **Experiences** – how users actually move through platforms, switching between curiosity and routine, shaped by trust, transparency, and context.

- **Ripples** – the wider consequences of these discovery patterns, influencing cultural diversity, creator visibility, economic opportunities, and shared identity.

Global digital platforms (streaming services, social media, online stores) have become central gatekeepers of cultural discovery. They rank, moderate, and recommend content in ways that shape attention. In this attention-driven economy, prioritisation (ranking), prominence (visibility), and exposure diversity (what users actually encounter) are tightly linked and determine real opportunities for discovery.

The conceptual framework developed for the study highlights that **discovery happens through both active search and passive algorithm-driven exposure**. Users may intentionally seek out new works, but they are also guided by autoplay playlists, homepage carousels, and recommendations. Even "active" choices are influenced by what platforms present first. Interfaces, algorithms, and human curators therefore play a decisive role in shaping what stands out—and whether cultural horizons widen or narrow. Ultimately, diversity of exposure is the key measure of whether discoverability is truly happening. The research also identified several cross-cutting challenges for the discoverability of diverse European cultural content online:

- **Language silos and translation gaps** keep audiences confined to familiar languages, leaving minority and smaller-language works largely invisible across borders.
- **Generational and behavioural divides shape discovery paths**, with younger users led by social media and trends, while older audiences rely on established, more traditional channels.
- **Too much content on a few big platforms creates a paradox:** content is everywhere, but attention and visibility are increasingly scarce.
- **Personalisation, algorithmic bias, and weak metadata** often reinforce what is already popular, narrowing exposure to diverse and lesser-known works.
- **Limited transparency and data access** leave creators, cultural operators, and researchers in the dark about how visibility is generated and how it might be improved.
- **Unequal promotion and curation power** favour large players who can invest in prominence, while smaller and independent actors struggle to be seen.
- **Capacity gaps** persist across the sector, with many creators and institutions lacking digital skills, marketing expertise, or resources.
- **Low user awareness and digital literacy** combined with reliance on default recommendations quietly narrows cultural choices.
- **The rise of generative AI** risks flooding platforms with synthetic content, making it harder for human-created European works to stand

out and raising unresolved questions around attribution, copyright, and cultural value.

Policy landscape

The discoverability of diverse cultural content online has become a major policy priority internationally, at EU level, and across Member States. While cultural diversity is long embedded in frameworks such as the 2005 UNESCO Convention on the protection and promotion of the diversity of cultural expressions and Article 167 of the Treaty on the Functioning of the European Union, digitalisation and platformisation have increased urgency to act: **visibility and promotion—not just availability—now shape cultural sustainability and pluralism**. International policy debates increasingly point to the need for proactive policy intervention as global platforms and new technologies reshape cultural access.

Cultural diversity is central to European identity. Although the EU has only supportive competences in culture, it shall take cultural aspects into account in its policies in particular to respect and promote the diversity of its cultures. Key strategies, including the **EU Work Plan for Culture 2023–2026** and the **Culture Compass for Europe**, explicitly prioritise improving the discoverability of diverse European works online. EU AI strategies also support investment in AI for greater visibility of European cultural content, while emphasising alignment with European values.

Several EU instruments indirectly influence discoverability. The **Audiovisual Media Service Directive** introduces quotas and prominence obligations for European audiovisual works. The **Digital Services Act** and **Digital Markets Act** increase transparency and user control over ranking and recommender systems. The **AI Act** and **Accessibility Act** add requirements on marking AI-generated content and ensuring accessibility. While these measures do not directly regulate “discoverability” as such, they create a more transparent, contestable and user-empowering digital environment in which diverse content can more fairly surface. **Funding programmes** complement regulation by supporting cooperation, research, innovation and cross-border circulation of European cultural content. **Member States** have also experimented with diverse policies. These initiatives improve access to national culture and heritage but often prioritise digitisation, consumption or affordability over structural discoverability.

Music sector

The European music sector has been **reshaped by the rise of music streaming services**, which now dominate revenues and act as the main gateways to discovery. Streaming has lowered barriers for independent artists, but it has also created extreme overcrowding: in 2023, 184 million tracks were available, nearly 80 million of them streamed fewer than ten times. The rapid growth of AI-generated music—already close to one fifth of uploads—adds further pressure on visibility. Survey data confirms that streaming platforms are the primary route to discovery (89%), followed by recommendations from friends and family (85%)

and live concerts (73%). Playlists, both algorithmic and editorial, are central, with social media increasingly shaping what audiences hear.

Based on data collected by the study, **European music performs relatively well in national contexts**: 38% of songs in top streaming charts are European, largely driven by domestic artists (24%). **Cross-border circulation remains limited**, however, with non-national EU works accounting for just 14% of chart entries. Genre trends show the dominance of urban styles (rap, hip-hop, trap), often rooted in local languages, alongside global genres such as Afrobeats and Electronic Dance Music. Exposure is still concentrated around superstar artists, though some platforms offer relatively greater visibility to mid-level and developing artists, while gender imbalances persist despite recent improvements. Metadata gaps further limit accurate measurement of diversity. Younger listeners emerge as key drivers of diversity, showing greater openness to new genres and emerging artists.

Discovery on streaming platforms is shaped by a mix of editorial and algorithmic playlists, used by nearly all users. High-profile playlist placement can generate millions of streams. Algorithms optimise for engagement but often reinforce popularity loops, privileging mainstream, U.S. and English-language content. However, the quantitative research conducted in this study points to recommender systems' potential ability to capture certain localness when national music is already listened to. While 62% of surveyed users feel algorithms help them discover new music, far fewer report greater exposure to national, EU or non-English language works—highlighting a gap between perceived discovery and actual diversity. Social media pathways often surface greater diversity, though examined social media platform charts remain dominated by U.S./UK tracks.

Key challenges to discoverability of diverse European music include:

- **High volume of releases:** The massive and continuously growing number of new weekly uploads on digital platforms makes it challenging for diverse European artists to achieve visibility, as recommendation systems and user attention are spread across an ever-expanding pool of content. This is worsened by **streaming fraud** and the rapid **proliferation of AI-generated music**.
- **Gatekeeping via playlists and algorithms**: Popularity bias entrenches dominance of mainstream and non-EU content.
- **Passive listening behaviours** (lean-back/background use) reduce active discovery, leading to repetitive recommendations.
- **Metadata issues**: Incomplete or inconsistent metadata (International Standard Recording Code errors, limited non-Latin support, missing pronoun data) undermine attribution and discoverability.
- **Market concentration**: Major labels dominate digital royalties and influence playlisting priorities.

- **Digital capacity gaps among creators and organisations:** Many European creators, smaller publishers, independent labels, and cultural organisations lack the digital skills, data literacy, and resources needed to promote their work effectively online.
- **Fairness concerns**: Practices linking visibility to reduced royalties, raise ethical and financial challenges, although alternative payout systems show promise.

Despite these challenges, the digital environment also provides new tools that can contribute to strengthen the diversity and discoverability of European music, including:

- **Innovative interfaces** allow intuitive exploration and serendipitous discovery.
- **Hybrid models** combine algorithmic and editorial approaches to surface emerging artists.
- **Editorial curation** can meaningfully boost female and independent artists.
- **Social media and gaming platforms** offer powerful new pathways for exposure, often driving measurable spikes in streams and chart performance.
- **Data transparency tools** empower creators to understand algorithms, optimise metadata, and target audiences more effectively.
- **Decentralised and community-driven models** demonstrate how human curation, and participatory platforms can foster diverse discovery.

Book sector

The European book sector **remains strongly anchored in offline discovery**: around 75% of sales still happen in physical bookstores, which provide trusted curation, community engagement, and personalised recommendations. Libraries also play a key role in access and inclusion. Word-of-mouth remains the most trusted discovery channel, showing that social networks still shape reading choices. At the same time, **digitalisation has expanded the market through e-books, audiobooks, and subscription services**. Social media communities now influence discovery—especially among younger readers—but often amplify English-language dominance at the expense of Europe's linguistic diversity. Emerging initiatives, including AI-driven tools and national platforms, point to more localised and inclusive alternatives.

Survey results show strong loyalty to home-country authors (70% of readers are very likely to read them), alongside openness to EU and global literature. However, **translation gaps, weak visibility, and limited recommendations** remain major barriers to cross-border circulation. Screen adaptations can significantly boost the prominence of European works. Gender diversity remains

uneven, with women underrepresented in bestseller lists, though slightly more visible on digital platforms.

Platform and bestseller analysis reveals structural imbalances. Based on the data analysis performed in the context of the study, on the examined platforms targeting global audiences, non-EU titles frequently dominate, with EU titles typically accounting for less than 10% of the most popular books. National EU titles achieve substantially stronger visibility on local EU platforms and national storefronts of international platforms, while non-national EU titles generally represent a smaller share, with notably exceptions mainly observed in smaller or linguistically shared markets.

The sector faces persistent structural barriers to discoverability:

- **Translation gaps and high costs limit cross-border circulation**, while the relative affordability and prevalence of English-language editions further reinforce linguistic imbalances.
- **Inconsistent use of metadata standards and cataloguing** hinder visibility, especially for smaller publishers.
- **Platform fragmentation** creates silos, with limited interoperability across ecosystems.
- **Dominance of global platforms** leaves EU authors underrepresented, while EU-specific or local platforms often lack scale.
- **AI-generated books** are rapidly flooding digital marketplaces, raising risks of cultural homogenisation and overwhelming authentic European works.
- **Author visibility** pressures place increasing demands on personal branding and social media presence, often disadvantaging minority and smaller-market authors.

Despite these challenges, significant opportunities exist to strengthen discoverability of European literature, including:

- **Human translation remains essential for literary works**, ensuring nuance, cultural context, and stylistic integrity; EU funding programmes like Creative Europe already support this, but further investment could strengthen translator networks, fair pay, and cross-border circulation.
- **Expanding production in e-books and audiobooks** in multiple languages increases discoverability across borders, benefiting both native speakers and language learners, while also lowering costs for independent authors and small publishers.
- **Inclusive collections within digital libraries and archives** can spotlight regional, niche, and marginalised voices, countering dominance of mainstream titles.
- **AI-powered search and recommendation tools** in digital libraries can highlight overlooked works, improve accessibility, and strengthen representation of diverse European literature.

Other cultural and creative sectors

Beyond music and books, cultural heritage, visual arts, and performing arts each face distinct discoverability dynamics shaped by their institutional structures and how audiences engage. Cultural heritage is largely public and preservation-driven, with digitisation and platforms like **Europeana** playing a key role. Visual arts still rely on galleries, fairs, and exhibitions, but are increasingly promoted and traded through social media, online auctions, and algorithmic curation. Performing arts remain rooted in live, place-based experiences, though streaming, online marketing, and digital ticketing are gradually reshaping access.

Across all three sectors, digitisation remains uneven. Many heritage collections are still not digitised and metadata quality varies widely. Visual arts face high digitisation costs, weak metadata practices, and growing dependence on a few dominant platforms, risking homogenisation. Performing arts struggle with limited resources and low public awareness of digital offers. These gaps are reinforced by structural inequalities between large and small institutions, regions, and urban–rural contexts, leaving many smaller players underrepresented online.

At the same time, new opportunities are emerging. AI, 3D digitisation, VR/AR, and linked open data can expand access to cultural heritage. Visual arts are being reshaped by virtual fairs, recommendation tools, and new digital marketplaces. Performing arts can use livestreaming and data-driven audience development to reach wider and international audiences.

Despite sector differences, three common lessons stand out: **digitisation and high-quality metadata are essential**, platform algorithms strongly influence visibility, and improving skills, resources, and collaboration—especially for smaller actors—is key to ensuring Europe's cultural diversity remains visible online.

Recommendations

The study proposes a coordinated set of measures to strengthen the discoverability of diverse European cultural content online. The recommendations are structured around **six strategic action areas**, reflecting the challenges and opportunities identified across cultural sectors, and targeted at different categories of stakeholders (e.g. actors in cultural sectors or policymakers at European and/or national level).

1. Foster collaboration and governance for fair discoverability

Improving discoverability requires structured cooperation among platforms, creators, cultural organisations, policymakers, and researchers. The study recommends establishing an EU multi-stakeholder forum, integrating discoverability into EU and national cultural strategies, and promoting cross-sector partnerships to address issues such as transparency, metadata, and data access.

2. Enhance data collaboration and knowledge for better discoverability

Significant data gaps undermine the ability to assess and monitor the visibility of European works. Key actions include strengthening cultural data collection through the forthcoming EU Cultural Data Hub, developing consistent definitions of “European works,” improving metadata standards, and undertaking regular consumer surveys on cultural consumption and discovery.

3. Build digital capacity and tools for creators and cultural organisations

Many creators and smaller cultural organisations lack the digital skills and resources needed to optimise their visibility online. The recommendations call for training programmes, peer-learning networks, and practical tools (including AI-assisted metadata solutions) to help cultural actors promote their work more effectively in digital environments.

4. Audience-focused measures

Audience behaviour, digital skills, and linguistic needs are central to discoverability outcomes. The study proposes strengthening digital and AI literacy, running awareness campaigns on European cultural diversity, engaging young audiences, improving access for linguistic minorities, and supporting digital inclusion for older users.

5. Accelerating research and innovation for discoverability

Ongoing research and experimentation are essential as platforms evolve and AI reshapes content ecosystems. Recommended actions include supporting R&I initiatives on fair and diverse recommendation systems, studying the impact of AI-generated content, and developing tools to improve transparency and auditability of algorithms.

6. Bolstering European content supply: funding, curation, prominence and transparency

Ensuring that European diversity is visible online also requires strengthening the supply side. The study recommends expanding funding for translation and localisation, supporting curated cultural showcases, exploring prominence mechanisms for European works, increasing algorithmic transparency for creators and users, and ensuring authenticity in an era of AI-generated content.

1. Introduction

1.1. Background and context

Discoverability and its importance for cultural and linguistic diversity

In an increasingly digitalised world, **the concept of discoverability has become central to ensuring that diverse European cultural content remains accessible and visible to audiences**. Discoverability refers not only to content being available online but also to its ability to reach and engage users, including those who may not be actively searching for it. This is particularly important for fostering European cultural and linguistic diversity, as the presence of diverse cultural expressions online does not automatically guarantee their exposure.

With the rise of online platforms and algorithm-driven content curation, **the ways in which cultural content is surfaced and recommended have changed dramatically**. While digitalisation and platformisation have expanded access to content, they have also introduced new challenges related to visibility, fairness, and competition. **Algorithms and curation strategies play an increasingly decisive role** in shaping what users see, influencing exposure to certain types of content while potentially disadvantaging others. These developments have raised concerns about filter bubbles, self-referential recommendations, and a concentration of visibility around mainstream or commercially driven content, which could undermine the diversity of cultural expressions online.

Why discoverability matters for cultural sectors in Europe

Europe's cultural and creative sectors operate in a rapidly evolving landscape shaped by **digitalisation, platformisation, and global competition**. The transition from traditional media to digital platforms has altered how cultural content is created, distributed, and consumed. While these changes have provided opportunities for smaller organisations, content creators and independent artists to reach global audiences, they have also introduced new challenges, particularly regarding competition with dominant platforms, control over data, and algorithmic gatekeeping.

Regulators and stakeholders across Europe have increasingly recognised that **ensuring the discoverability of diverse cultural content is essential for cultural sustainability, freedom of expression, and media pluralism**. Specific measures such as those enshrined in the Audiovisual Media Services Directive (AVMSD) reflect efforts to promote European cultural content. However, other less regulated cultural sectors—such as music and books—also face discoverability challenges.

Stakeholder concerns and sector-specific challenges

The issue of discoverability has become a priority concern for stakeholders across cultural and creative sectors, from independent creators to policymakers and cultural institutions. While some platforms provide opportunities for creators

to showcase their work, many stakeholders argue that algorithm-driven prioritisation and lack of transparency in content ranking hinder the exposure of diverse and local cultural content. Key concerns raised by stakeholders include:

- **Fair access to audiences**: Smaller or independent creators struggle to gain visibility against large, well-funded entities that can invest in advertising and data-driven promotion.
- **Algorithmic biases:** Automated recommendation systems often favour content with higher engagement, reinforcing popularity-driven loops that may disadvantage niche or underrepresented content.
- **Diverse user needs:** Discoverability strategies must consider linguistic diversity, accessibility for people with disabilities, and affordability issues to ensure inclusive access to cultural content.
- **Sector-specific differences:** Sector-specific differences are significant: discoverability operates differently across sectors, not only in terms of how exposure is shaped but also through the variety of discovery channels, linguistic factors, and repertoire characteristics.

Given these challenges, policymakers, researchers, and industry players are actively exploring strategies to enhance the discoverability of diverse European cultural content online. This study aims to provide an in-depth understanding of the current landscape, identify key barriers and enablers, and offer evidence-based recommendations for improving the discoverability of European cultural content across cultural and creative sectors.

1.2. Objectives and scope

Objectives

This study provides an **analysis of the discoverability of diverse European cultural content online**, with a particular focus on the **music and book sectors**. Conducted in the framework of the 2023–2026 EU Work Plan for Culture, the study aims to inform potential avenues for action at various levels—EU, national, and stakeholder—to enhance exposure to diverse European cultural content online. The study's specific objectives include:

- Understanding the **needs and specific characteristics** of different cultural and creative sectors regarding the discoverability of diverse cultural content online, including key enablers and obstacles.
- Mapping **existing policies and initiatives across EU Member States and at various governance levels**, including regulatory frameworks, support measures, as well as public and private initiatives.
- Identifying **patterns and trends in content curation and algorithmic recommendations** that affect exposure to cultural content.

- Assessing the im**pact of these practices on cultural and linguistic diversity**.
- Investigating the **current state of algorithm design and its implications** for the discoverability of diverse cultural content.
- Exploring **potential policy or regulatory measures** and providing **evidence-based recommendations** to enhance the discoverability of diverse European cultural content online.

Geographic and sectoral scope

The study covers **all EU Member States**, leveraging a broad network of cultural and creative sector stakeholders, who have been consulted through a range of methods (including interviews, focus groups, surveys and workshops). Where relevant, it also examines policy approaches and initiatives from selected non-EU countries.

Recognising that discoverability is a critical issue across multiple cultural and creative sectors, the study covers **music, books and publishing, visual arts, performing arts, and cultural heritage**. A more in-depth examination is conducted specifically for the music and book sectors. The audiovisual sector is not within the scope of the study.

1.3. Methodology

Desk research

Extensive desk research compiled existing knowledge on discoverability and its relationship with cultural and linguistic diversity online. It identified key factors, challenges, opportunities, and relevant policy measures across cultural and creative sectors. The review covered multiple domains—legal, socio-technical, and economic—and informed a sectoral analysis of music, books, cultural heritage, visual arts, and performing arts. It also mapped methodologies for assessing discoverability, exposure diversity, and prominence, and examined how curation and algorithmic recommendations shape visibility. The findings from the desk research guided subsequent stakeholder interviews and case studies.

Stakeholder consultation

A central element of the study's methodology was the active involvement of relevant stakeholders. Consultations were designed to ensure that the perspectives of sectors and industry representatives, platforms, policymakers, creators, and experts were systematically integrated into the research process. By combining different formats—such as engagement through a Stakeholder Community, targeted interviews, thematic focus groups and a workshop—the project team was able to capture a wide range of views on the challenges and opportunities linked to the discoverability of European cultural content.

This section outlines the main consultation activities and their role in informing the study's findings. It explains how stakeholders contributed at different stages, both by validating research insights and by offering sector-specific expertise. Further information on this approach is provided in Annex 6.

Stakeholder Community

A Stakeholder Community was established to ensure broad representation across cultural and creative sectors. It supported consultation, co-creation, and awareness-raising throughout the project. Members participated in workshops, interviews, and surveys, providing insights into discoverability challenges and helping identify additional stakeholders. Their input was assessed against project objectives and Commission requirements, ensuring alignment while maintaining the study's independence.

Interviews

In-depth interviews were conducted to gather sector-specific insights on discoverability challenges, opportunities, and policy measures. Participants included representatives from cultural sectors, policy makers, digital platforms, academics, and professionals working on cultural diversity initiatives. Interviewees were identified through desk research and expert recommendations, using a snowball approach to expand outreach. Members of the Stakeholder Community also contributed through interviews and written questionnaires, ensuring diverse and practical perspectives.

Focus groups and workshops

Two online focus groups were held to examine how diversity is approached and impacts discoverability in the music and book sectors. Each two-hour session included a presentation of key findings and guided discussions with a diverse group of artists, industry professionals, representative bodies, and technology experts. The focus groups validated earlier research, identified sector-specific challenges, highlighted best practices, and explored the role of AI in shaping content visibility. Their insights informed the study's conclusions and policy recommendations.

Additionally, a stakeholder workshop took place in Brussels (and online) in October 2025 to discuss the first outcomes of the study and develop possible recommendations. This session brought together a variety of stakeholders in a hybrid format.

Consumer survey

A consumer survey was conducted to assess preferences and satisfaction levels regarding the discoverability of diverse cultural content on online services. The survey also aimed to provide feedback on curated lists and algorithmic recommendations in terms of diversity and to capture insights from content consumers. The survey covered the entire European Union.

The survey questionnaire was developed by the project team and included routing and feedback mechanisms to enhance respondent experience. The questionnaire was translated into multiple languages, including French, German, Spanish, Portuguese, Italian, Polish, Greek, and Romanian.

Further information on the survey methodology can be found in Annex 7, along with the questionnaire in Annex 8.

Data analysis

In this report, the music and book sectors are additionally studied through a quantitative analysis relying on a variety of sources on consumption, recommendations and metadata. The goal of the quantitative analysis is to understand the impact of recommendations and curation practices on the discoverability of European content across the EU (and select non-EU) countries – to the extent that it is possible with existing data limitations. Importantly, there is no single data source on any of the studied issues, and as such a selection of sources had to be made for an as meaningful analysis as possible. To this end, for all contexts (e.g. consumption, metadata, curation practices, etc.), the sources selected have been based on the following criteria:

- **Accessibility**: the chosen sources needed to be accessible via automated data collection tools (scraping or APIs) or from the services themselves. This was a prerequisite for conducting the data analysis and was particularly important in choosing the focus for the analyses of recommendation systems.
- **Interoperability:** the chosen sources needed to allow for connection with other data sources (primarily with metadata). This typically meant access to identifiers that could be used for precise matching across data sources (such as ISRC for music or ISBN for book releases). In some cases, specific platforms were omitted because there was no clear way of matching the data with metadata necessary for fulfilling the task objectives.
- **Country coverage:** the chosen sources needed to cover as many EU countries as possible and also to allow distinguishing between data for different countries. This meant focusing on services or (play)lists, etc. that offered country-specific information and not only aggregated global values. As the primary goal is to understand the discoverability of EU titles, especially within the EU, the analyses needed to be able to take country-level perspective, not dominated by non-EU countries.
- **Consistency:** the chosen sources needed to provide consistent information across time and regions, allowing for meaningful comparisons and drawing a larger picture. For instance, when selecting editorial playlists, the analysis was focused on ones that had national versions constructed within the same general approach. While a myriad of other playlists exist, they are often global (and not national in nature) or can be

unique to specific countries – prohibiting any meaningful country comparisons and thus drawing any universal conclusions.

- **Representativeness clarity:** the chosen sources needed to be clear on what the data represents, at least in general terms. This is necessary to allow proper descriptions of the findings and to understand their generalisability. For instance, while top charts or bestseller lists are limited to just the most popular titles, it is clear that they represent the overall choices of particular platform's users. On the other hand, some of the available data might be subject to self-selection issues whereas the representativeness of the studied population is unclear.
- **Importance and chance of new insights:** where choices needed to be made, the analysis focused on sources that represented a larger market share or had larger audiences, more followers, etc. This is to aid the goal of understanding the role of algorithms and curation practices at as large a scale as possible. At the same time, there are numerous services and platforms, and studying all of them was beyond the scope of this project. Focus was therefore given to the most prominent of them. Moreover, when deciding whether to cover another service or discovery channel or data source, consideration was also given to whether it had the potential to provide any additional insights and conclusions beyond what was already covered.

The two analysed sectors differed considerably in market structure and – consequently – in terms of availability of sources fulfilling the criteria above. To support the data analysis, **a comprehensive review of both academic and non-academic sources was conducted**, with a focus on the used data sources, derived indices and operationalisation of measures. Discussions with representatives of other relevant projects and services who conducted analyses on topics adjacent to the ones in this report were also carried out. These efforts informed the understanding of data availability and the typically used measures and definitions. Based on this, various stakeholders were approached regarding data access and definitions were developed. The details on the review and the subsequent study design can be found in Annex 3, along with the justification of the choices and details on operationalisation of measures such as the country of origin of titles and others (with a more detailed and technological methodological annex also included at the end of this report):

Music sector

The quantitative analysis of the music sector was designed to examine patterns in music consumption, curation, and algorithmic recommendations across music streaming platforms, with particular attention to the discoverability of diverse European content. Additional details can be found in Annex 4. Specifically, the project team:

- Analysed music consumption data from top charts from four prominent music streaming services to identify trends in the visibility of national, EU, and non-EU content. Diversity in relation to artists' gender, career stages and songs' genres was also analysed.
- Examined curatorial practices through editorial playlists to assess the role of human selection in promoting diverse content, also with respect to song origin, artists gender, career stage and genres.
- Studied algorithmic recommendations using a music streaming service API to explore how recommendations might reinforce or challenge content diversity across EU countries.
- Examined alternative discovery modes, such as social media platforms with short-form videos or music recognition tool charts, to understand emerging, socially-driven pathways for music exposure and their impact on discoverability.

Book sector

The quantitative analysis of the book sector was tailored to its unique characteristics, namely the fragmentation across different countries and platforms. The analyses cover patterns in consumption, user and editorial curation, and algorithmic recommendations across countries, while considering: a global online store, two audiobook and e-book services, and four social cataloguing platforms (large international, smaller international one, and two locally popular ones). A more detailed methodology can be found in Annex 5. Specifically, the analysis covers:

- Bestseller and popularity lists from a variety of global and local platforms and services (print, e-book and audiobook sellers, as well as social cataloguing platforms), including historic data and trends, and the related presence of local, EU and non-EU titles, as well as the gender of the represented authors.
- Editorial picks and interviews from three social book cataloguing platforms (an international one and two national ones), and the way they represent diverse authors and regions.
- User-curation practices at an international social cataloguing platform, consisting of lists created by the readers themselves.
- Algorithmic recommendations present as book recommendations in specific platforms and services, dependent on current browsing in the services.

Beyond that, topics of metadata availability are discussed and the problematics involved in the identification of book origins and author nationalities.

Scientific Board

The study team mobilised a Scientific Expert Board that provided a peer review and validation function for the study. The experts cover a range of expertise, including AI and recommender systems, cultural policy making, cultural economics, and digital/internet law.

1.4. Structure of the report

This report is organised into four main chapters, complemented by a series of annexes that provide detailed methodological notes and supporting materials.

- **Chapter 1 – Introduction** outlines the background and context of the study, setting out why discoverability matters for cultural and linguistic diversity in Europe. It explains the objectives, scope, and methodology of the study, including the role of desk research, stakeholder consultation, data analysis, and the Scientific Board. This chapter also presents the structure of the report.
- **Chapter 2 – Discoverability and diversity of European content online** provides the conceptual and policy foundation for the study. It examines how digitalisation and platformisation impact cultural and linguistic diversity, proposes a conceptual framework for analysing discoverability and discovery pathways, and discusses the definition of "European works."
- **Chapter 3 – Policy landscape** situates the discoverability of diverse cultural content online within the broader international, EU and national policy context, linking it to the longstanding objective of cultural and linguistic diversity. It reviews how recent cultural and digital policy developments—spanning cultural rights and accessibility, platform transparency and recommendation practices, prominence, and the growing relevance of generative AI—are increasingly shaping policy responses, and maps relevant instruments and initiatives at UN/UNESCO level, across the EU framework, and in national approaches within Member States and selected third countries.
- **Chapter 4 – Sector-specific analysis: Music sector** presents an in-depth examination of discoverability challenges and opportunities in the music sector, structured around consumption patterns, curation practices, algorithmic recommendation systems, and key challenges and opportunities shaping visibility and access.
- **Chapter 5 – Sector-specific analysis: Book sector** provides a detailed assessment of discoverability in the book sector, focusing on reading and consumption patterns, the role of curation and recommendation mechanisms, market structures, and the main barriers and opportunities affecting the circulation of European works.

- **Chapter 6 – Discoverability in other cultural and creative sectors** examines discoverability across cultural heritage, visual arts, and performing arts, offering a broader cross-sectoral perspective and highlighting both common dynamics and sector-specific characteristics.
- **Chapter 7 – Conclusions and recommendations** synthesises the findings and provides policy recommendations aimed at enhancing the discoverability of diverse European content in the digital environment. These recommendations target both EU-level policy frameworks and sector-specific practices.

In addition to the main chapters, the report includes a series of **Annexes** that document the methodological underpinnings and supplementary analyses. These cover the conceptual framework in more detail, quantitative approaches, sector-specific methodological appendices, and agenda of the stakeholder consultations. Annexes also present the full consumer survey methodology and questionnaire. Together, these annexes provide transparency and allow for replication and further research. The bulk of the research process was carried out between April 2024 and December 2025.

2. Discoverability and diversity of European cultural content online

Key findings:

- Digitalisation, platformisation and media convergence have heightened the importance of cultural diversity and discoverability in the online environment, while blurring traditional sectoral boundaries. Global platforms now act as gatekeepers in cultural discovery, exerting significant influence over visibility, access, and consumption patterns. In a context of growing hyperabundance of content availability alone does not ensure diverse consumption
- Exposure diversity – driven by factors such as prioritisation, prominence, and ranking – plays a central role in determining users' opportunities to be exposed to and engage with diverse content, facilitating this content's discoverability.
- Discoverability is increasingly recognised as a policy objective, referring to the likelihood that content will be noticed and interacted with.
- Algorithmic systems, curation practices, and attention-economy dynamics act as gatekeepers, shaping which content becomes visible and prioritised – often amplifying some content while neglecting others – and thereby influencing patterns of discovery.
- The study develops a conceptual framework that treats discoverability as a "discovery ecosystem" shaped by both active and passive discovery pathways, and by the combined effects of platform prioritisation, prominence, exposure and curation (including search, ranking and recommendation), structured across six interlinked components—Engagements, Presentations, Facilitators, Interpreters, Experiences and Ripples—to support more coherent analysis and future policy-oriented evaluation.
- Defining cultural and linguistic diversity is a necessary step in assessing how these dimensions relate to discoverability in digital environments. Agreed-upon definitions of what comprises a 'European work', are necessary foundational terms for advancing policymaking.

2.1. The impact of digitalisation and platformisation on cultural and linguistic diversity

Cultural and linguistic diversity are multifaceted concepts. In this report, the focus lies on the impact of digital technologies. With the fast-paced development and adoption of digital technologies in the distribution and consumption of cultural content, assessing cultural diversity in the online environment has become even more important.[1] Whereas the issue of defining cultural diversity in the context of platformisation has been discussed,[2] the question of how normative goals such as cultural diversity and discoverability can be translated into tangible measures requires further consideration.[3]

In the EU and across the Member States, cultural and linguistic diversity is supported through measures that increase the availability of different types of content and sources, with the aim of promoting variety. **Diversity has been primarily analysed from the point of view of production and distribution and their impact on consumption**. Therefore, current diversity policies remain rooted in the scarcity logic: given the limited availability of works in certain content categories, it is essential to support their production and distribution; for example, in France, the introduction of quotas for French-language songs on French radio since 1996[4] to apply pressure on the bigger anglophile radio stations to distribute French musical works or the introduction in January 2024 of financial obligations on music streaming services to support music production. However, ensuring that a diversity of content is available does not automatically guarantee diversity in consumption.

[1] Ranaivoson, H., and Domazetovikj, N., 'Platforms and exposure diversity: Towards a framework to assess policies to promote exposure diversity' (2023), Media and Communication, 11(2): 379-91. https://doi.org/10.17645/mac.v11i2.6401

[2] Ranaivoson, H., 'Online platforms and cultural diversity in the audiovisual sectors: a combined look at concentration and algorithms' (2019), in Audiovisual Industries and Diversity (Routledge), pp. 100-118.; Erik Brynjolfsson, Yu (Jeffrey) Hu, and Michael D. Smith, 'Research Commentary—Long Tails vs. Superstars: The Effect of Information Technology on Product Variety and Sales Concentration Patterns' (2010), Information Systems Research, 21(4): 736-47, available at: https://doi.org/10.1287/isre.1100.0325; Erik Brynjolfsson, Yu Hu, and Michael D. Smith, 'Consumer surplus in the digital economy: Estimating the value of increased product variety at online booksellers' (2003), Management Science, 49(11): 1580-96, available at: http://pubsonline.informs.org/doi/abs/10.1287/mnsc.49.11.1580.20580; Luis Aguiar, Joel Waldfogel, and Sarah Waldfogel, 'Playlisting Favorites: Measuring Platform Bias in the Music Industry' (2021), International Journal of Industrial Organization, 78: 102765, available at: https://doi.org/10.1016/j.ijindorg.2021.102765

[3] Ranaivoson, H., and Domazetovikj N., 'Platforms and exposure diversity: Towards a framework to assess policies to promote exposure diversity' (2023), Media and Communication, 11(2): 379-91. https://doi.org/10.17645/mac.v11i2.6401

[4] Machill, M., 'Musique as Opposed to Music: Background and Impact of Quotas for French Songs on French Radio' (1996), Journal of Media Economics, 9(3): 21–36, available at: https://doi.org/10.1207/s15327736me0903_2; Hare, G., 'Popular music on French radio and television' (2017), in Popular Music in France from Chanson to Techno (Routledge), pp. 57-76.

Exposure diversity, defined in the literature as the extent to which audiences are exposed to, discover, and engage with diverse content,[5][6] looks at the audience dimension of cultural diversity. Traditionally, discussions about diversity focused on where information comes from and what it contains, but with digitalisation it has become increasingly important to also consider how widely and easily that content is exposed to audiences.[7] It is actually necessary to consider the specificities of exposure diversity and the role played by all ways of modifying exposure[8] and discovery. It becomes important to consider, beyond what is available, what actually gets recommended and displayed to users,[9] all the more so in a context of consumption fragmentation.[10] As detailed in later sections of this report, **the visibility allocated to various content has significant impact on the way this content is interpreted, categorised, and later recommended by algorithmic systems**, causing some items to be unnaturally popular and others entirely neglected. A key element of a user's ability to discover various content items is their exposure to them. Thus, exposure and discoverability are intrinsically intertwined.

In addition, **media convergence,** which is the ability to deliver different media channels and cultural content via one digital platform,[11] blurs the boundaries between the cultural and creative sectors (CCS) and leads to a greater level of

[5] Napoli, P., 'Exposure diversity reconsidered' (2011), Journal of Information Policy, 1: 246-59; Philip M. Napoli, 'Rethinking Program Diversity Assessment: An Audience-Centered Approach' (1997), Journal of Media Economics, 10(4): 59-74, available at: https://doi.org/10.1207/s15327736me1004_4. This definition is based on Napoli (2011)'s canonical definition. Napoli refers only to consumption but to adapt it to the impact of digital technology and in particular of recommender systems and curation strategies in the frame of this study, we extend it slightly. This to reflect the various aspects that "consumption" can take, from passive (e.g., getting a recommendation that one sees but will not click on) to active (e.g., searching for more information about a creator to find other works) modes of consumption.

[6] Ranaivoson, H., Errando, A., & Afilipoaie, A. (2024). Beyond the Algorithm: Measuring Diversity in Media Recommender Systems [blog post]. Available at: https://www.algepi.com/beyond-the-algorithm-measuring-diversity-in-media-recommender-systems/. An in-depth discussion on the definition and assessment of cultural diversity is outside of the scope of this report but we suggest the reader to consult the blog post published as part of the project Understanding ALGorithmic gatekeepers to promote EPIstemic welfare (ALGEPI), a research project funded by the Research Foundation – Flanders (FWO) under grant number G098223N.

[7] Source diversity can be defined as the diversity of sources (outlets, creators, etc.) from which the content is available. Napoli, P., Rethinking Program Diversity Assessment: An -Centered Approach, Journal of Media Economics 10, no 4 (1 octobre 1997): 59-74, available at: https://doi.org/10.1207/s15327736me1004_4

[8] Ranaivoson, H., and Domazetovikj N., 'Platforms and exposure diversity: Towards a framework to assess policies to promote exposure diversity' (2023), Media and Communication, 11(2): 379-91. https://doi.org/10.17645/mac.v11i2.6401

[9] Ranaivoson, H., 'Cultural Diversity' (2020), in Ruth Towse and Trilce Navarrete Hernández (eds.), Handbook of Cultural Economics, Third Edition (Edward Elgar Publishing), pp. 183-91, available at: https://doi.org/10.4337/9781788975803.00026

[10] Lambrecht, I., Mazzoli, E. M., Ranaivoson, H., Domazetovikj, N., Tambini, D., and Valcke, P., 'An assessment of the effectiveness of measures related to prominence and the findability/discoverability of general interest content and services' (2022), in Directorate-General for Communications Networks, Content and Technology (ed.), Study on media plurality and diversity online: Final Report (Publications Office of the European Union), pp. 95–157, available at: https://op.europa.eu/en/publication-detail/-/publication/475bacb6-34a2-11ed-8b77-01aa75ed71a1/language-en/format-PDF/source-266738523

[11] Simon McPhillips and Omar Merlo, Media convergence and the evolving media business model: An overview and strategic opportunities, *The Marketing Review* 8, no 3 (2008): 237-53. With digitalisation, no matter the type of signal, any content can be transformed into undifferentiated bits of data that converge onto the same platform.

competition between companies that were not previously competitors. This applies to CCS as companies extend their set of activities. For example, museums create video content to advertise their exhibitions, the video content which may become cultural expressions in themselves. Music and videoclips for example serve as intangible cultural artifacts for posterity by preserving cultural identity, transmitting heritage and providing for historical documentation. For singers and other performers for that matter, media convergence has changed the way they create, distribute and maintain their image, turning many singers and performers into multimedia content creators; they use various channels to reach their audiences across different media formats and explore new opportunities for visibility, monetisation and collaboration. Beyond, convergence expands the definition of the traditional CCS.[12] Most renowned online platforms originate from outside of the CCS, such as Amazon's e-commerce platform Amazon Marketplace or Google's online platform of high-resolution images and video of artworks and cultural artifacts from partner cultural organisations operated called Google Arts & Culture. This process of advent and dominance of online platforms covering more than one sector is labelled as **platformisation,**[13] with the result that all sectors (also beyond CCS) become intertwined. The competitive setting has thus changed, with some actors being active in several CCS. As consumption also converges on a limited number of types of multifunctional devices (such as the smartphone), it makes it easier for users to access, consume and switch from one content to another via the same device (e.g., from listening to music on a music streaming service such as Spotify, to watching a video on YouTube, to then using a social media service to access the news).

Alongside diversity, policy concepts and normative notions have been emerging in the last years/decades. They are briefly defined here but further addressed in the rest of this report. The main one, which is the core concept of this report, is the concept and policy objective of **discoverability**, which has become a topic of discussion and even a priority – to varying degrees – in the international (UNESCO, G7, G20, la Francophonie/OIF), European (EU) , and national policy agendas. This recent concept originated and has developed since 2016 in Canada/Québec. There, it relates to the ability of content to stand out amongst a vast array of other content and to be suggested or recommended to a person who was not aware of its existence or was not specifically looking for it.[14] In other words, discoverability can be defined as **the likelihood that an item will be interacted with.**[15]

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[12] Krätke, S., Global media cities in a world-wide urban network, *European Planning Studies* 11, no 6 (2003): 605-28.

[13] Mansell, R., Platforms of power, *Intermedia* 43, no 1 (2015): 20-24.

[14] *Mission franco-québécoise sur la découvrabilité en ligne des contenus culturels francophones. Stratégie commune* (Québec: Ministère de la Culture et des Communications, 2020).

[15] This does not only apply to an individual item (song, book, etc.) or items produced by one creator (all books written by an author, etc.) but can also apply to a type of items, for example, the likelihood that European books are read, that European pieces of music are listened to.

A necessary but insufficient condition for discoverability is **availability**: if a work or a group of works is not available, or even if no information is available about this work and its creators, there is no room for discoverability. As a precondition for discoverability, content availability on platforms and services, including its accompanying metadata, feed into the algorithms which play a decisive role in this discoverability process; as is presented in the following paragraphs. Although discussed more in-depth in the sectoral analysis, it is important to already highlight that **the degree of content availability is dependent on sectoral specificities**. For example, in the music sector, music streaming services have significantly transformed the landscape of music availability with music catalogues comprising of tens of millions of tracks. Due to the way music streaming platforms license entire repertoires from major record labels and independent record labels – in order to provide consumers with a comprehensive offering of the world's music content and stay competitive – their catalogues significantly overlap; although some differences in catalogue availability exist between music streaming services, with some catering specifically to independent artists, emerging musician and niche music communities (e.g. SoundCloud and Bandcamp). In the book sector, audiobook and digital bookstores have expanded the availability of European literature, but the availability is dependent on, for example, the dominant language of the book industry, linguistic complexity in the case of multilingual markets and the accessibility of translations. Different than the music and book sectors, content availability in the field of cultural heritage is most and foremost dependent on the success of preservation and efforts to digitise cultural heritage (e.g., museum collections). In the visual arts sector - except for digital arts – the encounter between users and artworks takes place mainly in the physical world. The visual arts, together with the performing arts sectors, encompass a broad spectrum of artistic disciplines, with content availability differing per discipline and dependent on various factors such as search engine optimisation (SEO), online promotion strategies, the direct involvement of artists in advertising their work, the (under)use of metadata, digitisation costs and public policy to name a few. Ultimately, availability is matter of supply, following the logic that one cannot discover what is not there.

The notion of discovery is often discussed in relation to the rise of the **attention economy,** where the perceived scarcity of user attention[16] competes with the magnitude of content available to them. To alleviate this tension, many online platforms have invested heavily in designing algorithmic and human curatorial systems that can provide content recommendations to their user bases. In time, this has manifested in a "complex system where search, discovery, and ranking functions are powerful determinants of access to content".[17] Given this environment, **a discussion of discovery requires an understanding of how**

[16] Kazi, N., 'The identity crisis of libraries in the attention economy' (2012), Library Philosophy and Practice, pp. 1–8.

[17] Mazzoli, E. M., 'Online content governance: Towards a framework for analysis for prominence and discoverability' (2020), Journal of Digital Media & Policy, 11(3): 301–319.

these different actors play gatekeeping roles in the circulation of content online, enact control over a user's journey towards content, and influence value - economically, culturally or socially.[18] Within the broader academic community, this conversation has often been centred around the concepts of prioritisation, prominence, and exposure diversity and how they intersect to form the experience of discovery. Together, these forces create a dynamic ecosystem in which users engage with discovery.

Prioritisation focuses on understanding the curatorial systems that dictate which content users will be engaging with. This will be addressed in later sections of this study, the specific objectives of complex technological ecosystems which are used to govern the curation practices of various platforms serving cultural content have significant downstream effects on which content is consumed, and which content is neglected. **Prominence** is an outcome of prioritisation, concerned with the location of specific content that manifests itself in the allocation of user's attention.[19] One of the outcomes of making content more prominent is that it increases its chances of being discovered. In later sections information is presented on how interfaces, and more generally *Presentations*, can motivate or obscure opportunities for discovery.

2.2. A conceptual framework to analyse discoverability and discovery pathways

In the context of this study, a **framework has been developed through which to interpret the nascent notion of discoverability in relation to cultural content in online spaces**. Due to its multifaceted nature, discoverability is a concept that has been addressed in a variety of mediums including market reports, policy briefs, legal frameworks, user studies, economics, ethnographies, algorithm designs, and many more. **The purpose of this framework is to present a structure for unifying these discussions and aligning their findings such that they may better serve future policy initiatives**.

Building on the definition of discoverability as the likelihood that an item will be interacted with, **the framework interprets the concept of discoverability as a whole**, addressing both the act of discovery and its surrounding variables as individual elements in a large ecosystem that controls discoverability. Broadly speaking, passive discovery occurs when users are shown content that they were not explicitly seeking out. Meanwhile active discovery occurs when users seek out content that they intend to explore. The focus of this work encompasses both of these modalities, motivated by the need for policy outcomes that purposefully participate in the ecosystem surrounding the content which is ultimately discovered

[18] Ibid.

[19] Mazzoli, E. M., 'Online content governance: Towards a framework for analysis for prominence and discoverability' (2020), Journal of Digital Media & Policy, 11(3): 301–319.

Crucially, this work focuses on the **process of discovery as it is enacted in and through online spaces**. This focus is motivated by the ultimate goal of this study and its relation to broader policy movements which are directed towards the preservation and promotion of cultural diversity. As mentioned in earlier sections of this text, the topic of discoverability is deeply embroiled with notions of content curation and moderation that happens both in passive and active forms that regulate the flow of attention in online spaces. As Gillespie[20] explains:

"*to produce and sustain an appealing platform requires moderation of some form* (…) *content moderation is part of how platforms shape user participation into a deliverable experience. Platforms moderate (through removal, filtering, and suspension); they recommend (through news feeds, trending lists, and personalised suggestions); and they curate (through featured content and front-page offerings). Platforms use these three levels together to actively and dynamically tune the participation of users in order to generate the 'right' feed for each user, the 'right' social exchanges, and the 'right' kind of community. 'Right' in these contexts may mean ethical, legal, and healthy, but it also means whatever will promote engagement, increase ad revenue, and facilitate data collection."*

Please note that, as clarified in later sections of this text, the choice of the word 'platform' and 'moderation' are purposefully abstract to encompass not just recommendation systems themselves but also the search, ranking, and conversational functions that often accompany them.

Together, these fragments contribute to the lifecycle of a discovery experience, shaping the context and method in which it will occur. Prioritisation is the engine which drives discoverability, prominence shapes it, exposure instigates and perpetuates discovery, and diversity is one of our main tools for interpreting it. The goal of this framework is to present a succinct understanding of the flows between these forces and the various vectors contributing to the discovery experience of users.

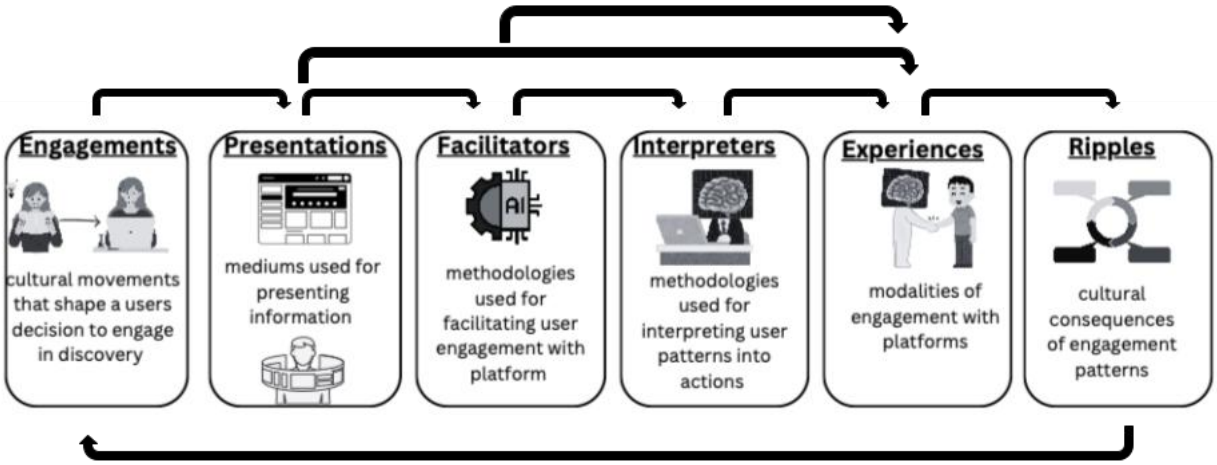
While there has been significant scholarship on the topics described above, there has been relatively little work that is explicitly related to discovery, and most is grounded in the music sector. In the field of media studies, McKelvey and Hunt present a theoretical framework containing three distinct components: (1) *surrounds*, or interfaces through which users are presented with content, (2) *vectors*, or mechanisms that coordinate which content is presented, and (3) *experiences.*[21] However, their work is limited in that it does not account for the broader cultural consequences of the choices made by recommendation systems and the engineers who construct them. In his book, *Computing Taste: Algorithms*

[20] Gillespie, T., 'Platforms Are Not Intermediaries' (2018), Georgetown Law and Technology Review, 2(2): 198.

[21] McKelvey, F., and Hunt, R., 'Discoverability: Toward a Definition of Content Discovery Through Platforms' (2019), Social Media + Society, 5(1): 2056305118819188, available at: https://doi.org/10.1177/2056305118819188

and the Makers of Music Recommendation, Nick Seaver presents an ethnographic study of music engineers' perspectives on music discovery but stops short of offering a cohesive approach for policy implications and evaluation.[22] Meanwhile, in the policy domain, Born et al. present six important topics on the influence of artificial intelligence on the curation of culture.[23] Unlike this work, which presents a complete framework through which to interpret the various components of cultural curation, Born et al. focus more heavily on motivating policy implications and contextualising the role of algorithms in the curatorial process.[24] In the technical literature surrounding discovery, Garcia-Gathright et al. perform an empirical user study to understand the different kinds of user groups on Spotify and their expectations for discovery and curatorial practices.[25] The empirical aspects of their work provide quantitative evidence for the research that will be explored in later sections of this work, addressed specifically by one of the components of the framework. Finally, within legal literature, Hanania et al. present discoverability as a larger entity that is concerned with two forms of diversity: diversity in supply, related to the availability of content, and diversity of consumption, related to the access users have towards various forms of content.[26]

Figure 1 Visualisation of the conceptual framework



Source: Consortium elaboration

[22] Seaver, N., Algorithms and the Makers of Music Recommendation (2022), Chicago: University of Chicago Press, available at: https://doi.org/10.7208/chicago/9780226822969

[23] Born, G., Morris, J., Diaz, F., and Anderson, A., 'Artificial Intelligence, Music Recommendation, and the Curation of Culture' (2021).

[24] Born, G., Morris, J., Diaz, F., and Anderson, A., 'Artificial Intelligence, Music Recommendation, and the Curation of Culture' (2021).

[25] Garcia-Gathright, J., St. Thomas, B., Hosey, C., Nazari, Z., and Diaz, F., 'Understanding and Evaluating User Satisfaction with Music Discovery' (2018), in The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval (SIGIR '18), pp. 55–64, Association for Computing Machinery, New York, available at: https://doi.org/10.1145/3209978.3210049

[26] Hanania, L., 'Streaming Platforms and Profiling – Risks and Opportunities for the Discoverability of Diversified Cultural Content' (2023).

Crucially, the goal of this work is to **encompass *all* of the variables** mentioned in these canonical texts. Thus, this study presents six components which form what we term the ***discovery ecosystem***. Together, these six sections are used to discuss the various perspectives through which discovery and discoverability have been addressed. First, comes *Engagements* (1), an element which encompasses cultural movements that shape user's decisions to engage in discovery. Then, four interrelated elements are presented that are often addressed in the literature in the form of an intertwined, cyclical structure: *Presentations* (2), *Facilitators* (3), *Interpreters* (4), and *Experiences* (5). Together, these elements encompass the technical and socio-technical literature surrounding various forms of human and algorithmic content moderation. Broadly, they discuss the interconnected nature of interfaces, data-gathering practices, curatorial systems, and user experiences. The onus for separating these elements into individual components is motivated by later portions of this text which involve specific policy suggestions related to independent aspects of this interactive structure. Following this, the final component, *Ripples* (6), which addresses the downstream consequences that shape the movements around discovery and position the ecosystem within the broader online space.

Throughout the introduction, an example scenario is used to help readers visualise the role each component plays in the discovery ecosystem. Consider Sam, a user who routinely engages with the discovery process by using her favourite music streaming platform which we will call *Lysten*. Using this example, a brief overview is presented, following a more detailed presentation of each of the individual components of such a process. Further explanation on the various elements can be found in Annex 2.

Engagements (1)

Engagements capture the **cultural, social, and individual factors that shape whether and how users decide to explore new cultural content online**. These include demographics such as socioeconomic status, age, gender, origin, community size, language, and neurodiversity, alongside personal motivations, everyday practices, and digital literacy. For example, research shows that users from more privileged backgrounds are often more open to consuming a wide range of cultural content. Research into music preferences, suggests that age and the associated nostalgia is a strong determinant of music preference, perhaps stronger than some other demographic factors.[27] Studies of Spotify demonstrate how effort levels and personal definitions of a 'successful search' influence discovery practices.[28] When it comes to literature, youngsters (at least in France) seem to have a preference for comic books and manga, following the

[27] Davies, C., Page, B., Driesener, C., Anesbury, Z., Yang, S., & Bruwer, J. (2022). The power of nostalgia: Age and preference for popular music. Marketing Letters, 33(4), 681–692, available at: https://doi.org/10.1007/s11002-022-09626-7

[28] Hosey, C., Vujović, L., St. Thomas, B., Garcia-Gathright, J., & Thom, J. (2019). Just give me what I want: How people use and evaluate music search. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, 1–12, available at: https://doi.org/10.1145/3290605.3300529

impact assessment of the Culture Pass on the intensification and diversification of young people's cultural practices.[29]

To illustrate, consider Sam, a user engaging with the fictional music streaming platform *Lysten*. Her discovery journey is shaped not only by the technology provided by the service but also by her own context: her upbringing, community, and mindset about effort in searching for new music all influence what she finds. In the book sector, Sam's engagement might instead depend on factors such as language proficiency, the availability of translations, access to digital libraries, or the affordability of e-books and audiobooks. For instance, her ability to discover a new author could hinge on whether a translation is available in her native language or whether her local library partners with digital platforms to offer a broader catalogue.

Cultural forms and technology are deeply intertwined, determining what can realistically be discovered. Digitised music and books are generally easier to access than more analogue forms like dance or heritage sites, which require advanced tools such as VR, 3D modelling, or AI to make them discoverable. Here, public policies play a decisive role in shaping what kinds of content are digitised and made available—whether through national heritage projects or EU-wide initiatives such as *Europeana*.

From a policymaking perspective, the Engagements element highlights how user interactions and attention shape discoverability in the digital age. When platform algorithms heavily reward content with high engagement metrics, they can create self-reinforcing popularity loops that sideline niche or underrepresented works. This means cultural content in less dominant languages or genres may struggle to break through purely by organic engagement. Diverse user needs – spanning language preferences, cultural interests, varying levels of digital literacy, and accessibility requirements – further complicate the landscape. Users gravitate toward content that is surfaced to them, so if discovery systems only amplify what is already popular or aligned with majority tastes, minority cultures and local creators face a systemic barrier to engagement. Indeed, smaller independent creators often lack the marketing resources of large entities and find it hard to garner audience engagement amidst hyperabundant content. This structural inequality in who can capture attention calls for policy interventions that ensure engagement metrics do not become a proxy for quality or relevance alone, lest they perpetuate an unequal playing field online. There is a growing recognition that simply making diverse content available is not enough – audiences must actually encounter and interact with it. This has led to calls for transparency and accountability in how platforms weight engagement in their recommendation algorithms.

[29] Ministère de la Culture. 'Les impacts de la part individuelle du pass Culture'. N° 2024-15. (2024), available at: https://www.culture.gouv.fr/espace-documentation/rapports/les-impacts-de-la-part-individuelle-du-pass-culture

Presentations (2)

Presentations refer to **the ways platforms organise and display cultural content to users**, shaping what is seen first and therefore most likely to be discovered. Interface design – from overall layout to the placement of individual items – is never neutral. Decisions about navigation, categorisation, and visibility directly affect whether users encounter mainstream, niche, or diverse cultural works. In EU policy terms, this aligns with the AVMSD, which highlights not only the importance of making European works available but also ensuring their *prominence* through visible placement and design choices.

For example, consider Sam opening her favourite music streaming service, *Lysten*. The homepage layout, playlists, and featured sections guide her attention towards particular songs and artists, making some content highly visible and others effectively invisible. In the book sector, Sam might instead open an online bookstore or a book community app. The presence (or absence) of metadata such as book covers, descriptions, ratings, or translations will influence which titles catch her attention. Poorly designed interfaces or missing metadata can frustrate users and limit discovery, whereas clear navigation, curated lists, and appealing visual presentation can encourage exploration of new authors or genres.

Research confirms that how information is presented—whether through recommendation lists, curated sections, or innovative visualisations—creates a feedback loop between visibility, exposure, and discovery. Placement on prominent lists or front-page displays in online bookstores can drive major increases in consumption. Conversely, reliance on ranked lists or single-column layouts can narrow discovery, limiting user encounters with diverse works.

For policymakers and sectoral stakeholders, this means that improving discoverability requires more than increasing content availability—it also demands attention to how cultural works are displayed. In the current hyper-abundant online environment, the placement of content on a homepage or the ordering of search results can determine whether European works catch audience's eyes or remains virtually invisible. For example, if recommendation carousels and trending lists consistently foreground the same popular titles, less mainstream works (especially those from smaller linguistic communities) may never appear on a user's screen. This makes prominence an important policy concern.

Facilitators (3)

Facilitators are the mechanisms—both algorithmic and human—through which **platforms decide what content is shown to users**. Unlike Presentations, which deal with how content is displayed, Facilitators determine *which* songs, books, or cultural works are surfaced in the first place. These range from automated recommendation systems and search algorithms to curated editorial picks. In today's crowded digital environment, Facilitators are critical: with millions of items

available, they help users navigate choice overload and play a decisive role in shaping cultural discovery.

For example, when Sam uses her music streaming service *Lysten*, her experience is guided by a mix of algorithmic recommendations (e.g., auto-play and "for you" playlists) and curated editorial selections. These systems not only decide which songs appear but also influence how her listening patterns evolve over time. In the book sector, Sam's discovery on book recommendation platforms or an online bookstore may be driven by algorithmic "you may also like" suggestions, bestseller lists shaped by sales data, or human-curated reading lists and reviews. Poor metadata or weak categorisation (e.g., missing cover images, incomplete descriptions, lack of translations) limits the ability of Facilitators to surface diverse titles, reducing opportunities for discovery.

Key research shows that Facilitators operate at multiple levels:

- Algorithmic systems (e.g., search, ranking, recommender engines) that use user behaviour and metadata to push content.
- Human curation (e.g., playlist editors, book reviewers, librarians) that introduces diversity and cultural judgment beyond algorithms.
- Hybrid "algotorial" approaches where human decisions are shaped by algorithmic insights, common in both music streaming and book platforms.

While effective in retaining users, algorithmic Facilitators can also reinforce biases—for example, favouring popular artists or bestselling authors over niche or diverse works. This risks creating "filter bubbles" where users are repeatedly exposed to the same kinds of content. Conversely, purposedly designed Facilitators can intentionally broaden discovery, for example by including lesser-known authors in recommendation lists or diversifying music playlists.

For policymakers and stakeholders, the key point is that Facilitators are not neutral. Their design choices—how metadata is structured, which objectives (accuracy vs. diversity) are prioritised, and how human and algorithmic curation interact—determine whether cultural diversity is amplified or marginalised. Facilitating transparency, diversity objectives, and strong metadata standards in Facilitators allows improving discoverability, areas where policy can play an enabling role by removing barriers and bolstering opportunities. A critical facilitator is the quality of metadata and indexing: if European cultural works are not properly catalogued with rich, multilingual metadata, they simply will not surface in searches or recommendations. Likewise, search engines and platform algorithms act as facilitators – or gatekeepers – of discovery. If their design does not account for Europe's cultural and linguistic diversity, they might favour well-known Anglophone or global content by default.

Interpreters (4)

Interpreters are **the mechanisms through which platforms analyse and make sense of user interactions with cultural content**. They transform actions such as likes, clicks, skips, watch time, or reading duration into signals that guide future recommendations and rankings. Alongside these explicit signals, platforms increasingly rely on implicit feedback — such as how long a user lingers on a page or whether they skip a track — to infer preferences. For example, Sam's listening behaviour on *Lysten* (e.g., skipping a song or replaying it) is interpreted as an indication of her tastes, which then informs future playlists. In the book sector, Sam's browsing of book descriptions, adding titles to a wish list, or the time spent reading an e-book are similarly interpreted as signals of interest, shaping which authors or genres are recommended to her. The feedback loop between the presentation of content (*Presentations*), the selection of content (*Facilitators*) and the analysis of patterns (*Interpreters*) is presented, considering how the various methods for inferring user satisfaction affect a system's ability to aid them in their discovery.

However, these interpretive practices are built on assumptions that are often incomplete or biased. Metrics such as skip rates or reading time are only crude indicators of user satisfaction, yet they are treated as reliable proxies for taste. This reliance on quantifiable metrics creates a "datafication" effect, where every interaction must be translated into numbers that can be processed by algorithms. Researchers warn that such practices can homogenise discovery, privileging mainstream or "popular" works at the expense of more niche or diverse cultural expressions. For instance, the reliance on aggregated engagement patterns and algorithmic recommendations has been shown to reinforce converging listening habits (i.e., reducing diversity and pushing users toward similar content),[30] while online bookstores risk narrowing recommendations to bestsellers rather than helping readers find lesser-known works.

These interpretations not only influence what users see today but also shape future cultural consumption. As user interactions feed back into the system, popular items become even more visible — a phenomenon known as "popularity bias." This creates powerful feedback loops that can entrench inequalities in exposure for creators and limit users' opportunities for serendipitous discovery. Beyond data and transparency issues, there is the question of interpretive goals: if a music app's algorithm is tuned only for maximising listening time, it might never take risks on unfamiliar artists, thus narrowing exposure diversity. Tackling the Interpreters dimension means grappling with how meaning is assigned in discovery processes.

[30] Anderson, A., Maystre, L., Mehrotra, R., Anderson, I., & Lalmas, M. Algorithmic effects on the diversity of consumption on Spotify. Proceedings of The Web Conference 2020, 2155–2165 (2020), available at: https://doi.org/10.1145/3366423.3380281

Experiences (5)

The component of *Experiences* captures the ways in which **users perceive and make sense of their engagement with cultural platforms**. Unlike *Engagements*, which are shaped by more stable demographic and motivational factors, *Experiences* are dynamic and can shift from one interaction to the next. Research shows that users adopt different modes of discovery — ranging from active searching and curating to passive reliance on recommendations — depending on their context, psychological state, and goals. For example, a user like Sam might one day actively search for a new author on books platform, while on another day she might passively accept a playlist generated by her music platform, *Lysten*. These varying modalities highlight that discoverability is not a fixed feature of a platform, but something continually reshaped through interaction.

Each discovery session can therefore be understood as a unique event influenced by situational factors such as time, mood, and intent. Studies on music platforms, for instance, show that users oscillate between periods of exploration (seeking novel content) and exploitation (re-engaging with familiar favourites), often in bursts rather than in steady patterns. Similar dynamics are present in other cultural sectors: readers may revisit beloved books for comfort, while film or TV viewers may binge-watch driven by mood, or tourists may return to familiar heritage sites for affirmation. These findings stress that discovery is not only about accessing content but about how context and individual objectives shape the experience of finding and consuming it.

Finally, user experiences are profoundly shaped by their relationship with *Facilitators* — the algorithms and curators that structure what content is made available. Studies highlight that users often describe their interactions with recommender systems in relational terms, invoking trust, betrayal, or impersonality. This points to a gap between the promise of “personalisation” and the reality of opaque, standardised curation. Building greater transparency and explainability into recommendation processes can foster trust. Platforms have a genuine interest in providing efficiency and users satisfaction, having a key role in mediating cultural discovery. In practice, this means confronting the realities of the *attention economy*: users today are bombarded by an endless feed of choices, and without thoughtful intervention they tend to stick within familiar territory. Platforms have tried to mediate the overload by using personalised recommendations, but this personalisation can inadvertently confine users to echo chambers of their own tastes. The challenge is ensuring that the design of digital content services encourages exploration. Moreover, availability alone does not guarantee consumption of diverse content – the experience must actively bring content to the user’s attention. Making experiences more exploratory, inclusive, and transparent will help ensure that Europe’s cultural riches are not just present online but genuinely *experienced* by diverse audiences.

Ripples (6)

The component of *Ripples* highlights the **wider cultural consequences of discovery and engagement patterns**. Discoverability affects not just individual users, but also cultural products, the artists and producers behind them, and the communities, regions, and nations that frame their circulation. Evidence from music streaming, books, and cultural heritage shows that these effects can be both positive and negative. They ripple outward across scales – shaping diversity and inclusion, economic opportunities, cultural sustainability and identity – and also shaping how cultural products evolve. Major music streaming services require a song to be played for at least 30 seconds for the stream to count towards the royalty pool which is then shared among the music's rightsholders.[31] Research shows that this monetisation threshold is also influencing how some musicians and the recording industry professionals optimise music for music streaming services.[32] Spotted changes include shorter songs, faster intros, reduced use of long instrumental sections or slow build-ups in order to 'hook' the listener from the very start, and last but not least, evidence showing that choruses are introduced earlier in the songs.[33] [34]

First, increased discoverability can foster cultural and linguistic diversity while generating economic and societal benefits. In music, improved visibility has expanded consumption overall while also diversifying repertoires of songs and artists. National charts across Europe now diverge more than before, with stronger representation of domestic artists, suggesting that greater accessibility strengthens regional distinctiveness. In books, similar effects can be seen where digital libraries, translation availability, and platform partnerships open up access to previously underrepresented authors. For example, Sam's journey with a streaming service like *Lysten* shows how algorithmic playlists can expose her to new indie artists, boosting their visibility and incomes. Likewise, her discovery of a new author may hinge on whether affordable translations are available in her language or whether her library partners with online catalogues — decisions that directly influence what communities read and how culture circulates.

Second, these discovery patterns shape self-image for both users and producers. For Sam, the artists and authors she discovers influence how she sees herself as a cultural consumer, while for indie musicians and writers, the metrics generated by her engagement (streams, reviews, ratings) can powerfully affect

[31] Maasø, A., & Hagen, A. N, Metrics and decision-making in music streaming. Popular Communication, 17(1), 18–31. (2020), available at: https://doi.org/10.1080/15405702.2019.1701675

[32] Morris, J. W., Prey, R., & Nieborg, D. B., Engineering culture: Logics of optimization in music, games, and apps. Review of Communication, 21(2), 161–175 (2021), available at: https://doi.org/10.1080/15358593.2021.1934522

[33] Kopf, D., The economics of streaming is making songs shorter. Quartz. (2017), available at: https://qz.com/1519823/is-spotify-making-songs-shorter;

[34] Freyberg, J., The battle for streams (and what it's doing to music). Datawrapper Blog (2024), available at: https://www.datawrapper.de/blog/spotify-music-trends

their sense of recognition and value. Yet these data-driven ripples raise pressing questions about privacy, ownership, and fairness.

For policymakers and sectoral stakeholders, this underscores the need to balance innovation and growth with safeguards that protect cultural diversity, ensure fair remuneration for creators, and build user trust. Ensuring the discoverability of Europe's diverse content is important for cultural sustainability. These are high-level values that ripple through society: for instance, if algorithms predominantly push a narrow set of global hits, local traditions and minority voices struggle to survive in the digital arena. The ripple effects also have an economic dimension: improving discoverability of diverse content can help level the playing field, allowing smaller European publishers, labels, and studios to reach audiences. Over time, this could contribute to reducing the current market imbalances where a few platforms or major producers dominate attention, and instead foster a more vibrant, competitive cultural environment.

2.3. Cultural diversity and European works or content

There is **no established definition of what constitutes a European music or literary work**, neither to the criteria to be considered when measuring diversity. As mentioned in the Policy Landscape (*see Chapter 3*) although cultural diversity may be a consensual objective, its definition remains complex. Some of its multifaceted dimensions that are explored in this study include works' origins, languages (diversity can be approached in a broad and inclusive way, e.g., majority and minority languages, national and local), gender issues, mainstream, less popular artists, new talents and career stage, genres, and consumption patterns. For operational purposes, this study proposes to build an operational definition of European works, drawing as appropriate from elements of the definition of European works set out in the Audiovisual Media Services Directive (AVMSD).[35] In short, the AVMSD defines a European work by where it is made, who makes it, and who finances it, with the rules designed to ensure that "European works" genuinely involve European companies and creative workers.

[35] The AVMSD defines European works as follows: Article 1(1)(n): "'European works' means the following: (i) works originating in Member States; (ii) works originating in European third States party to the European Convention on Transfrontier Television of the Council of Europe and fulfilling the conditions of paragraph 3; (iii) works co-produced within the framework of agreements related to the audiovisual sector concluded between the Union and third countries and fulfilling the conditions defined in each of those agreements. (2) The application of the provisions of points (n)(ii) and (iii) of paragraph 1 shall be conditional on works originating in Member States not being the subject of discriminatory measures in the third country concerned. (3) The works referred to in points (n)(i) and (ii) of paragraph 1 are works mainly made with authors and workers residing in one or more of the States referred to in those provisions provided that they comply with one of the following three conditions: (i) they are made by one or more producers established in one or more of those States; (ii) the production of the works is supervised and actually controlled by one or more producers established in one or more of those States; (iii) the contribution of co-producers of those States to the total co-production costs is preponderant and the co-production is not controlled by one or more producers established outside those States. (4) Works that are not European works within the meaning of point (n) of paragraph 1 but that are produced within the framework of bilateral co-production agreements concluded between Member States and third countries shall be deemed to be European works provided that the co-producers from the Union supply a majority share of the total cost of production and that the production is not controlled by one or more producers established outside the territory of the Member States.

Hence, for the purpose of this study, European works are defined as works originating in one of the EU's Member States, that reflect European creative, linguistic, or production involvement, which are mainly created, produced or owned by artists or organisations established in the EU.

This definition of European works provided above needs to be adapted to the different cultural expressions and sectors analysed in this study as there is no one size fits all solution considering the specificities of each cultural sector. The proposals below for the two main sectors covered by the study are based on their respective sectoral analyses (see after), hence on the literature reviewed and, on the interviews conducted to make those analyses.

As a starting point, European works of **music** could be defined as music that involve contributions from music professionals, which consist of artists (i.e., performers who perform for the purpose of their performance being recorded for further exploitation, featured performing artists, session musicians), studio/record producers (who oversee the creative and technical aspects of a recording session to guide the final product) and songwriters (i.e., composers who compose musical works intended to be recorded, and lyricists who are the authors of words for musical works and compositions) from or based in European countries, or writing lyrics/singing in European languages.

While seemingly easy, this definitional presents several challenges because of several factors:

- **Multiplicity of origins**: The origin of a musical work can involve various countries, with different roles such as the record label, performer, and songwriter potentially coming from different nations.
- **Criteria variability**: Depending on which part of the value chain is examined; a different national origin may be attributed to the work. To exemplify, a work might be written in one country, recorded in another, published in a third, and distributed globally. Similarly, different countries have different criteria for determining the nationality of a work.
- **Language considerations**: The language in which a song is performed (i.e., its lyrics) plays a role in defining European works, with non-Anglo-Saxon languages being a significant factor. However, languages are not always indicative of singular countries and artists might create lyrics in languages other than their national ones (e.g. for broader reach). There is also no broad public recognition of "European music" as a distinct category. Most end users do not search for "European music" as a genre; instead, they look for music based on specific national or linguistic identifiers (e.g., "French hip hop" or "German pop").
- **Metadata challenges**: The use of ISRC codes and other metadata to classify works by nationality or language is problematic, as it can lead to misclassification. For example, a German artist signed to a Dutch label

might have their work classified as Dutch; as record labels act as ISRC managers who register and maintain the ISRCs.[36]

It must be noted that in the data analysis carried out for the music sector, the applied definition of European work of music considers, for practical purposes, three available proxies which are (i) the country of origin/nationality of the artists (i.e., performers) attached to the project, meaning that if at least one of the performers comes from (or claims to represent an EU member country) the respective EU member country, the song is considered local European (and similarly for non-national European music). However, due to the shortcomings of relying on such sometimes self-reported country information rather than verified national origin, for completeness and additional information, (ii) the languages of the lyrics are also considered (with the caveat that some languages might represent more than one country), and (iii) the country of track registration (derived from the ISRC codes with the caveat that a song can be registered in a country irrespective of the artist's ties to it). Details on the operationalisation of Europeanness for music are further provided in Annexes 3 and 4.

There is not an established definition either of 'European works' in regard to **books or literary works**. However, at the EU level, within existing schemes for Creative Europe support to the book sector, there has been some indications of what constitutes eligibility for EU support or awards. For instance, the eligibility for the **European Union Prize for Literature** based on whether the origin of the author is a European country. One of the eligibility criteria for the **Creative Europe Culture Strand call on Circulation of European Literary Works** is that the source language of the literary work must be an officially recognised language of the eligible countries (the countries which participate in creative Europe). Another eligibility criteria is that the works must have been written by authors who are nationals or residents in, or be recognised as part of the literary heritage of an eligible country

Therefore, possible independent criteria that can be applied to define the concept of 'European works in the context of books:

- **Nationality/Residence** of author must be a European country
- **Language** of the work must be a European language
- The work is recognised as part of the **literary heritage** of a European country

In analysis carried out in the sector for this study, several approaches are presented, although each with caveats: i) identifying the original language , although this approach might be problematic for languages representing more than one country (e.g. English, Spanish, French); ii) information on author's place

[36] Lyons, F., Sun, H., Collopy, D., O'Hagan, P., & Curran, K., *Music 2025: The music data dilemma – Issues facing the music industry in improving data management*. Intellectual Property Office, (2025), available at: https://assets.publishing.service.gov.uk/media/5d07940ced915d0a8216b12b/Music-2025.pdf

of birth or nationality from examined platforms, although the user-provided data might include errors, inconsistencies or might simply be missing; iii) through the use of platform tags and categories (e.g. “Polish literature”), although the coverage may vary. Due to these shortcomings and low metadata coverage, a combined indicator is developed in this study – the details for its operationalisation are discussed in Annex 5.

3. Policy landscape

Key findings:

- Discoverability of diverse cultural content online is now a priority in international, EU, and national policy agendas, reflecting concerns about the visibility of local and independent works.
- At the EU level, cultural diversity is an objective enshrined in the Treaties; policies like the AVMSD include measures addressing European content promotion and prominence for audiovisual works, while funding programmes (Creative Europe, Horizon Europe, Digital Europe) and digital infrastructure (Europeana initiative) support circulation and visibility of diverse European cultural works in certain areas.
- Member States have also experimented with diverse policies. These initiatives improve access to culture and heritage but often prioritise digitisation, consumption or affordability over structural discoverability.

The discoverability of diverse cultural content online has become a growing priority on international, European, and national policy agendas, as digital platforms increasingly influence the visibility, accessibility, promotion and circulation of cultural content.

Cultural diversity is a longstanding policy objective at the European as well as international level. This objective is rooted in Art 167 of the Treaty on the Functioning of the European Union (TFEU) and article 3.3 of the Treaty on the European Union (TEU) at the European level, and in the 2005 UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions at the international level. Over the last few years, cultural and digital policy initiatives that bear relevance to the discoverability of diverse cultural content online have risen in importance on policy agendas. Relevant policy developments in this field range from cultural rights discussions to accessibility concerns, transparency obligations, generative AI and prominence issues.

This section situates these developments within the broader policy context, covering the international level, the EU level, and national policy approaches both within EU Member States and selected third countries. This section first provides an introduction briefly discussing the interlinkages between cultural diversity and discoverability, and then analyses the relevance of various policies for discoverability at different policy levels.

3.1. Cultural and linguistic diversity as a cornerstone of EU cultural policies

Cultural diversity is a cornerstone in the development of cultural policies at the European level.[37] As common heritage of humanity, it enables cultural expression, creation and innovation.[38] Crucial international documents building on this concept are the 2001 UNESCO Declaration on Cultural Diversity and the 2005 UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions (the 2005 UNESCO Convention). The latter has been ratified by 161 Member countries, which attributes to a broad international consensus around the importance of cultural diversity and its related principles. The European Union ratified the 2005 Convention in 2006.

Cultural diversity is an important component of European identity,[39] as regularly outlined in EU policy documents with regard to the cultural and creative sectors. Legally speaking, cultural diversity is at the same time a constitutional value,[40] a policy objective[41], and a strategic element of the European Union external action.[42]

The respect of the EU's cultural and linguistic diversity is an objective of the TEU, and the EU is bound by the Treaty to take the cultural dimension into account in its core policies. More precisely, Article 3(3) of TEU provides that one of the aims of the European Union is to "respect its rich cultural and linguistic diversity, and […] ensure that Europe's cultural heritage is safeguarded and enhanced". According to Article 6(c) of the TFEU, the European Union has supportive competences in the area of culture. This entails that EU institutions can only take actions to support, supplement and coordinate the actions of Member States. The actions concerning culture are further specified in Article 167 TFEU. The latter emphasises the importance of protecting the diversity among cultures of Member States with at the same time taking actions to propagate common cultural heritage of the whole Union (Article 167(1) TFEU). Article 167(2) includes the areas in which the EU shall support, supplement, or coordinate the actions of Member States: improvement of the knowledge and dissemination of the culture and history of the European peoples, conservation and safeguarding of cultural heritage of European significance, non-commercial cultural exchanges, artistic

[37] De Voldere, I., et al., 'Mapping the Creative Value Chains: A Study on the Economy of Culture in the Digital Age. Final Report', European Commission, Directorate-General for Education and Culture, Directorate D – Culture and Creativity, Unit D.1 – Cultural Policy (2017).

[38] UNESCO, 'The 2001 Universal Declaration on Cultural Diversity' (2001).

[39] Fuchs, D., and Klingemann, H.-D., 'Cultural Diversity, European Identity and the Legitimacy of the EU', Edward Elgar Publishing (2011).

[40] De Witte, B., 'The protection of linguistic diversity through provisions of the EU Charter other , *Linguistic Diversity*, (2008).

[41] Barbato, JC., *Contribution à l'analyse de la spécificité de la construction européenne* (Aix-en-Provence : Presses Universitaires d'Aix-Marseille) (2008).

[42] European Commission, Towards an EU strategy for international cultural relations. Joint Communication to the European Parliament and the Council. JOIN/2016/029 final (2016).

and literary creation, including in the audiovisual sector. The EU can act in these areas through incentives measures or by adopting recommendations by the Council on the proposal of the Commission (Article 167(5) TFEU). In addition to that, the EU and its members shall also cooperate with third countries and competent international organisations, such as UNESCO. Based on Article 167, respectively paragraphs (4) and (5), the EU should also take protection of cultural diversity into account while acting in the different areas of its activity and should refrain from any initiatives for harmonisation of laws governing the cultural sectors in Member States. More generally, Art. 22 of the Charter of Fundamental Rights of the European Union states that the EU "shall respect cultural, religious and linguistic diversity".

Although cultural diversity may be a consensual objective, its definition remains complex. The concept is too blurred.[43] Its translation into concrete policies remains challenging and therefore its promotion and protection are even more complicated to achieve. For example, in the 2005 UNESCO Convention, cultural diversity "refers to the manifold ways in which the cultures of groups and societies find expression" (Art.4), which could include any expression, and does not provide metrics to assess diversity.

3.2. From diversity to discoverability

In the increasingly digital environment, enhancing the visibility and accessibility of diverse European content is critical to promote cultural diversity and fostering a shared sense of a European identity. Discoverability requires more than online availability; it requires targeted measures and incentives to ensure that content can be effectively found, accessed and engaged with by diverse audiences.

This section outlines key policies, measures and initiatives that aim to support cultural diversity and/or directly or indirectly the discoverability of cultural content online. It is structured by level of intervention; international, European, and national, covering both EU Member States and selected third countries.

3.2.1. International level

3.2.1.1. United Nations

At the international level, **UNESCO's 2005 Convention on the Diversity of Cultural Expressions** has been a strong foundation for policy on cultural diversity online. In 2017, its Conference of Parties adopted Operational Guidelines on the Implementation of the Convention in the Digital Environment, which called for concrete measures to ensure diverse content can be discovered in the digital environment. These guidelines urged governments to "encourage the creation of algorithms that ensure a greater diversity of cultural expressions in the digital environment and promote the presence and availability of local

[43] Bonet, L., and Négrier, E., 'La fin des cultures nationales ? Les politiques culturelles à l'épreuve de la diversité' (2008), Paris: Éditions La Découverte.

cultural works".[44] They also emphasise the technical underpinnings of discoverability – for example, standardising and interconnecting metadata and content formats to achieve diverse digital environments. Critically, the Guidelines highlight transparency and accountability in how platforms should curate content. States are encouraged to introduce 'greater transparency and readability of indexing and content referencing modes' (e.g. recommendation algorithms) so that users are offered a broad range of cultural expressions, rather than biased or opaque curation.[45] In follow up, UNESCO Parties to the Convention adopted an Open Roadmap to implement these guidelines in 2019, a toolkit of actions to help countries integrate cultural diversity goals into their national digital cultural strategies.[46]

Recognising rapid digital shifts, UNESCO established a **Reflection Group on the Diversity of Cultural Expressions in the Digital Environment**. The Reflection Group was mandated to reflect upon the promotion of linguistic diversity of cultural content; the discoverability of national and local cultural content on digital platforms; the importance of greater and meaningful transparency on digital platforms regarding cultural issues, notably artistic freedom; and the impact of artificial intelligence on the cultural and creative industries.

The consultation process resulted in 11 recommendations to strengthen the Convention's implementation in the digital environment, structured in four key areas of action: normative action, exchange of information and good practices, awareness raising and advocacy and capacity building.[47] Notably, Recommendation 1 calls for the negotiation and establishment of a new Additional Protocol to the 2005 Convention, focused on the digital environment. The Conference of the Parties to the Convention at its tenth session in June 2025, decided as a first step to initiate an update/revision of the 2017 Operational guidelines on the digital environment, while leaving open the possibility for further reflection on the option of an additional binding instrument. The other Recommendations were adopted by the Intergovernmental Committee in February 2025. The MONDIACULT 2025 declaration reasserted UNESCO's commitment in this area, stating that the digital environment should promote "diversity of cultural expressions, including through the discoverability of national

[44] UNESCO, 'Operational Guidelines on the Implementation of the Convention in the Digital Environment' (2017), p. 5.

[45] UNESCO, 'Operational Guidelines on the Implementation of the Convention in the Digital Environment' (2017), p. 6.

[46] UNESCO, 'Open Roadmap for the Implementation of the 2005 Convention in the Digital Environment' (2019).

[47] UNESCO, 'Report on the Recommendations of the Reflection Group on the Diversity of Cultural Expressions in the Digital Environment – Implementation Plan of the Recommendations Adopted by the Committee, DCE/25/10.CP/8.a' (2025), pp. 2–3.

and local content on digital platforms, and ensures multilingual content and systems".[48]

Broader UNESCO standard-setting also relates to aspects of discoverability. The **UNESCO Recommendation on the Ethics of Artificial Intelligence (2021)**, calls on governments and digital industry actors to ensure that AI-assisted curation "enhances the visibility and discoverability of local content" and that a "*diverse supply of and plural access to cultural expressions*" is promoted.[49] UNESCO is now assisting countries in implementing these principles, for instance through model AI governance tools and by linking them with the Convention's monitoring (e.g. asking in periodic reports how AI or algorithms are affecting local cultural content online).[50]

At the wider UN level, debates on digital governance have also acknowledged cultural diversity as a key principle. World leaders adopted a **UN Global Digital Compact** in September 2024, as part of a **Pact for the Future**. This constitutes a high-level framework of shared objectives and principles to ensure an inclusive and accessible digital future.[51] This Compact, whilst not explicitly mentioning discoverability, does elaborate on government commitments to ensure digital accessibility for all and to support cultural diversity in the digital space.[52] Proposed commitments on AI governance similarly call for AI systems to be guided by human rights and to "advance, protect and preserve linguistic and cultural diversity" throughout their lifecycle.[53] In practice, this could translate into encouraging multilingual training data, local content promotion, and algorithmic designs that do not unfairly disadvantage minority cultures.

The UN Special Rapporteur in the field of cultural rights, advocates for a rights-based perspective on digital cultural diversity. The report on Digitalization of Cultural Heritage urges countries and private companies to endorse clear principles so that algorithms do not systematically marginalise minority languages and cultures and communities.[54] More recently, her Report: Artificial intelligence and creativity acknowledges the role of AI in content promotion and discovery, emphasises the risks of "algorithmic self-promotion or algorithmic favouritism" and flags the direct effect of AI and recommendation algorithms on "the diversity

[48] UNESCO (2025) Mondiacult Declaration. Mondiacult 2025 Outcome Document, available at: https://www.unesco.org/sites/default/files/medias/fichiers/2025/09/EN_MONDIACULT_Outcome_Document%20Final%2027.09.25.pdf?hub=171169

[49] UNESCO, 'Recommendation on the Ethics of Artificial Intelligence' (2021), p. 33.

[50] See for example UNESCO (2025) The Netherlands Artificial Intelligence Readiness Assessment Report. The report features a dedicated section on Cultural Heritage and Media initiatives. All reports are published at: https://www.unesco.org/ethics-ai/en/global-hub and methodological guidelines are accessible here: https://www.unesco.org/ethics-ai/en/ram

[51] United Nations, 'Global Digital Compact, A/79/L.2' (2024).

[52] Ibid.

[53] Ibid, p. 14.

[54] Xanthaki, A., UN Special Rapporteur in the Field of Cultural Rights, 'Report: Digitalization of Cultural Heritage – Preserving Cultural Rights', Human Rights Council, A/HRC/58/60

of creative works in the digital environment", especially for non-dominant cultures.[55]

Finally, the UN General Assembly finalised in July 2025 the launch of a **Global Dialogue on AI Governance**, a platform 'to discuss international cooperation, share best practices and lessons learned, and to facilitate open, transparent and inclusive discussions on AI governance with a view to enabling AI to contribute to the implementation of the Sustainable Development Goals and to closing the digital divides between and within countries'. This platform is supported by a scientific committee. While the connection with cultural rights is not explicitly mentioned yet, the text explicitly promotes an inclusive approach to AI Governance, and refers to 'the social, economic, ethical, cultural, linguistic and technical implications of AI' and the 'protection and promotion of human rights in the field of AI'.[56]

3.2.1.2. Other international fora

In 2024, the G7 Culture Ministers' Declaration (Naples, 2024) focused on the digital transformation in the cultural sector and pledged to "*strengthen the discoverability, availability and accessibility of diverse cultural content online*", ensuring that the works of underrepresented artists, minority language content, and a "*wide range of cultural expressions*" are visible to global audiences.[57] Similarly, the **G20 Culture Working Group** (2024), emphasised the importance of safeguarding cultural diversity in an era of global streaming and social media platforms.[58] Also the **KwaDukuza Declaration on Culture** (2025) includes a dedicated call for a sustainable digital cultural ecosystem.

The **Organisation Internationale de la Francophonie (la Francophonie/OIF)** has taken the lead in prioritising the discoverability of diverse content online[59], emphasising the need and intention to develop shared knowledge and skills, concrete discoverability initiatives, and broadening partnerships (national and international) to support diverse cultural content online.[60]

[55] Xanthaki, A., UN Special Rapporteur in the Field of Cultural Rights, 'Report: Artificial intelligence and creativity', Human Rights Council, A/80/278

[56] More information on the timeline of this initiative is available at: https://www.un.org/global-digital-compact/en/ai

[57] G7 Italia, 'G7 Minister's Meeting on Culture: Ministerial Declaration – Culture, Common Good for Humanity, Common Responsibility' (2024).

[58] G20 Brazil, 'G20 Ministers of Culture: Salvador da Bahia Declaration' (2024).

[59] Coalition for the Diversity of Cultural Expressions (CDCE), 'The CDCE Welcomes the Adoption of a Joint Declaration in Québec at the 5th Conference of Ministers of Culture of the Francophonie', press release, 27 May 2025, available at: https://cdec-cdce.org/en/publications/the-cdce-welcomes-the-adoption-of-a-joint-declaration-in-quebec-at-the-5th-conference-of-ministers-of-culture-of-the-francophonie/

[60] Ministère de la Culture, 'Stratégie France-Québec 2025-2030: pour la diversité des contenus culturels dans l'environnement numérique' (2015).

3.2.2. The European level

3.2.2.1. Strategic frameworks and current areas of action to ensure cultural diversity (in the digital environment)

As indicated in the introductory section to the policy landscape, the EU's commitments to cultural diversity are enshrined in **Article 167** of the Treaty on the Functioning of the European Union (TFEU). This Article mandates the EU's contribution to 'the flowering of the cultures of the Member States, while respecting their national and regional diversity and at the same time bringing the common cultural heritage to the fore.'[61] Perhaps most importantly, Article 167(4) requires the EU to 'take cultural aspects into account in its action under other provisions of the Treaties, in particular in order to respect and promote the diversity of its cultures.'[62] This obligation underscores the EU's efforts to ensure that its digital single market and technological policies align with the objective of ensuring the safeguarding of cultural and linguistic diversity across Member States.

Building on this foundation, the **European Declaration on Digital Rights and Principles (2022)** provides a reference framework for citizens, the EU, and its Member States, and promotes a digital transition which is shaped by European values.[63] Chapter 2 stipulates that the digital transformation should contribute to fair and inclusive society and economy in the EU, and that cultural and linguistic diversity should be promoted.[64] Furthermore, 'everyone should have access to a trustworthy, diverse and multilingual online environment. Because access to diverse content contributes to a pluralistic public debate and should allow everyone to participate in democracy.'[65] Similarly, the **EU Work Plan for Culture 2023-2026** has identified the 'discoverability of diverse European cultural content in the digital environment' as a policy priority and field of action, emphasising that the availability of content alone is insufficient without measures that ensure visibility and accessibility to audiences across the EU. The present study fits into this Work Plan which also highlights the need to better understand the impact of 'content prioritisation practices, algorithm recommendations and curation

[61] TFEU, 'Article 167(1) [ex Article 151 TEC], 2012/C 326/01' (2012), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2012_326_R_0001_01

[62] TFEU, 'Article 167(4), 2012/C 326/01' (2012), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2012_326_R_0001_01

[63] European Union, 'European Declaration on Digital Rights and Principles for the Digital Decade (2023/C 23/01)' (2023), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOC_2023_023_R_0001

[64] European Union, 'European Declaration on Digital Rights and Principles for the Digital Decade (2023/C 23/01), Chapter II' (2023), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOC_2023_023_R_0001

[65] European Union, 'European Declaration on Digital Rights and Principles for the Digital Decade (2023/C 23/01), Chapter IV' (2023), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOC_2023_023_R_0001

strategies [on] cultural and linguistic diversity.'[66] This policy priority is reiterated in the Culture Compass for Europe,[67] and in the draft joint declaration "Europe for Culture – Culture for Europe" which calls to harness new technologies to ensure the visibility and discoverability of cultural content.[68] The Culture Compass includes among its flagship actions the preparation of a new AI strategy for cultural and creative sectors.

The 2024 **Conclusions of the Council of the European Union on empowering the cultural and creative sectors through data-driven audience development**[69] provide several recommendations on initiatives the European Commission and/or member States can take to support audience engagement and development in a digital environment. This notably includes enhancing digital skills, promoting ethical and transparent use of audience data, and stimulating the use of open data principles for data sharing and protection.

The EU is determined to become a leading AI continent. The EU **AI Continent Action Plan** foresees the development of AI infrastructure, including AI gigafactories, the InvestAI Facility to stimulate private investment, the AI Act Service Desk, to support the implementation of the AI Act, and the future launch of the AI Skills Academy.[70] The **Apply AI Strategy** launched in October 2025, complements the AI Continent Action Plan by increasing AI adoption and integration across key industrial and public sectors, especially among SMEs, and support their specific needs. The strategy foresees targeted actions in 10 sectors, including the CCS, where support will be provided to the development and deployment of European AI models focusing on interactive and immersive storytelling, including media, and on the discoverability of online European music and literary content, inter alia.[71]

This reflects the priorities placed at the highest political level. In her Mission Letter to European Commissioner for Intergenerational Fairness, Youth, Culture and Sport Glenn Micallef, European Commission President Ursula von der Leyen had indeed highlighted the need for a 'more strategic policy approach to culture […] ensuring it becomes more accessible for all,' and to develop an AI strategy that supports the CCS, in alignment with EU values.

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[66] Council of the European Union, 'Resolution on the EU Work Plan for Culture 2023–2026 (2022/C 466/1), IV. Actions' (2022), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2022_466_R_0001

[67] European Commission, A Culture Compass for Europe - Communication from the Commission (2025), Available at: https://culture.ec.europa.eu/document/a-culture-compass-for-europe

[68] European Commission, Draft Joint Declaration "Europe for Culture - Culture for Europe" (2025), available at: https://culture.ec.europa.eu/document/a-culture-compass-for-europe

[69] European Union, C/2024/03542 — Digital Transformation Policies in Cultural Heritage Contex, Official Journal of the European Union, Series C, (2024), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C_202403542

[70] European Commission, Communication 'AI Continent Action Plan'. Brussels, 9.4.2025, COM (2025) 165 final, available at: https://digital-strategy.ec.europa.eu/en/library/ai-continent-action-plan

[71] European Commission, Communication 'Apply AI strategy' Brussels, 8.10.2025 COM(2025) 723 final

3.2.2.2. Legislative landscape in the EU

European content promotion in the audiovisual sector

The **Audiovisual Media Services Directive (AVMSD)** and is the key legislative instrument coordinating national rules for audiovisual media services across the European Union. Generally speaking, the AVMSD aims to establish and foster a well-functioning single market for audiovisual media services while supporting cultural diversity.

Originally adopted in 1989, as the Television Without Frontiers Directive, it has undergone multiple revisions to keep up with the evolving digital landscape. The most recent revision in 2018 introduced updated rules to ensure a level playing field between traditional broadcasters and online services on the audiovisual media content market.[72] In this context, the Directive aims, among other things, to promote European cultural diversity while ensuring a harmonised framework for media regulation across Member States.

Under the AVMSD, on-demand audiovisual media services, such as video streaming subscription services, must ensure a share of at least 30% of European works in their catalogues, and they must ensure that these works are given prominence (Article 13(1)).[73] These quota and prominence obligations[74] are designed to safeguard Europe's cultural and linguistic diversity by increasing, and thus protecting, the exposure, visibility and accessibility of European audiences to European content.[75]

One of the cornerstones of the AVMSD regulatory framework is the "country-of-origin" principle (CoO). This principle is instrumental in the provision of cross-border audiovisual media services and provides legal certainty for providers whilst also encouraging investment in innovative European productions. The 2018 revision of the AVMSD introduced an exception to the CoO principle under Article 13(2), in relation to the promotion of European works. Member States can apply their national financial obligation schemes to operators established in other

[72] European Union, 'Directive (EU) 2018/1808 of the European Parliament and of the Council of 14 November 2018 on the Provision of Audiovisual Media Services (Audiovisual Media Services Directive) in View of Changing Market Realities' (2018), available at: http://data.europa.eu/eli/dir/2018/1808/oj

[73] Official Journal of the European Union, 'Directive (EU) 2018/1808 of the European Parliament and of the Council of 14 November 2018 Amending Directive 2010/13/EU on the Coordination of Certain Provisions Laid Down by Law, Regulation or Administrative Action in Member States Concerning the Provision of Audiovisual Media Services (Audiovisual Media Services Directive) in View of Changing Market Realities' (2018), available at: https://eur-lex.europa.eu/eli/dir/2018/1808/oj

[74] While prominence is not defined strictly, Recital 35 of the Directive provides examples of such measures: "Prominence can be ensured through various means such as a dedicated section for European works that is accessible from the service homepage, the possibility to search for European works in the search tool available as part of that service, the use of European works in campaigns of that service or a minimum percentage of European works promoted from that service's catalogue, for example by using banners or similar tools."

[75] Official Journal of the European Union, 'Implementation of the Audiovisual Media Services Directive. European Parliament Resolution of 9 May 2023 on the Implementation of the Revised Audiovisual Media Services Directive (2022/2038(INI)), C/2023/1062, P9TA(2023)0134' (2023), available at: https://eur-lex.europa.eu/eli/C/2023/1062/oj/eng

Members States, provided these services are active in their own territory.[76] Such provisions require VoD services to invest in local content, thereby prompting cultural diversity through the financing of European productions. Additionally, Articles 16 and 17 require Member States to ensure, where practicable and by appropriate means, that traditional broadcasters to dedicate a majority of their transmission time to European works and allocate at least 10% of programming budgets to independent recent productions, reinforcing content diversity across different distribution models.

Whilst the European Board for Media Services (and formerly the European Regulators Group for Audiovisual Media Services or ERGA) has been monitoring the implementation of the revised AVMSD through a number of focused research endeavours at the national level of European Member States, the impact of the 2018 revision of the AVMSD is yet to be fully assessed. [77] Importantly, pursuant to Article 33 of AVMSD, the Commission is required to present an ex-post evaluation and, if considered appropriate, proposals for review, by the end of 2026.

The European Commission's 'Europe's Media in the Digital Decade: An Action Plan to Support Recovery and Transformation' which was launched in 2020 noted that 'harnessing the potential of the European Single Market to nurture cultural diversity will benefit the media, audiovisual and the wider cultural sector altogether'[78] and pursues similar policy objectives towards the promotion of content diversity. Through this action plan, the Commission highlighted its intention to deepen collaborations with Member States, their Film Funds and the European Board for Media Services, and also involving on-demand platforms, in order to foster more diversity in VoD catalogues.[79]

In sum, whilst an evaluation is underway to fully assess the impact of the 2018 revision to the AVMSD, its provisions regarding quotas for European content, prominence and cross-border governance, are key regulatory tools for advancing the discoverability of European audiovisual media in the online environment and increasing the availability of European content to viewers and its circulation. These tools set a clear course for policy in the sector: European stories and creative productions should be visible and accessible to European audiences.

[76] Ibid.

[77] ERGA, 'Work Programme 2024 – Subgroup 1 Workstream 2. Consistent Implementation and Enforcement of the New AVMSD Framework. Report on the Transposition and Implementation of Article 13(1) (Prominence of European Works), Article 13(2) (Financial Contribution to the Production of European Works) and Article 13(6) (Low Audience Exemption)' (2024), available at: https://erga-online.eu/wp-content/uploads/2024/12/SG1-WS2-Pt1-European-Works_final.pdf

[78] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Europe's Media in the Digital Decade – An Action Plan to Support Recovery and Transformation, COM(2020) 784 final' (2020), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52020DC0784

[79] Ibid.

Other regulatory frameworks with implications for the discoverability of diverse content online

The **Artificial Intelligence Act (AI Act)** introduces rules to address AI-related risks to health, safety and fundamental rights. , They include specific provisions for general-purpose AI (which includes generative AI models).[80] This covers potential transparency obligations such as the marking of AI-generated or manipulated content or disclosing of the origin of deep fake content or of certain AI-generated text (Article 50 paragraphs 2 and 4) or publishing a summary of the content used for training general purpose AI models (Article 53 paragraph 1, d)).

Discoverability of cultural content is also connected to accessibility, be it physical access to cultural venues or accessibility of online content and services. The European Union has been a party to the **United Nations Convention on the Rights of Persons with Disabilities** since 2011. Article 30 of the Convention protects the rights of persons with disabilities to fully participate in cultural life.[81]

Further, the **European Accessibility Act** (Directive 2019/886), adopted in 2019, set the rules on accessibility to services crucial for persons with disabilities. The Act came into force on 28 June 2025 and includes rules on the accessibility of computers, telephones, e-books and audiovisual media services (including television broadcasts), that will result in improving accessibility to culture for persons with disabilities.[82]

The **Digital Services Act (DSA) and the Digital Markets Act (DMA)** together represent another cornerstone of the European Union's regulatory response to the evolving challenges in the digital ecosystem. The two acts, initiated as a legislative package to regulate digital services (the DSA focusing on making the online environment safer and more transparent and the DMA seeking to ensure fairer and more contestable digital markets), are designed to reinforce safety, transparency, openness and fairness within the digital environment in the EU. Their overarching objectives are twofold: first, to create a safer digital space where the fundamental rights of users are upheld; and second, to establish a level playing field that promotes innovation, market contestability, and fairness, particularly in the face of so-called gatekeepers. Both acts are directly applicable across all Member States, aimed at harmonising regulatory standards while addressing emerging technological and market developments and the potential risks that are generated as a result of them.

[80] Official Journal of the European Union. Regulation (Eu) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act). https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng.

[81] United Nations Convention on the Rights of Persons with Disabilities (2006) Article 30, available at: https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities

[82] Official Journal of the European Union. Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services. Available at: https://eur-lex.europa.eu/eli/dir/2019/882/oj/eng

It is important to note that **neither the DSA nor the DMA explicitly target cultural diversity**. However, both contain provisions that might indirectly influence how and what information/content people encounter online. They establish regulatory safeguards imposed on certain online services on how to curate, rank and present content. The requirements regarding transparency of algorithms and recommender systems might indirectly have an impact on the visibility of diverse content online. Therefore, these two acts might be instrumental in ensuring that users have more control over what they see, as well as make sure that major providers of online services are operating in a fair manner. The latter is especially important since the current digital ecosystem is dominated by a handful of players. The relevance of both the DSA and DMA for discoverability of diverse cultural content online thus lies in their (potential) role in fostering a digital environment where, due to rules that are aiming to protect users' rights online, fairness and transparency, diverse content *may be* as an indirect result more readily visible or accessible and hence discoverable.

Transparency and user control in content curation

The **DSA** has introduced harmonised rules for online intermediaries which include online platforms. Within the DSA, the latter are defined as providers of hosting services which, at the request of a recipient of the service, stores and disseminates to the public information. Such a category includes the providers of marketplaces, social media, app stores. The DSA includes more specific obligations for very large online platforms (VLOPs) and very large online search engines (VLOSEs) that reach 45 million active individual users in the EU per month (e.g. Booking.com B.V., Google Ireland Ltd., Pinterest Europe Ltd., amongst others).[83] When platforms or search engines are designated as VLOPs or VLOSEs, they have four months to comply with the DSA, meaning that they have to 'be transparent as regards advertising, recommender systems or content moderation decisions'.[84] It should be noted that most platforms covered in this study do not qualify as VLOPs or VLOSEs, except for Amazon Store (relevant for the books sector), and YouTube or Tiktok.[85]

Several DSA provisions on online platforms aim to govern the algorithms that determine or affect online content visibility, ensuring that users are better informed and empowered regarding what they see in feeds or search results. Arguably, these transparency requirements are directly relevant to how content is, and/or can be, discovered online: if users understand and have agency in controlling recommender systems (to some degree), then they can potentially

[83] European Commission, 'Supervision of the Designated Very Large Online Platforms and Search Engines under DSA' (information updated 14 July 2025), in Shaping Europe's Digital Future, available at: https://digital-strategy.ec.europa.eu/en/policies/list-designated-vlops-and-vloses

[84] Official Journal of the European Union, 'Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and Amending Directive 2000/31/EC (Digital Services Act)' (2022), available at: https://eur-lex.europa.eu/eli/reg/2022/2065/oj/eng

[85] Based on information updated on 26 November 2025. The updated list is available at : https://digital-strategy.ec.europa.eu/en/policies/list-designated-vlops-and-vloses#ecl-inpage-Infinite

encounter a broader range of content, rather than being passively subjected to the platforms' curation mechanisms.

Under Article 27, online platforms that utilise recommender systems must disclose 'the main parameters used in their recommender systems'… 'in plain and intelligible language,' including any options that users might have to modify those parameters.[86] In more practical terms, this means that platforms have to explain *why* they suggest or prioritise certain content, and allow users to influence and 'have their say' in these processes. In the recitals to the DSA, emphasis is placed on the fact that recommender systems 'have a significant impact on the ability of recipients to retrieve and interact with information online, including to facilitate the search of relevant information.'[87] By establishing transparency requirements about how information is prioritised, and giving users the means to adjust or opt out of certain recommendation criteria, the DSA addresses concerns that algorithms can significantly narrow down the exposure to content, and create bubbles. If multiple recommendation options exist on a Very Large Online Platform, or VLOP, (for example, a personalised feed versus a generic or strictly chronological feed), the DSA obliges the said platforms to provide user friendly functionality to switch between the options at any given time (Article 27).[88] This gives users a degree of control, which could be helpful in discovering content outside of solely algorithmically curated results.

For the largest platforms, the DSA goes further in balancing personalisation with diversity.[89] Article 38 requires that VLOPs and VLOSEs 'provide at least one option for each of their recommender systems which is not based on profiling' (within the meaning of GDPR[90]).[91] In other words, VLOPS must offer users the choice to receive content recommendations that are not tailored to their personal data profile. A non-profiled feed or list of search results might ensure that a wider variety of content surfaces. Whilst the DSA does not mandate any particular form of diverse content, these user options might be construed as a contextual tool to broaden the range and discoverability of content. Since these mechanisms might make sure that users can navigate personalised filters and recommender

[86] Official Journal of the European Union, 'Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and Amending Directive 2000/31/EC (Digital Services Act)' (2022), available at: https://eur-lex.europa.eu/eli/reg/2022/2065/oj/eng

[87] Ibid, Recital 70.

[88] Ibid.

[89] Ibid, Section 5 of the DSA: additional obligations for providers of very large online platforms and of very large online search engines to manage systemic risks.

[90] Official Journal of the European Union, 'Regulation (EU) 2016/679 (General Data Protection Regulation), Article 4(4)' (2016), available at: https://eur-lex.europa.eu/eli/reg/2016/679/oj/eng

[91] Official Journal of the European Union. Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act), available at: https://eur-lex.europa.eu/eli/reg/2022/2065/oj/eng. Article 38.

algorithms to possible encounter information they would have missed under algorithmic curation.[92]

The DSA also strengthens transparency in content moderations decisions. Platforms must inform users when they remove content or restrict its availability to certain users, providing a statement of reasons for such particular actions.[93] By requiring clarity in these decisions, the DSA ensures that content is not being hidden unbeknownst to users. Evidently, this does not guarantee that all content is by any means equally visible, but it does mean that users and creators should be made aware of any deliberate suppression of content, which can help to prevent censorship or abusive takedown of content.[94]

To conclude, whilst any relevance of the DSA with regard to the discoverability of content is perhaps purely contextual, it does ensure transparency, user choice and oversight mechanisms. And whilst this is not directly related or targeted to guarantee any outcomes related to cultural diversity, it does lay the foundations for an environment where content curation processes are more open and accountable. Users are empowered to identify possible (negative) biases in algorithmic promotion, which enables them to address these (systemic) risks in line with fundamental rights such as freedom of expression, media pluralism and informed public discourse.

Increased contestability and impact on visibility

The **DMA** complements the DSA by targeting the economic power of large digital gatekeepers, i.e. companies that provide so called core platform services (like search engines, social media networks, or app stores, etc.[95]) and act as gatekeepers. This allows these companies to, in certain instances, influence which services or content gain prominence online.[96] While the primary goal of the DMA is to ensure fairness and market contestability, several provisions might have important impact on the discoverability of content. The DMA guards against scenarios where gatekeepers' own content can be made more discoverable, for example through favouring of such content, than others. This therefore promotes a more level playing field in terms of what users can find online.

Gatekeepers must not manipulate rankings or search results to favour their own products and services over those of third parties, and any conditions for the

[92] Cf. Recital 70, in: Official Journal of the European Union. Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act), available at: https://eur-lex.europa.eu/eli/reg/2022/2065/oj/eng.

[93] European Commission. Shaping Europe's digital future. 'The impact of the Digital Services Act on digital platforms', available at: https://digital-strategy.ec.europa.eu/en/policies/dsa-impact-platforms.

[94] European Commission. Shaping Europe's digital future. 'The impact of the Digital Services Act on digital platforms', available at: https://digital-strategy.ec.europa.eu/en/policies/dsa-impact-platforms.

[95] European Commission. The Digital Markets Act, available at: https://digital-markets-act.ec.europa.eu/index_en.

[96] European Commission. Shaping Europe's digital future. 'The Digital Services Act package'. Accessed on 16 July 2025, available at: https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package.

ranking of content must be transparent, fair, and non-discriminatory.[97] This obligation, although contextually, can be linked to threats concerning the diversity of content in the digital environment: the ability of a gatekeeper to quietly boost its own content (or that of partners) is always at the expense of other content, and has an effect on possible 'competitors'. Gatekeepers that the DMA is targeting are often vertically integrated, which is why they might be particularly interested in reserving better positions for their own offerings whether in search engine results, new feeds, or other curated listings.[98] This 'preferential treatment' could occur at different stages: from crawling and indexing, to the final display of content,[99] giving the gatekeeper's content an unjustified and unfair advantage in visibility. Recital 52 also underscores that this behaviour undermines contestability and should thereby be strictly prohibited.[100] This opens up more prominent spaces for third-party content, enhancing the likelihood that users will see offerings from a wider variety of sources, rather than intra-platform content. In effect, this might ensure that the visibility of content becomes more merit-based or based on relevance, rather than warped by 'ownership', which in turn exemplifies a crucial condition for content diversity online.

It is also stated in the DMA that gatekeepers should be 'required to provide access on fair, reasonable and non-discriminatory terms, to those ranking, query, click and view data in relation to free and paid search generated by consumers on online search engines to other undertakings providing such services, so that those third-party undertakings can optimise their services and contest the relevant core platform services.'[101] Increased contestability in relation to such services among these gatekeepers could translate into more diverse approaches to content discovery, reducing the dependence on any single 'gatekeeping' algorithm over what information users can find. In other words, all content and service providers should have a reasonable opportunity to reach audiences on platforms or directly, rather than depending on gatekeepers that may 'secretly' alter results.

Another relevant aspect worth highlighting is the emphasis on enabling user switching and multi-homing. Gatekeepers cannot inhibit users from easily changing any standard or default settings or switching to potentially rivalling services.[102] This also has another contextual link to the discoverability of content,

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[97] Official Journal of the European Union. Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), available at: https://eur-lex.europa.eu/eli/reg/2022/1925/oj/eng.

[98] Cf. Recital 52 in: Official Journal of the European Union. Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), available at: https://eur-lex.europa.eu/eli/reg/2022/1925/oj/eng.

[99] Ibid, Recital 51.

[100] Ibid, Recital 52.

[101] Ibid, Recital 61.

[102] Ibid, Recital 53.

i.e. if users can navigate different platforms, they are not locked into a single source's curation. In this regard, one aim of the DMA is to ensure that both businesses and consumers have more choice as to the platforms and channels they use to respectively distribute and access content. Gatekeepers are also required to ensure that the general access conditions to some of their services are fair, reasonable and non-discriminatory for businesses. This is then reinforced by Recital 54 which clarifies that gatekeepers should not interfere with users' ability to access content from the open internet freely.[103] In other words, a single platform cannot dictate what a user can see, i.e. what might be discoverable for a user, which means that users should have the autonomy to seek out information sources and services in an autonomous way.

To sum up, the DMA's measures to promote contestability ensure that users benefit from a freer choice of platforms and providers, which is a fundamental notion with regard to the variety of content in the digital environment. Though framed as a more economically oriented legislative instrument, the DMA effectively supports a more structurally pluralistic digital environment. Namely one where gatekeeper platforms cannot unfairly *capture* users' attention to their own content and services and where 'rival' services have a fair chance to compete for users' attention.

3.2.2.3. EU programmes

The EU leverages funding incentives and programmes to support Culture, and the digital transformation of the cultural sectors. Among the various tools employed to enhance the discoverability of online cultural content, EU funding programmes play a key role by supporting initiatives that foster innovation, cross-border collaboration, and the development of digital infrastructures across the cultural and creative sectors. The most relevant programmes are briefly described in this section for the current MFF (2021-2027), including notably Creative Europe, Horizon Europe, Digital Europe and Erasmus+. The next MFF (2028-2034) proposal[104] also includes digital transition as a core priority, and has earmarked additional funding for some key programmes for the CCS, notably through the €8.6 bn AgoraEU programme.

Creative Europe

The Creative Europe Programme is the European Commission's flagship programme dedicated to the cultural and creative sectors. The current iteration of the programme spans through seven years, 2021–2027. With a €2.44 bn budget, the programme is structured into three strands: Culture (33% of the budget or €805 mln), MEDIA (58% of the budget or €1.41bn) and Cross-sectorial (9% of the budget or €219 mln).

[103] Ibid, Recital 54.

[104] See here for the next MFF proposal: https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/eu-budget-2028-2034_en

Its main objectives are to:

- Safeguard, develop, and promote European cultural and linguistic diversity and heritage.
- Enhance the competitiveness and economic potential of the cultural and creative sectors, with a particular focus on the audiovisual industry.

The 2021-2027 Creative Europe programme introduced several features aimed at supporting the CCS, strengthening their efforts to become more inclusive, more digital, and more environmentally sustainable. This is reflected as cross-cutting priorities across all calls of the programme, meaning that 1) applicants can select these topics as priorities for their projects and 2) specific evaluation questions on these cross-cutting criteria count towards the scoring of all project applications.

In this context, some of the Creative Europe initiatives and funded projects are focusing on the digital domain and are linked to the discoverability of European content online. Given the scope of this study, focus is mainly on the Culture Strand of the programme here, as well as specific actions under the cross-sectorial strand (Creative Innovation labs) targeting music and literary works.

Music

Music Moves Europe (MME) is the European Commission's flagship initiative in support of the music ecosystem. The initiative started in 2015 as a bottom-up initiative and a dialogue with professionals from the music sector, echoing a strong request from the European Parliament to support the sector. As such, the European Parliament allocated €7m under a Music Moves Europe Preparatory Action 2018-2020 for the Commission to pilot-test actions for future EU programme support. Based on the lessons learnt of the preparatory action, MME became the integrated approach for EU's support to the music sector. Among other priorities, MME aims at stimulating and accompanying the digital transition of the sector, promoting European music diversity & inclusion, encouraging fair remuneration, improving data about the music sector and supporting the cross-border mobility of artists, especially emerging artists, and the circulation of repertoire within and beyond Europe. As such, dedicated MME calls funded by Creative Europe are launched regularly to address issues identified by the sector. The first project, LiveMX, was awarded in 2023 and is structured around financial support to third parties. It aims to support music export and live sector around three key areas - music export, live music venues, and digital circulation and engagement. Besides, the European Commission launched in 2022 a new structured dialogue with the music sector, which aims to enhance exchange across the music sector on topical issues relevant to EU policy making.

Within the support to transnational **cooperation projects** area, several funded music projects pursue activities with a clear link to discoverability of content. An example is **O.O.O. 2**, a project built upon the previous "O.O.O. - Opera Out of

Opera" Creative Europe project[105], that arose from the common need to re-launch and make new, younger audiences rediscover Opera. The project focused on the accessibility of opera through performances in unusual settings, and online engagement through a mobile app. Other projects like the **Music Tech Europe Academy** address innovation and capacity building.

Creative Europe has also supported **European networks**[106], **platforms**[107] and **orchestras**[108] that can contribute to the growth of the digital cultural sector, by offering innovative tools to promote the discoverability of online content. European platforms strengthen content discoverability by supporting cross-border European programming. Remarkable examples are **Opera Europa Next Generation (OENG)**, designed to bring opera and musical theatre to global audiences worldwide, providing a free live and on-demand streaming service with a single digital window showcasing over 400 productions; or the **Exchange platform** [109] together with its ESNS Radar tool contributes to the discoverability, circulation and showcasing of emerging artists and their works by linking them to festivals, venues and audiences across Europe. ESNS Radar (a data and analytics platform created by Eurosonic Noorderslag – ESNS) tracks airplay, streaming and live performance data to make artists' visibility measurable and comparable across territories. By collecting and publishing this information Radar helps festivals, media and the music industry to discover new talent and provides artists with clear evidence of their reach, boosting their opportunities for international circulation. Funded music networks such as **ECSA Music Authors** (European Composer and Songwriter Alliance)[110] **IMPF** (Independent Music Publishers Forum) , or **IMPALA** (the Independent Music Companies Association) contribute to capacity building in the European music sector. The **EUCOPSY**[111] project is unique among the Pan-European Cultural Entities (PECE) – orchestral projects for explicitly advancing discoverability, through its hub and production platform, live-broadcasted performances, recording sessions and innovative digital diffusion. It ensures that young orchestral talent and new repertoire are visible and accessible to the widest possible audiences across Europe and beyond.

[105] For more information, please see: https://aec-music.eu/project/opera-out-of-opera-2-2022-2025-creative-europe-cooperation-project/

[106] For more information, please see: https://culture.ec.europa.eu/creative-europe/creative-europe-culture-strand/european-networks

[107] For more information, please see: https://culture.ec.europa.eu/creative-europe/creative-europe-culture-strand/european-platforms

[108] For more information, please see: https://culture.ec.europa.eu/creative-europe/creative-europe-culture-strand/pan-european-cultural-entities

[109] For more information, please see: https://europeantalentexchange.eu/en/

[110] For more information, please see: https://composeralliance.org/

[111] For more information, please see: https://fames-institute.com/our-values/

Books

The Creative Europe's sectoral approach to books and publishing sectors through its dedicated funding action **'Circulation of European Literary Works'** enhances the discoverability of European literature by supporting the translation, cross-border circulation and the diversity of European literary works. By combining multilingual access with targeted promotion, the action expands the reach of European works of fiction across national and digital markets, strengthens both offline and online visibility and safeguards cultural diversity and accessibility, thereby sustaining the long-term discoverability and competitiveness of European literature globally.[112] Between 2021 and 2023, the Creative Europe programme has facilitated the translation of more than 1,500 books, bolstering linguistic diversity and access to literature from lesser-used languages across Europe.[113] Other projects supported by Creative Europe in the books sector are:

- **CELA (Connecting Emerging Literary Artists)** – A network supporting emerging authors and translators working in lesser-used languages. By translating and promoting literary works in non-native languages, and connecting authors and publishers across borders, CELA aims to offers smaller languages more opportunity in the publishing industry. [114]
- **ABE LAB (Accessible Backlist E-Books Laboratory)[115]** focuses on making e-books accessible in compliance with the EU Accessibility Act, helping to combat the "book famine" for individuals with disabilities. More specifically, the project made an appraisal of different accessibility issues and matched these with existing tools that help to address these per different eBook categories (fiction, non-fiction, complex layout books), and provided an overview of costs per title. The partner Fondazione LIA is now coordinating a larger project, APACE, a 7-member consortium which includes 3 publishers associations (incl. BOEV - the German publishers federation) and 3 specialist organisations. APACE aims at bringing the right stakeholders together and will enhance the capacity of the EU publishing industry in the accessibility field, filling the current gap of competences and creating a new generation of professional experts. By the end of the project APACE will reach 20 organisations in 18 countries involving more than 2600 participants in its activities.[116]
- **ALDUS UP** – A professional network uniting book fairs and publishing associations to enhance the sector's resilience. The network also focuses on relevant topics for discoverability, such as data-driven insights to

[112] For more information, please see: https://culture.ec.europa.eu/cultural-and-creative-sectors/books-and-publishing/circulation-of-european-literary-works

[113] European Commission (2025) A Decade of Creative Europe. COM(2025) 768 final, Brussels, 17.12.2025. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2025%3A768%3AFIN&qid=1765965582427

[114] For more information, please see: https://www.cela-europe.com/

[115] For more information, please see: https://www.abelab.eu/

[116] For more information, please see: https://www.europeanaccessibilitydirectory.eu/about-the-project/

promote and market diverse content across audiences, including through reading surveys

Creative Europe has also supported European networks and platforms that can contribute promote the discoverability of books online. The European platforms in particular, strengthen content discoverability by supporting cross-border European programming and curated showcases that enhance the presence and accessibility of emerging artists and their works across global audiences. Examples in the field of literary works include **Versopolis,**[117] a platform that enhances the visibility and discoverability of European emerging poets/talents offline and online through residencies, translations, festivals and its digital platform and support to emerging talents. In synergy, **Beletrina Digital**[118], which is supported by the Innovation Labs action, expands e-book services into a multimedia hub, by leveraging AI translation and publishing networks and by enabling a dialogue between literature and audiovisual content where reading inspires viewing and vice versa. Together they advance the cross-border accessibility, adaptation and circulation of European literary works while fostering dynamic spillovers between the books, publishing and audiovisual sectors.

Cross sectoral

Under the call for **Innovation Labs** of the Creative Europe Programme Cross sectoral strand, several funded projects directly relate to the discoverability of online content:

- One such example is the **Bettertained** project,[119] developing a platform seeking to enhance the visibility, audience engagement, and marketing of European cultural content through AI solutions. This project aims to reinvent and democratise content visibility and discovery by leveraging an AI-driven recommendation system, an online platform, and a toolkit. The Bettertained platform proposes AI-powered personalisation by offering individualised AI-powered content recommendations for both individual users and groups.
- **Panodyssey,**[120] a collaborative European writing platform, aims to foster the creation, sharing, and monetisation of original content, Panodyssey provides a space for writers, publishers, and readers to connect across borders. The platform provides tools for writers to create, publish, and monetise their work through features like personalised "Creative Rooms," which act as digital portfolios. For readers, the platform offers a personalised feed and library to explore diverse content based on their interests. Panodyssey is mainly French-speaking (90% of content), but aims to support linguistic diversity and includes regional and minority

[117] For more information, please see: https://www.versopolis.com/

[118] For more information, please see: https://beletrinadigital.si/

[119] For more information, please see: https://bettertained.com/

[120] For more information, please see: https://www.panodyssey.com/

languages. Through the CREA Trust AI, also supported via the innovation lab calls, Panodyssey seeks to extend its solutions to enhance discoverability and visibility of content across three types of content: audiovisual, text and image.

- **EMERGE** seeks to facilitate the sourcing and matching of music and audiovisual works to increase synchronisation revenues. Despite its growing importance for artists, publishers and labels, matchmaking between music and sync customers has not evolved much over years. The objective of the platform is to connect European music directly with potential sync customers, such as TV and film producers, marketing agencies, and the gaming industry, and improving the discoverability of music content for other cultural and creative sectors. At ESNS 24, a new tool called EMERGE was first publicly introduced. This AI-powered chat interface aims to help professionals find the music they need while promoting European music in a market dominated by Anglo-American influences.

Horizon Europe

The Horizon Europe (HE) programme focuses on the scientific, technological, economic and societal advancement of the European Union. It supports research and innovation for the digital transformation of cultural sectors through different actions. The Work Programme 2026-2027 (adopted on 11 December 2025) for Cluster 2: “Culture, Creativity and Inclusive society” specifically targets the digital transition and a more resilient, competitive, inclusive and democratic Europe, and finances projects that could, in theory, support the discoverability of online content under two of its three main pillars.[121] In particular, the topic “HORIZON-CL2-2026-01-HERITAGE-04: Towards a fair and transparent market for cultural and creative content in the era of generative AI” calls for solutions to increase the discoverability of trustworthy cultural and creative content.

Notably, in the field of Cultural Heritage, Horizon Europe is funding flagship initiatives such as the **European Collaborative Cloud for Cultural Heritage (ECCCH)** that provides a digital workspace for museums, archives and research centres to collaborate. The cloud enhances the ability of cultural heritage actors to interact across disciplinary, institutional, sectorial and political boundaries and cooperate effectively in advancing research on cultural heritage and in developing innovative solutions for the discovery, recovery, conservation, digitalisation and valorisation of digital, digitised and digitisable cultural heritage objects. This might also facilitate the prevention of illicit trafficking of cultural heritage objects. In order to support the digital transition of the sector and further enhance research and innovation collaboration and activities in the field, shared tools, sophisticated digital instruments and infrastructure are being developed so

[121] The three pillars of Horizon Europe are Excellent Science, Global Challenges and European Industrial Competitiveness, and Innovative Europe, and the latter two pillars are both relevant for discoverability.

that institutions from all sizes (and with varying resources) can manage and enhance their digital collections[122] and can exchange data and collaborate. The initiative ensures transdisciplinary collaboration, bringing together a range of experts from a wide variety of disciplines. Yearly calls have been issued in Horizon Europe Cluster 2 Work Programmes 2023, 2024 and 2025 to fund projects that together establish the ECCCH. These projects, and the ECCCH as such (particularly through the core project ECHOES), also contribute to the common European data space for cultural heritage.

Furthermore, under Horizon Europe's Cluster 2, there have been specific call topics and projects that focus on discoverability of online content. Among others the following projects have been funded:

- **FairMuse**[123] is a project which seeks to develop (inter alia) a data-sharing model agreement to enhance transparency in royalties and licensing for the music sector. Importantly, the project analysed the effects of recommender systems in the music sector.[124] The project also researched the diversity of content proposed to users on radio and streaming, drawing on anonymised listening data from 235 users across Europe, alongside curated playlists from 73 major radio stations in eight countries, concluding that whilst streaming services have a more diverse offering, the content promoted to users via recommendations and playlists is less diverse than for public radio broadcasters.[125]
- **Anima Mundi** which investigates the strengths and gaps in terms of discoverability of European animation content, and pilots solutions to address the main challenges, including a dashboard for policymakers and professionals to assess the visibility of and access to European Animation internationally, and a tool for promoting discoverability through gamification.[126]

Besides, other pillars have supported research relevant for the discoverability and audience engagement; for example, via Marie Skłodowska-Curie Action Algorithmic Auditing for Music Discoverability (AA4MD), or European Research

[122] European Commission, 'Cultural Heritage Cloud', available at: https://research-and-innovation.ec.europa.eu/research-area/social-sciences-and-humanities/cultural-heritage-and-cultural-and-creative-industries-ccis/cultural-heritage-cloud_en

[123] For more information, please see: https://fairmuse.eu/

[124] Ranaivoson, H., et al., 'Tuning In: A Comprehensive Analysis of Music Recommender Systems, Playlists, and Algorithmic Fairness' (2024).

[125] For more information, please see: https://fairmuse.eu/news-release/what-the-data-reveals-diversity-and-inequality-in-music-streaming/

[126] For more information, please see: https://www.animamundi-values.eu/

Council grants (e.g. Music at the Frontiers of Artificial Creativity and Criticism (MUSAiC)[127] or Music Culture in the Age of Streaming (Musicstream).[128]

Another important, and sector-specific programme, is the 9th Knowledge and Innovation Community (KIC) of the European Institute of Innovation and Technology (EIT) for the Cultural and Creative Sectors and Industries **(EIT Culture & Creativity**).[129]

Digital Europe

Europe's digital infrastructure is also an integral part of its policy landscape when it comes to the digital transformation of the sector. The Digital Europe Programme is an EU funding programme focused on bringing digital technology to businesses, citizens and public administrations. Besides the flagship initiatives reported below, Digital Europe has supported various projects connected to the uptake of digital technologies in the CCS, covering topics as relevant as 3D modelling, virtual reality, and AI or digital skills on AI for creativity (including for instance AI-SECRETT, [130].

The **Europeana** platform has served as an important cornerstone of the EU's digital cultural infrastructure since 2008, facilitating discoverability by aggregating and sharing millions of digitised cultural heritage records across Member States, hereby improving interoperability and metadata standards to enhance access to these sources. The **Common European Data Space for Cultural Heritage** was launched in 2021, building on the foundations of the Europeana initiative,[131] and is funded under the Digital Europe programme.[132] It is deployed by a consortium led by the Europeana Foundation. It aims to accommodate and accelerate the sector's digital transformation and foster new ways of data sharing, exchange and re-use. Its development in the context of the Data Space Strategy 2025-2030[133] is a **flagship action in the Culture Compass**.

[127] The project is developing a music pedagogy for AI, to prepare music practitioners and audiences to listen to and work with music in new ways, seeking to pave the way for a responsible AI transformation. For more information, please see: https://cordis.europa.eu/project/id/864189/results

[128] The project investigates how music culture might (or might not) be changing in an era when more and more people access music via streaming platforms. The project's scope is international, but with a particular focus on the EU, North America and China. For more information, please see: https://musicstreamproject.com/

[129] For more information, please see: https://eit-culture-creativity.eu/

[130] For more information, please see: https://aisecrett.eu/#ai-secrett

[131] Official Journal of the European Union, 'Commission Recommendation (EU) 2021/1970 of 10 November 2021 on a Common European Data Space for Cultural Heritage' (2021), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021H1970&from=EN

[132] European Commission, 'Data Space for Cultural Heritage', available at: https://www.dataspace-culturalheritage.eu/en

[133] European Commission (2025), Common European data space for cultural heritage – Strategy 2025-2030, available at: https://data.europa.eu/doi/10.2759/9497280

The rise of artificial intelligence and Large Language Models (LLMs) has also gained importance when it comes to preserving European linguistic, and cultural, diversity. To ensure that Europe's linguistic diversity is supported by AI tools, the Commission set up **The Alliance for Language Technologies (ALT-EDIC).**[134] ALT-EDIC is a multi-country project, focused specifically on promoting language technologies and preserving Europe's linguistic diversity and cultural richness.[135] It does so by collecting language data to foster the development of LLMS with 'robust multilingual and multimodal capabilities'.[136]

Other programmes

Other relevant funding mechanisms with regard to the culture and creative sectors include **Erasmus+,** which aims to leverage connections between education and culture. It supports projects in the field of artistic and cultural mobility, internationalisation and access to new markets, skills development and capacity-building and digitalisation and the development of new business models.[137]

The **Recovery and Resilience Facility** (**RRF)** supports the economic, social and territorial cohesion of the Union as its main objective. One of its six pillar focuses on digital transformation. Some Member States included provisions in their Recovery and Resilience Plans to use RRF funding to support the cultural and creative industries and more specifically to support their digital transition as well as to support the digitisation and making available of cultural heritage to the public as well (see examples below).[138] The National Recovery and Resilience Plans allocated €11.7 billion to the cultural and creative industries, which accounted for 2% of the RRF budget.[139] **Cohesion Policy** supports regional development in terms of job creation, business competitiveness, economic growth, sustainable development and improvements to citizens' quality of life. Across its instruments (including inter alia the European Regional Development Fund, the European Social Fund Plus, and Interreg), it also provides important support to the CCS, with over €5 billion in the current MFF (2021 to 2027) allocated to direct investments in culture and cultural heritage across, supporting over 24,000

[134] Official Journal of the European Union, 'Commission Implementing Decision (EU) 2024/458 of 1 February 2024 on Setting up the European Digital Infrastructure Consortium for the Alliance for Language Technologies (ALT-EDIC)' (2024), available at: https://eur-lex.europa.eu/eli/dec_impl/2024/458/oj

[135] ALT-EDIC, 'Alliance for Language Technologies', available at: https://www.alt-edic.eu/

[136] Ibid.

[137] European Commission, 'Erasmus+ Funding Programme', available at: https://commission.europa.eu/education/set-projects-education-and-training/erasmus-funding-programme_en#about-the-erasmus-funding-programme

[138] European Commission, 'Recovery and Resilience Scoreboard – Thematic Analysis on Culture and Creative Industries' (July 2024), available at: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/assets/thematic_analysis/scoreboard_thematic_analysis_culture.pdf

[139] European Commission, 'Updated Data: National Recovery and Facility Plans Allocate €11.7 Billion to Culture and Creative Industries' (2025), available at: https://culture.ec.europa.eu/news/updated-data-national-recovery-and-facility-plans-allocate-eu117-billion-to-culture-and-creative-industries

culture, cultural heritage and tourism sites.[140] For example, envisaged interventions foreseen in ERDF are 'support for the digital transformation of the cultural sector, including new digital cultural platforms' or 'support to SMEs in the culture and creative sectors, including towards digital business models.

For a comprehensive overview of the funding landscape relevant to the CCS, the CulturEU Funding Guide (2021-2027) provides an overview of EU Funding Opportunities for the CCS.[141] As announced in the Culture Compass for Europe, this guide will be updated to cover the new programmes for 2028-2034.

3.2.3. The national level

At the national level, policies related to the digitisation of cultural heritage, and policy responses to the rapidly changing digital environment and its pivotal role in the consumption as well as the preservation of culture have been well underway. A variety of related policy developments to promote culture in the digital environment have been carried out. Initiatives range from the development of better equipped promotion and distribution mechanisms to incentives to lower potential financial barriers regarding cultural participation or consumption.

Some of them might interest the **promotion and distribution of cultural content**, some others give also the opportunity to gain discounts or special offers when it comes to cultural consumption.

On the discoverability of cultural content, France has had an active role, for example in the context of the **joint strategy with Québec on the diversity of cultural content in the digital environment**.[142] In the field of music, the Centre National de la Musique (CNM) has produced **various reports and organised events** on music diversity and discoverability. Recently, the CNM and the ARCOM have announced a public consultation on music diversity in the digital environment.[143] Furthermore, in 2024, a **streaming tax** was introduced. The revenues generated feed into the CNM's funding schemes and aim to support inter alia the diversity of the French music industry.[144] The **strategy of the French Ministry of Culture for AI** does also pay special attention to discoverability.[145]

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[140] Data compiled from Kohesio database: https://kohesio.ec.europa.eu/en/projects

[141] European Commission, 'CulturEU Funding Guide' (2021), available at: https://culture.ec.europa.eu/funding/cultureu-funding-guide

[142] For more information, please see: https://www.culture.gouv.fr/catalogue-des-demarches-et-subventions/subvention/decouvrabilite-des-contenus-culturels-francophones-dans-l-environnement-numerique-a-l-ere-de-l-ia

[143] For more information, please see: https://cnm.fr/communiques/larcom-et-le-cnm-lancent-une-consultation-publique-sur-la-diversite-musicale-dans-les-medias-audiovisuels-et-sur-le-numerique/

[144] For more information, please see: https://cnm.fr/en/news/streaming-tax/

[145] Ministère de la Culture (2025) Une stratégie d'action pour des intelligences artificielles culturelles et responsables. Available at: https://www.culture.gouv.fr/thematiques/innovation-numerique/la-strategie-du-ministere-pour-des-intelligences-artificielles-culturelles-et-responsables

Projects have been funded by the RRF to enhance the **visibility of cultural content**, for instance in Belgium. The "Dcouvr"-project[146] in Wallonia, a research and innovation project, aims at developing digital tools to improve the discoverability of content from cultural and media operators in the Wallonia-Brussels Federation. The Flemish Region also supports a project that aims to connect the wide range of cultural offers with interested cultural participants in order to increase cultural participation and boost data-driven policies within the cultural sector to develop new audience-focused products and services.[147] For example, in the **books sector**, the Spanish platform Todos Tus Libros, co-funded by NextGenerationEU and the Spanish Ministry for Culture, brings together small bookstores into a centralised online environment, allowing them to partake in the digital ecosystem without creating their own digital environment.[148]

In many European countries different measures have also been adopted to **digitalise cultural heritage to favour and facilitate their online circulation**. For example, specific measures have been adopted as parts of the National Recover Plans. Thus, in the Czech Republic, the development of the cultural and creative sector policy aimed, among other objectives, at digitalising cultural assets and national cultural monuments.[149] In Italy, the National Plan for the Digitalisation of Cultural Heritage, aiming at digitalising and thereby preserving Italy's cultural heritage whilst also making it more easily available to the public.[150]

Some other examples seek to **incentivise cultural consumption of cultural content among young people**. **Pass Culture** in France aims to stimulate the diversity of artistic and cultural practices and promote access to culture.[151] Basically, Pass Culture offers 15-18-year-olds up to € 300 to spend on cultural content, and some additional support for cultural activities at school. The use of Pass Culture for cultural products discovery is dominated by books,[152] followed by physical music releases, and cinemas.[181] In terms of discovery of cultural offerings, the Pass Culture seems to be often used by beneficiaries on content that they are already familiar with. Although the Pass Culture application has a dual content recommendation system based on algorithmic and manual curation, most bookings are a result of searching. While the Pass undeniably had positive

[146] Université catholique de Louvain (French), 'Découvrabilité', available at: https://www.uclouvain.be/fr/instituts-recherche/ilc/miil/dcouvr

[147] Publiq (Dutch), 'UiT wisselingsplatform', available at: https://www.publiq.be/nl/projecten/uitwisselingsplatform

[148] Todos tus libros, "Todos tus libros – Online Bookstore Directory" (n.d.), available at: https://www.todostuslibros.com/

[149] Czech Ministry of Culture, 'Cultural Policy of the Czech Republic' (n.d.), available at: https://mk.gov.cz/en/cultural-policy-of-the-czech-republic-en-983

[150] Italy's Ministry of Culture, 'Il Piano' (n.d.), available at: https://digitallibrary.cultura.gov.it/il-piano/

[151] Ministère de la Culture (France), 'The Impacts of the Individual Share of the Culture Pass' (2024), pp. 10–11.

[152] Comic books and manga were the most popular genre (20%), followed by French literature (15%). Data from June 2018 to August 2023, compiled in Ministère de la Culture Français, the impacts of the individual share of the Culture pass, p.10-11, 2024

impacts in terms of cultural spending, the ability of the measure to diversify cultural practices could not be wholly demonstrated in its evaluation.[153] The **Bono Cultural Joven** is a cultural voucher programme launched in Spain in 2022. The initiative provides a €400 voucher to young people upon turning 18, which can be used to purchase cultural products or participate in cultural activities. The programme aims to offering financial incentives for young adults to explore and enjoy cultural experiences, fostering healthy cultural consumption habits, and revitalising the Spanish cultural sector in the aftermath of the COVID-19 pandemic. Bono Cultural Joven imposes specific spending limitations on cultural consumption. Recipients can allocate up to €200 for live performances, cultural heritage, and audiovisual arts; up to €100 for physical cultural products; and up to €100 for digital or online cultural content. In 2016, Italy also launched the **Bonus Cultura** - now discontinued. The programme was supported by a dedicated mobile application and operated entirely online. The app utilised geo-localisation features, enabling users to discover cultural offerings in their local area.

Other examples of national and local initiatives are presented in the sectoral chapters.

3.2.4. The national level beyond EU Member States

The issue of online content discoverability is increasingly recognised as a global challenge, extending well beyond European borders. This section provides an overview of relevant policies, including the **Online Streaming Act (OSA)** in Canada and promotion of cultural content online in New Zealand and Australia.

The **Online Streaming Act** (OSA), adopted in 2023, employs a legislative framework to enforce contributions from major digital platforms and promote inclusivity, ensuring Canadian cultural content, including Indigenous and minority languages, is fairly represented[154]. The Act modernises the broadcast regulatory framework to reflect the significant evolution of the digital landscape since the era of dial-up internet. When it comes to digital platforms, the OSA regulates not only Audiovisual Streaming Services (AVSS) but also Music Streaming Services (MSS). The Act requires broadcasters, including online streaming services, to:

- Showcase Canadian stories and music;
- Contribute to the production of Canadian stories and music in English, French and Indigenous languages;
- Support a broadcasting system that reflects Canada's diversity;
- Help to make programs accessible without barriers to persons with disabilities.

[153] Ibid. Note that access to data is limited due to the private management of the scheme.

[154] Government of Canada, 'Online Streaming Act (Modernization of the Broadcasting Act)' (2023), available at: https://www.canada.ca/en/canadian-heritage/services/modernization-broadcasting-act.html

These requirements are flexible and the Canadian government, through its policy guidelines, empowers the Canadian Radio-television and Telecommunications Commission (CRTC) to implement the OSA and set out the precise requirements of how this should be achieved.[155] The CRTC has launched several consultations and work to define these requirements, across three themes: 1) high-quality Canadian content, 2) a sustainable broadcasting system, as well as 3) clear and predictable rules.[156]

Among different aspects, the CRTC needs to determine the scope of potential reserved programming time for Canadian content. The previous broadcasting act included reserved transmission time for Canadian content on television and radio. While the OSA clarifies that MSS are within the scope of the Act, this does not mean that the same types of requirements will apply to such services.

It also needs to designate which "broadcasting undertakings"[157] fall under its regulatory scope, and determine the financial contributions required from these platforms. Broadcasting undertakings, including streaming services, have to ensure compliance through registration and information requirements: Platforms must register with the CRTC, provide financial data, and comply with information-gathering requests demonstrating they comply with the OSA requirements. The scope of such requests is currently under discussion.

On discoverability, the CRTC has launched a study to examine how Canadians find and discover content on traditional and online platforms, expected by end of 2025.[158] On financial contributions, online streaming platforms with over CAD 25 million (EUR 15.5 million) in annual revenues must allocate 5% of their Canadian revenues to support areas like local news, French-language content, indigenous content, equity-deserving groups and official Language Minority Communities (OLMCs).[159] In addition, this funding may support targeted discoverability efforts, such as establishing an Indigenous Music Office and other content-specific promotion initiatives. Platforms can choose how to allocate their contributions from these areas.

The OSA has sparked differing reactions across Canada, with particularly strong public support in Quebec compared to more cautious or critical perspectives in English-speaking provinces. In Quebec, preserving French-language culture in the face of external influences is a major priority, and stakeholders have broadly

[155] For more information, please see: https://gazette.gc.ca/rp-pr/p2/2023/2023-11-22/html/sor-dors239-eng.html

[156] For more information, please see: https://crtc.gc.ca/eng/industr/modern/index.htm

[157] Both online and traditional ones are included within the OSA. The expanded definition of broadcasting undertakings under the OSA is crucial as it includes "online undertakings" with the intention of encompassing "any undertaking used for the transmission or retransmission of programs over the Internet for reception of the public by means of broadcasting receiving apparatus" therefore including both AVSS and MSS.

[158] For more information, please see: https://crtc.gc.ca/eng/industr/modern/plan.htm

[159] Government of Canada, 'Online Streaming Act (Modernization of the Broadcasting Act)' (2023), available at: https://www.canada.ca/en/canadian-heritage/services/modernization-broadcasting-act.html

advocated for bold actions under the Act. This urgency is driven by growing concerns that younger audiences are shifting toward English-language content, increasing the risk of cultural dilution. As a result, the province has been at the forefront of discussions on enhancing discoverability measures to safeguard French-language cultural identity. Quebec passed in December 2025 a law on the Discoverability of Francophone Cultural Content, affirming Quebec's cultural sovereignty and aiming to ensure that Francophone cultural content is easily accessible and visible online [160].

A few countries also promote some direct support to discoverability. In **Australia and New Zealand**, partnerships between music export offices (NZ On Air, Sounds Australia) and platforms like Spotify and Apple Music have delivered curated local playlists ("Made in NZ," "Fresh Finds AU & NZ") that significantly boosted visibility and streams for local artists. In Australia, the discussion on potential streaming quotas led to the development of a promotional focus on Australian music on Sportify.[161] New Zealand also focuses on the promotion of content across a range of platforms so audiences know about and can access that content. It also provides operational funding for vital public media platforms and services that provide access to important content that would otherwise not be provided, such as Pacific radio, community access media (radio), student radio, and popular culture websites NZ on Screen and AudioCulture.[162]

3.3. Conclusions

The analysis of the policy landscape reveals that the discoverability of cultural content in the digital environment is increasingly recognised as a relevant dimension of cultural policy. The policy landscape is highly heterogeneous: measures explicitly targeting discoverability are relatively new and not yet fully implemented (e.g. the latest iteration of the online streaming act in Canada). At present, the regulatory and policy responses across the international, European, and national levels vary in scope, ambition, and implementation maturity, reflecting both the complexity of the issue and the evolving nature of the digital cultural ecosystem. At the European level, legislative instruments provide relevant provision to tackle not only access to but also the visibility and prominence of cultural content, albeit in a limited sectorial or material scope. The AVMSD introduces quotas and prominence obligations for European works in the audiovisual sector. The DSA and DMA establish broader requirements for algorithmic transparency, content recommendation, and fair platform practices, but their actual impact on discoverability of cultural content has not been evidenced yet. The AI Act includes new obligations to mark AI generated content

[160] Le Québec adopte le projet de loi nº 109 affirmant sa souveraineté culturelle Gouvernement du Québec

[161] For more information, please see: https://www.turnupaus.byspotify.com/

[162] For more information, please see the detailed funding strategy of NZ on air: https://www.nzonair.govt.nz/funding/our-funding-strategy-explained/

that will increase transparency on the use of AI-generated content, and the Accessibility act sets out requirements to make content accessible to all users.

Complementarily, funding programmes such as Creative Europe and Horizon Europe have further supported cultural diversity and the discoverability of cultural content in the digital environment through cultural, research and innovation-driven projects. At the national level, Member States have introduced a range of policy instruments, from cultural vouchers and geo-localised apps to digitisation initiatives and online content platforms. These measures often aim to promote cultural consumption, stimulate audience engagement, or enhance access to local offerings and indirectly may have an impact on discoverability.

While a shift from a general commitment to cultural diversity toward a more explicit focus on discoverability is in action, this transition is still in its formative phase.

4. Sector-Specific Analysis: Music sector

This chapter provides sector specific analyses on discoverability in the digital environment in the music sector. Within the European Union, the music industry is not only a vital cultural pillar but also a significant economic driver, integrating the Cultural and Creative Industries ecosystem, one of the 14 key ecosystems shaping the EU economy. By fostering growth, innovation, and employment—particularly among young people—the music sector exemplifies the intersection of cultural value and economic opportunity, by rapid advancements in digital technologies. The shift from physical sales and downloads to streaming services as the dominant modes of music consumption has reshaped the entire ecosystem.

4.1. Introduction to the Sector and Main Discoverability Pathways

Key findings:

- The music sector consists of live music, recorded music, and publishing, but recorded music is the key driver of revenue and discoverability, shaped largely by streaming platforms.
- Music streaming services (MSS) dominate distribution, with a global leader holding 56% of Europe's market share, though local preferences vary.
- Digital democratisation has lowered barriers for independent artists but created a high volume of music content: 184 million tracks were available in 2023, with nearly 80 million receiving fewer than 10 streams; AI-generated content is rising sharply, intensifying competition.
- Market concentration in the recording sector is high: a few majors control most digital royalties, giving them disproportionate influence over promotion, playlisting, and visibility.
- Consumer survey data shows MSS are the most important discovery pathway, followed by recommendations from friends/family and live concerts. Social recommendations (collaborative playlists, friends, TikTok, Instagram) play a growing role in music discovery. Platforms with viral short-form videos might not be used primarily as music platforms (only 10% of surveyed users indicated they look for music recommendations on those platforms), but they can carry significant side effects on music discovery (61% indicated these are at least somewhat important to music discovery).

4.1.1. The domination of music streaming services over the music sector

To understand the discoverability of music within the digital environment, it is essential to comprehend the structure of the music sector. The sector comprises three core industries: live music, recorded music and music publishing.[163] While the three core industries are interconnected and economically influence each other,[164] the subsequent analysis will primarily concentrate on recorded music. This focus is justified by the central role recorded music holds as the industry's *'primary revenue source'* and its influential position in shaping consumer listening behaviours and market outcomes. Recorded music is the primary driver of

[163] Hesmondhalgh, D., 'The Cultural Industries', 4th ed. (2019), SAGE

[164] Nordgård, D., 'Assessing Music Streaming and Industry Disruptions', in Meil, P., and Kirov, V. (eds.), Policy Implications of Virtual Work. Dynamics of Virtual Work (2017), Palgrave Macmillan, Cham, available at: https://doi.org/10.1007/978-3-319-52057-5_6

revenue through streaming platforms, shaping user engagement and influencing industry dynamics through algorithmic curation, playlisting strategies, and social media virality.[165]

Music streaming services (MSS)[166] have become important players in the business of music distribution. MSS have prioritised convenient access over ownership[167] and by the end of 2024, they accounted for nearly 70% of global recorded music revenues.[168] Some of the most notable MSS are **European-origin services**: Spotify (Sweden and Luxembourg), Deezer (France), SoundCloud (Germany), and Tidal (Norway).[169] Out of all MSS, Spotify emerges as the clear global leader, with 226 million subscribers (31.7% market share) as of Q3 2023.[170] The second-largest by subscribers is China's Tencent Music (TME) with 102.7 million subscribers (14.4%), while Apple Music ranks third globally at 89.8 million subscribers (12.6%). Amazon Music follows with 78.9 million subscribers (11.1%), while YouTube Music accounts for 69.1 million subscribers (9.7%). Collectively, these top five services collectively control roughly 80% of the world's music subscription base.

Within the EU, Spotify is by far the dominant player, with a 56% market share of Europe's music streaming market – more than double its nearest competitor.[171] This means Spotify alone serves over half of all EU streaming subscribers. While pan-European trends show Spotify on top, market share can vary by country. For example, Spotify dominates in Finland, while Amazon Music and Deezer present significant competition to Spotify in Austria and France, respectively.[172] Such

[165] Dredge, S., 17 of the main strategic moves made by Spotify in 2022. Music Ally (2022), available at: http://musically.com/2022/12/06/17-of-the-main-strategic-moves-made-by-spotify-in-2022/; European Commission Joint Research Centre, Popular streaming playlists can boost a song's revenue by up to $163k, available at: https://phys.org/news/2018-06-popular-streaming-playlists-boost-song.html; Hesmondhalgh, D., Valverde, R. C., Kaye, D. B. V., & Li, Z., The impact of algorithmically driven recommendation systems on music consumption and production - A literature review. UK Centre for Data Ethics and Innovation Reports (2023), available at: https://www.gov.uk/government/publications/research-into-the-impact-of-streaming-services-algorithms-on-music-consumption/the-impact-of-algorithmically-driven-recommendation-systems-on-music-consumption-and-production-a-literature-review

[166] They are also commonly referred to as music streaming platforms (MSPs) or Digital Service Providers (DSPs)

[167] Eriksson, M., Fleischer, R., Johansson, A., Snickars, P., & Vonderau, P. (2019). Spotify teardown: Inside the black box of streaming music. MIT Press.

[168] IFPI, IFPI Global Music Report 2025.

[169] de-Miguel-Molina, B., Boix-Doménech, R., & Rausell-Köster, P., The impact of the music industry in Europe and the business models involved in its value chain, In B. de-Miguel-Molina, V. Santamarina-Campos, M. de-Miguel-Molina, & R. Boix-Doménech (Eds.), Music as intangible cultural heritage. SpringerBriefs in economics. Springer, Cham (2021), available at: https://doi.org/10.1007/978-3-030-76882-9_2

[170] Dredge, S., Music streaming subscribers reached 713.4m in Q3 2023, Music Ally (2024), available at: https://musically.com/2024/02/09/music-streaming-subscribers-reached-713-4m-in-q3-2023/

[171] The App Store, Spotify, and Europe's thriving digital music market, Apple Newsroom (2024)., available at: https://www.apple.com/newsroom/2024/03/the-app-store-spotify-and-europes-thriving-digital-music-market/

[172] Ibid.

differences in market share are partly influenced by local preferences, with the following highlighting a few key EU markets:

- **Germany** presents a distinctive streaming landscape and as of 2023, the leading services by user adoption in Germany are Spotify and Amazon. Survey data show Spotify is used by roughly 40% of German consumers, followed by Amazon Music (25%) and YouTube Music (25%), then Apple Music (13%).[173] This indicates Spotify is #1, but Amazon (boosted by Amazon's Prime bundle) is a formidable #2 in Germany – notably attracting an older demographic (Prime users) and catering to genres like traditional Schlager, popular with that particular audience.[174]
- **France** stands out for the presence of a major local competitor, Deezer. As of 2023, Spotify and Deezer are the top two platforms in France, respectively, which makes France one of the few countries where a domestic service is among the leaders. Deezer, headquartered in Paris, holds about 29% of the French streaming market by subscribers.[175] Meanwhile, Spotify holds 34% of the market share. Alongside Deezer's market share, this means that the two European services combined control well over half of the French market. Apple Music and YouTube Music also operate in France, but with smaller market shares. Their shares are not publicly disclosed, but industry observers note that France's market is essentially "Spotify vs. Deezer" in many respects.[176]

As for smaller European markets, there are some contrasts with Europe's largest music markets. In larger EU markets like Germany, France, Italy, and Spain, there tends to be more competition or the presence of multiple players, whereas in smaller markets, one platform often captures an outsized share. For example, around 60% of users in a smaller market like Finland stream music on Spotify, which makes it the most dominant music streaming service.[177]

4.1.2. Market saturation and its impact on discoverability

Furthermore, to understand the dynamics of discoverability within the recorded music industry, it is crucial to address the **high volume of music content driven by digital democratisation**. In today's competitive music streaming landscape, discoverability is a critical factor in an artist's success. While independent

[173] 5 things to know on German digital music market | Believe. (n.d.), available at: https://www.believe.com/newsroom/5-things-about-german-music-market-thorsten-freese

[174] Ibid.

[175] Pomian-Bonnemaison, R., 'Deezer entre en Bourse: 5 chiffres clés sur le concurrent français de Spotify' (2022), Presse-citron, available at: https://www.presse-citron.net/deezer-entre-en-bourse-5-chiffres-cles-sur-le-concurrent-francais-de-spotify/

[176] Dalugdug, M., 'Spotify and Deezer Slam French Government's Plans to Introduce a "Music Streaming Tax" in the Market', Music Business Worldwide, (2023), available at: https://www.musicbusinessworldwide.com/spotify-and-deezer-slam-frances-government-plans-to-introduce-a-music-streaming-tax-in-the-market12/

[177] Suomalaiset striimaavat yhä enemmän musiikkia, mutta yksi seikka erottaa meidät muista pohjoismaista', Voice.fi, (2024), available at: https://www.voice.fi/musiikki/a-231546

musicians now benefit from lowered entry barriers—producing quality recordings affordably and directly marketing through social media—this ease of access has led to an overwhelming volume of content. With millions of tracks available on MSS, artists and their teams face the challenge of standing out and reaching their target audiences. For example, nearly 184 million tracks were registered with streaming services in 2023, of which almost 80 million tracks received fewer than 10 streams.[178]

Notably, **a significant portion of newly registered tracks are now AI-generated**. Deezer reported that by mid-April 2025, over 18% of all uploaded content was fully AI-generated, as they amounted to more than 20,000 fully AI-generated tracks on a daily basis.[179] By mid-November, it received over 50,000 fully AI-generated tracks daily.[180]This figure nearly doubled in three months, where it marked a sharp increase from 10% in January 2025.

The immense volume of music tracks, amplified by AI-generated content, significantly increases competition, which makes it increasingly difficult for artists to break through to a substantial audience online.[181]

Moreover, the economic implications of the market saturation of the recorded music industry are critical. Streaming revenues are considered by some to be notoriously low,[182] which poses challenges for artists' financial sustainability. In a parallel initiative that highlights related issues, streaming service Qobuz recently disclosed its payment rates to artists. The service highlighted that this form of transparency is a necessary first step toward promoting a fairer and more sustainable streaming model, as it reflects growing attention to the importance of ensuring that artists, particularly at the early stages of their careers, receive fairer compensation.[183] With this reflection and broader issues of oversaturation in mind, it becomes evident that ensuring artists' economic viability and their ability to break through to a substantial audience online are critical yet distinct challenges facing today's recorded music industry.

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[178] Luminate, 'Luminate 2023 Year-End Music Report' (2023), available at: https://luminatedata.com/reports/yearend-music-industry-report/

[179] Wendel, J., 'Deezer Reveals 18% of All New Music Uploaded to Streaming Is Fully AI-Generated', Deezer Newsroom, (2025), available at: https://newsroom-deezer.com/2025/04/deezer-reveals-18-of-all-new-music-uploaded-to-streaming-is-fully-ai-generated/

[180] Stassen, M., '50,000 AI tracks flood Deezer daily – as study shows 97% of listeners can't tell the difference between human-made vs. Fully AI-generated music' (2025), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/50000-ai-tracks-flood-deezer-daily-as-study-shows-97-of-listeners-cant-tell-the-difference-between-human-made-vs-fully-ai-generated-music/

[181] Ingham, T., '100,000 Tracks Being Uploaded to Spotify and Other Services Daily', Music Business Worldwide, (2022), available at: https://www.musicbusinessworldwide.com/its-happened-100000-tracks-are-now-being-uploaded

[182] Wiratama, V., Ranaivoson, H., Afilipoaie, A., & Henten, A. H. (2024). From value networks for recorded music to music ecosystems.

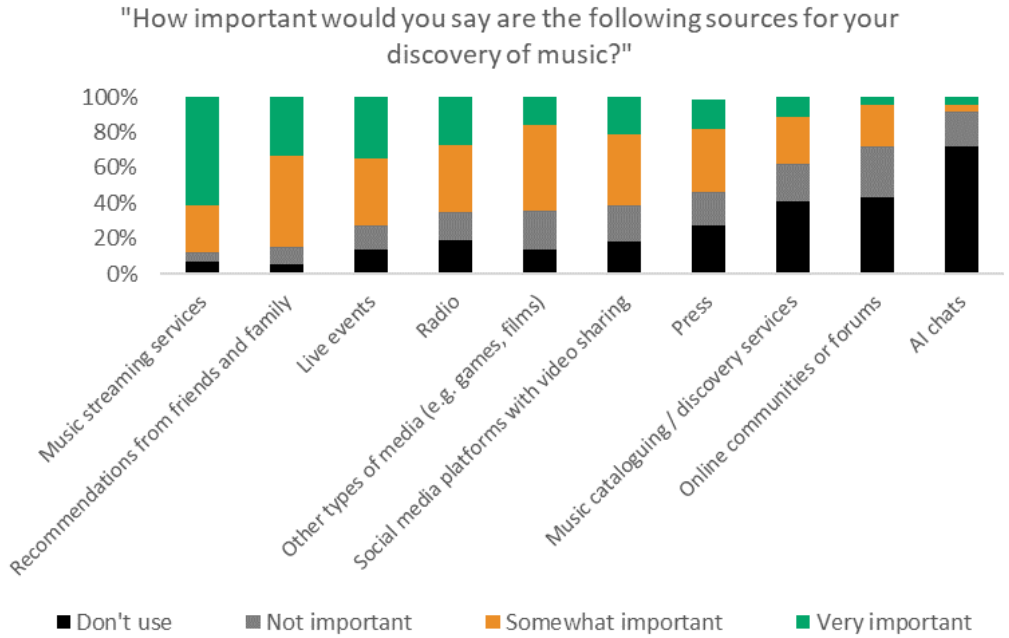
[183] G, A., 'Qobuz Just Exposed the Streaming Secret No Other Platform Wants You to Know', (2025), Headphonesty, available at: https://www.headphonesty.com/2025/03/qobuz-exposed-streaming-secret/

Moreover, the recorded music industry's oligopolistic structure—predominantly dominated by Universal Music Group, Sony Music Entertainment, and Warner Music Group—is particularly influential in shaping the dynamics of discoverability. The substantial market power of these companies enables strategic dominance over distribution channels, significantly affecting what music gains visibility. Recent analyses indicate independent labels cannot compete against the 'Big Three' major record companies, which control approximately 85% of all U.S. digital music royalties, restricting independent artists' visibility and profitability. This concentration of power creates "strategic choke points" within the industry, allowing major labels to greatly influence promotional priorities and playlist inclusions.[184]

4.1.3. Online music discoverability pathways

As for the discoverability pathways, there are identified pathways: directly through streaming services and their editorial or algorithm-driven recommendations or through social recommendations. As many as 89% of the consumer survey responders mentioned MSS as important or very important for discovery. The other important pathways were recommendations from friends and family (important for 85%) and live events such as concerts (73%). Figure 2 shows the importance of specific discovery pathways among the responders.

Figure 2 Importance of music discovery sources among Consumer survey responders



Source: Results from the consumer survey (2025).

[184] Cirisano, T., 'Music Discovery in 2023 Is About the Journey, Not the Moment' (2023, January 12), MIDiA Research, available at: https://www.midiaresearch.com/blog/music-discovery-in-2023-is-about-the-journey-not-the-moment; Rose, M., 'Streaming in the Dark: Where Music Listeners' Money Goes—and Doesn't' (2023), Public Knowledge, available at: https://publicknowledge.org/wp-content/uploads/2023/03/Streaming-in-the-Dark_Meredith-Rose_Public-Knowledge_March-2023.pdf

MSS utilise algorithm-driven recommender systems to match users with songs or playlists by optimising specific metrics or a combination of metrics, significantly influencing content visibility.[185] MSS also include expert curation in the forms of editorial playlists that have been found influential on artists. Interestingly, editorial recommendations at service-curated playlists have been found to benefit female artists and independent labels. While many of the consumer survey responders say they still manually search for specific music (30% sometimes and 68% often) or rely on their own playlists (24% sometimes and 68% often), both editorial and automated playlists are used at least sometimes, with only 15% responders declaring never using any playlists and 11% not knowing whether they are automated or curated by experts (similar shares of 55% and 58% declare using respectively editorial and automated ones).

Conversely, **social recommendation pathways** emphasise interpersonal interactions, community building and shared musical experiences. For instance, pathways through collaborative playlists by users typically exhibit higher genre diversity than algorithmically generated playlists, which subsequently demonstrates the value of social interaction in promoting diverse musical discovery.[186] Furthermore, social media platforms like Instagram and TikTok have become increasingly critical for initial visibility towards musicians, with the purpose of driving user engagement and community building despite the competitive nature of content saturation and algorithmic biases that favour established musicians.[187]

Live events such as concerts and music festivals, have also been known to drive discovery and to interact with streaming. In 2000s, as recording revenues declined, artists have largely shifted to making money through live events.[188] Concerts have been shown to increase the probabilities of artists being listened to and to heavily increase their stream counts (by as much as 40-50% directly after a concert).[189][190] Interestingly, the positive effects of playing at a music

[185] Melchiorre, A. B., Rekabsaz, N., Parada-Cabaleiro, E., Brandl, S., Lesota, O., and Schedl, M., 'Investigating Gender Fairness of Recommendation Algorithms in the Music Domain' (2021), Information Processing & Management, 58(5): 1–27, available at: https://doi.org/10.1016/j.ipm.2021.102666; Schedl, M., Knees, P., McFee, B., and Bogdanov, D., 'Music Recommendation Systems: Techniques, Use Cases, and Challenges' (2022), in Ricci, F., Rokach, L., and Shapira, B. (eds.), Recommender Systems Handbook, pp. 927–971, Springer US, available at: https://doi.org/10.1007/978-1-0716-2197-4_24

[186] Park, S. Y., and Kaneshiro, B., 'Social Music Curation That Works: Insights from Successful Collaborative Playlists' (2021), Proceedings of the ACM on Human-Computer Interaction, 5(CSCW1): 1–27, available at: https://doi.org/10.1145/3449191

[187] Spinelli, L., Lau, J., Pritchard, L., and Lee, J. H., 'Influences on the Social Practices Surrounding Commercial Music Services: A Model for Rich Interactions' (2018), in Gómez, E., Hu, X., Humphrey, E., and Benetos, E. (eds.), Proceedings of the 19th International Society for Music Information Retrieval Conference, pp. 671–677, available at: http://ismir2018.ircam.fr/doc/pdfs/52_Paper.pdf

[188] Mortimer, J.H., Nosko, C. and Sorensen, A. Supply responses to digital distribution: Recorded music and live performances. Information Economics and Policy 24 (2012) 3-14.

[189] Kaiser, F. and Peukert, C. Get Rich or Die Tryin': Concerts and the Digitization of Recorded Music. Academy of Management Annual Meeting Proeedings (2024), vol. 2024(1).

[190] Maasø, A. Music Streaming, Festivals, and the Eventization of Music. Popular Music and Society, Vol. 41, 2018(2), pp. 154-175.

festival might be strongest for the less popular, local artists, as well as for female artists whose exposure provides a larger boost to their streaming success.[191][192] Conversely, streaming (e.g. access to artists via a platform) has also been shown to boost concert-going[193], with earlier studies finding similar effects for purchasing recorded music[194], or even pirating it.[195][196] Notably, in an interesting case, classical music concerts in Australia have been shown to provide more diverse music opportunities than digital playlists or radio.[197] All in all, concerts present a clear discovery pathway with strong links to streaming success, even though some recent studies show that the positive effects might turn to slightly negative when the period directly after a concert ends, possibly due to some degree of oversaturation with particular artist's music.[198] Still, it is unsurprising that the responders of the consumer survey pointed to live events as the third most important discovery pathway.

4.1.4. Alternative modes of discovery

Recent years have seen an **increase in the number of alternative online (or partially online) modes of music discovery**. Music can get exposure through video games, movies or short-form video content now prevalent across several platforms. Music recognition tools can then be used to identify respective artists and tracks, thus culminating with a new discovery.

The most prominent of such tools is currently Shazam. Shazam is a tool that helps listeners to discover songs that they cannot name by analysing audio samples and matching them against a track database. By providing integration with other music streaming platforms, Shazam facilitates incorporation of new songs into listeners' music libraries. It also provides playlists of trending songs or songs picked specifically for a user. A recent study highlights some of the ways Shazam facilitates discovery.[199] The study found that **when songs are featured in Netflix movies they are more likely to get discovered via the Shazam**

[191] Danielsen, A. and Kjus, Y. The mediated festival: Live music as trigger of streaming and social media engagement. Convergence: The International Journal of Research into New Media Technologies, 2017. 25(4), 1-21.

[192] Montoro-Pons, J.D., Caballer-Tarazona, M. and Cuadrado-Garcia, M. Assessing complementarities between live performances and YouTube video streaming. Empirical Economics (2023), vol. 65, pp. 2953-2978.

[193] Christensen, F. Streaming Stimulates the Live Concert Industry: Evidence from YouTube. International Journal of Industrial Organization (2022), Vol. 85, 102873.

[194] Montoro-Pons, J.D. and Cuadrado-Garcia, M. Live and prerecorded popular music consumption. Journal of Cultural Economis (2011), 35:19-48.

[195] ibid.

[196] Mortimer, J.H., Nosko, C. and Sorensen, A. Supply responses to digital distribution: Recorded music and live performances. Information Economics and Policy 24 (2012) 3-14.

[197] Chambers, S. The Curation of Music Discovery: The Presentation of Unfamiliar Classical Music on Radio, Digital Playlists and Concert Programmes. Empirical Studies of the Arts 2023, vol. 41(1), pp. 304-326.

[198] Thompson, D. Concert-Induced Streaming: Estimates of the Dynamic Effect of Concert Demand on Recorded Music Consumption. (2025). SSRN 5141571.

[199] Aguiar, L., & Chen, Z., Let that Sync in: The Effect of Music Reuse on Product Discovery, CESifo Working Papers. 11249 2024, (2024).

recognition functions. This exposure effect can also be seen in Spotify charts. In a prominent example, the 4th season of a highly popular Netflix series Stranger Things, two hits from the 1980s (by Kate Bush and Metallica) made their sudden come back (or even arrival) to music charts.

Another study recently presented at the International Association of Arts and Cultural Management (AIMAC)[200] shows that **songs included in video games receive substantial popularity gains in streaming**. While the study does not control for the intermediation by Shazam, it is likely another context - similar to Netflix movies - in which it can facilitate discovery. Indeed, among the responders of the Consumer survey, around 65% indicated other types of media like film, TV or games as somewhat or very important modes of music discovery. Notably though, only 39% of the responders indicated music discovery services such as Last.fm or Shazam as at least somewhat important.

Of platforms presenting short-form video content, TikTok is a social media platform that received most attention (other examples currently include YouTube and Instagram). Although TikTok's focus is not focused on music perse, it facilitates music discovery through user-generated content and viral trends or challenges, as the videos with a potential to gain widespread popularity often feature snippets or remixes of music tracks. Artists can leverage the promotional opportunities on TikTok by preparing content tailored to the platform's features, potentially reaching broader audiences. Notably, one study[201] considers the impact of TikTok on music promotion, finding positive effects for music that would otherwise receive little to no promotional support. The authors thus highlight the role of TikTok in music discovery, with simultaneous substitution effects for songs with otherwise high visibility.

Among the Consumer survey responders, 61% indicated social media platforms with video sharing as at least somewhat important for music discovery. Interestingly, only 10% said they often look for music recommendations at such platforms (and 49% indicated they do so sometimes), while as many as 26% indicated they unintentionally discover new relevant music on such platforms (and 65% do sometimes). This suggests that **platforms** with viral short-form **videos might not be used primarily as music platforms, but they can carry significant side effects on music discovery.** All in all the analyses of alternative modes of discovery data show contrasting patterns of diversity in song origin.

Interestingly, the answers of the consumer survey respondents seem more favourable in terms of the representation of EU music, or at least more nuanced. 62% of the responders agreed that they discover more music in such platforms,

[200] The presentation bore the title "I know that song, it's from FIFA 2023 the effectiveness of song placement on video games."

[201] Winkler, D., Hotz-Behofsits, C., Wlomert, N., Papies, D., & Liaukonyte, J., The Impact of Social Media on Music Demand: Evidence from a Quasi-Natural Experiment, (2024), available at: https://econpapers.repec.org/paper/arxpapers/2405.14999.htm

and 33% that they discover more music from their home country or in native language (27% and 30% disagreed, respectively). 36% agreed that they discover more music from European countries (27% disagreed) and 42% that from more diverse artist nationalities (24% disagreed). Finally, the answers were split for the issue of more diverse lyrics languages (31% agreed and 32% disagreed). Surprisingly, these findings are comparable with those for similar questions asked about discoverability through MSS, despite a starkly different representation of artist nationalities in the top charts. One possible explanation could be that much of the consumption at platforms such as TikTok occurs beyond the very top charts (at the so-called long tails), and that this consumption tends to be more diverse than the globally viral videos.

The respondents to the consumer survey were also asked about other alternative digital modes of discovery. However, these seem relatively unimportant. Only 28% marked online communities or forums as important (with 24% marking only as somewhat important). Moreover, 72% of the responders said they did not use AI chats, while 20% marked them as not important for music discovery. It remains to be seen whether this changes in the coming years.

Ultimately, the two primary discoverability pathways highlight inherent tensions between algorithmic efficiency and social inclusivity, which consequently raises questions about how curation practices and algorithmic systems shape listener behaviours, the challenges musicians face in achieving equitable visibility, and the opportunities to foster discoverability and cross-border accessibility of diverse European music content in the digital environment. The following sections of this report will systematically address each of these key issues, and analyse consumption patterns that reshape the landscape of music discoverability.

4.2. Trends and consumption patterns

Key findings:

- In EU markets, domestic artists increasingly top national charts. This "glocalisation" trend boosts local stars. However, cross-border listening in other EU languages, and more generally intra-EU circulation remains limited (with an average of 14% non-national European songs in MSS examined top charts).
- Male artists, songwriters, and producers remain dominant across EU charts, though some gains for women are seen in late years. Metadata gaps (e.g. missing pronoun data) obscure full measurement.
- National charts show a strong rise of genres such as hip hop (including rap) in local languages, alongside global influences like Afrobeats or EDM in specific EU markets. Yet pop and anglophone hip-hop remain the overall chart leaders.
- Superstar artists still dominate top charts across platforms but their share is declining against that of mainstream and mid-level artists. Undiscovered artists remain largely absent.
- Younger generations (Gen Z/Alpha) are highly engaged with streaming, open to global music, and more active in discovering new genres compared to older listeners.

Recent developments in European music consumption patterns highlight **significant shifts towards greater diversity in music listening and discovery**, although these trends are nuanced and include certain persistent challenges. This section addresses diversification in national top charts in terms of artist origin, gender, genres, and career stage, to critically examine both the positive implications and limitations for music discoverability. It also reviews the changing listening habits among younger audiences. Prior to examining the specific trends and consumption patterns, the data employed in the analyses and its limitations are outlined.

4.2.1. Outline of data and diversity measures

The analyses undertaken specifically for this report provide **a data-driven exploration of music consumption patterns** across four major platforms, **examining how diversity manifests in users' listening behaviour and in platform content exposure**. Data cover the top charts of these four MSS and are obtained from Chartmetric, a music-focused data-aggregating platform.

The selection captures leading services from both the EU and the US, maintains methodological consistency across platforms, and ensures the analysis is not platform-specific, allowing for more generalised insights into consumption

patterns. However, it is worth considering that top charts represent only a small fraction of total available tracks, meaning that numerous songs – especially from emerging or independent creators – remain outside this dataset. **Consequently, conclusions drawn from chart-based analysis should be interpreted as reflecting mainstream trends rather than the full spectrum of musical diversity present on the investigated streaming platforms.** For a critical review and details on the process of choosing this data source and for a discussion of alternatives, see Annex 4.

The diversity of music consumption and discovery is assessed using top charts, examining the following characteristics:

- artist origin,
- artist pronouns,
- song genre,
- artist career stage.

Artist origin: Music streaming services do not provide country-level identification of songs or artists. To address this gap, music originating from the European Union is identified using three external measures: Chartmetric's indicator of artist nationality, ISRC codes, and lyrics language. An ISRC (International Standard Recoding Code) is a unique and permanent identifier of sound recordings and music videos that also embeds information indicating the country where the recording was registered[202]. A song is labelled as national if its artist's nationality, ISRC code, or lyrics correspond to the country associated with the charts. Songs originating from another EU country are categorised as EU non-national, while those neither national nor linked to the EU are labelled non-EU. Each proxy of a song's origin is derived separately.

Pronouns: Pronoun data are obtained from Chartmetric's Make Music Equal database, which records artists' self-declared pronouns. As the dataset's creators refrain from inferring gender from pronouns, the same approach is applied in this analysis. Pronouns are classified *as he/him*, *she/her*, and *other*. The label *group* refers to bands, while *unknown* denotes missing or undefined data.

Genre: The detailed subgenres provided by the MSS are aggregated into 19 broad categories: Alternative, Blues, Children's Music, Classical, Country, Dance, Electronic, Hip-Hop/Rap, Holiday, Inspirational (Christian & Gospel), Jazz, Latino, New Age, Pop, R&B/Soul, Reggae, Rock, Folk, and Soundtrack. The subgenres are mapped to these broader categories using an automated approach based on embeddings.

Career stage: Artists' career stage is obtained from Chartmetric. Six career stage levels depict advancement in an artist's visibility and success in the music

[202] For more information, please see: https://isrc.ifpi.org/

industry: undiscovered, developing, mid-level, mainstream, superstar, and legendary. For songs featuring multiple contributing artists, the career stage of the highest-ranked artist is used to ensure the analysis focuses on the most influential contributor to the track's popularity.

Full details on the construction of these measures, their coverage and limitations, and related considerations are provided in Annex 4.

This quantitative analysis has faced several limitations and challenges. Firstly, the time and country coverage vary between the investigated platforms. Secondly, due to the lack of fully reliable data on artists' nationality, three proxies of origin are applied to the top charts data and compared. Thirdly, data on artists' pronouns presents significant shares of missing information. Finally, data on songs' genre is available only for two platforms. For more detailed information on the data sources, data collection process, and data coverage, go to Annex 4.

4.2.2. The rise of local content and linguistic diversity

Concerning the diversity of performers' origins, **music charts across Europe reveal a trend toward greater diversification, with local artists increasingly featured at the top**. With the increasing prominence of domestic artists in European music charts, this trend exemplifies 'glocalisation'. In the context of music streaming, glocalisation refers to a phenomenon where a country sees an absolute and relative increase in the domestic share of their top ten songs and artists, as it reflects the growth of domestic identity in the local music market despite the widespread use of global streaming services.[203] Rather than erasing local differences, the globally accessible streaming environment allows in many national markets to see their domestic artists thrive. For instance, in 2023, all top 10 year-end tracks in Greece and Hungary were by domestic artists, while Denmark, Finland, Sweden, Croatia, and Italy each had 9 out of 10 tracks from local performers, with only one international track appearing in each of these markets.[204]

Similar trends are observed in major markets. In Germany, eight of the ten most-streamed artists in 2023 were German, capturing 86% of total streams among the top ten acts.[205] Likewise, France, Italy, and Sweden each had domestic artists comprising at least half of their top charts, reflecting a broader European shift towards local content. Even smaller markets, such as Bulgaria, Poland, and the

[203] Page, W., and Riva, C. D., '"Glocalisation" of Music Streaming Within and Across Europe (EIQ Paper 182)' (2023), London School of Economics and Political Science (LSE), European Institute, available at: https://hdl.handle.net/10419/303465

[204] Tencer, D., 'Local Artists Absolutely Dominate EU Charts, but Europe Falling Behind on Music Exports: IFPI' (2024), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/local-artists-absolutely-dominate-eu-charts-but-europe-falling-behind-on-music-exports-ifpi/

[205] Music Business Worldwide, 'Big European Countries Are the Winners in the Latest Music "Glocalisation" Trends' (2024), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/glocalisation-redux-big-european-countries-are-the-winners-in-the-latest-glocalisation-trends/

Baltics, have witnessed notable streaming revenue growth driven by local artists, including Bulgaria's impressive 44% year-on-year increase.[206]

Crucially, this phenomenon of glocalisation does not mean that audiences in Europe isolate themselves from global culture. Rather, they embrace global genres through local voices. For instance, in 2022, the top 10 acts in Poland were Polish, and the top 40 were almost exclusively Polish – yet these acts performed hip-hop, a genre commonly recognised as American.[207] In other words, European artists increasingly create music in local languages or with local roots within popular global genres and successfully find large domestic audiences. Consequently, domestic genres such as Italian or Polish rap coexist and compete effectively alongside international pop imports.[208] However, Europe has recently produced fewer global hits, with David Guetta being the only EU artist to achieve a Top 10 single outside the EU.[209]

In terms of linguistic diversity, IFPI's consumer surveys indicate increased consumption of music in national languages across various European countries. Consumers in Spain reported spending more than half (52.4%) of their total listening time with Spanish-language music, which marked an increase of 0.5 percentage points from the previous year. Similar upward trends were observed in France (49.7% for music in French), Germany (32.1% for music in German) and Sweden (31.1% for music in Swedish).[210]

The analysis of the presence of European music in the top charts over the 2017-2023 period indicates that **European songs comprise an average of 38% of all chart entries**. However, the popularity of European songs in the top charts across EU countries is largely **driven by national tracks (24%** on average**)**, as non-national European songs consistently hold the smallest shares in the top charts across all the investigated platforms (**14%** on average). This suggests a relatively **low level of intra-European music circulation**.

Over time, **national songs have increasingly displaced non-EU songs** on three of the four investigated streaming services, indicating a shift towards national music. The share of non-national EU songs remains relatively stable over time. A closer look at the consumption trends of national songs across EU

[206] Tencer, D., 'Local Artists Absolutely Dominate EU Charts, but Europe Falling Behind on Music Exports: IFPI' (2024), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/local-artists-absolutely-dominate-eu-charts-but-europe-falling-behind-on-music-exports-ifpi/

[207] Stassen, M., 'Italy's Recorded Music Revenues Grew 14.2% in H1, with 19 of the Top 20 Best-Selling Albums All by Local Acts' (2023), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/italys-recorded-music-revenues-grew-14-2-in-h1-with-19-of-the-top-20-best-selling-albums-all-by-local-acts/

[208] Ibid.

[209] Tencer, D., 'Local Artists Absolutely Dominate EU Charts, but Europe Falling Behind on Music Exports: IFPI' (2024), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/local-artists-absolutely-dominate-eu-charts-but-europe-falling-behind-on-music-exports-ifpi/

[210] IFPI, 'Engaging with Music 2022' (2022), available at: https://www.ifpi.org/wp-content/uploads/2022/11/Engaging-with-Music-2022_full-report-1.pdf

countries' top charts, however, reveal distinct temporal patterns. Firstly, certain markets consistently exhibit a high share of national songs. Secondly, some countries consistently show low shares of national songs in the top charts; in such cases, non-national European content plays a more significant role in music consumption. Thirdly, there are markets where national songs gain popularity over time, and markets showing decline in the popularity of national songs. Although the exact causes of these shifts remain uncertain, they may be linked to broader changes in the music industry, including the emergence of streaming services and new discovery pathways (e.g. TikTok), which could have influenced aggregate consumption patterns. Furthermore, the extent to which MSS maintain in-country field offices may also shape these trends, as the regionalisation of the offices can lead to inability to cater to the specific characteristics of individual markets.

As the self-reported measure of artists' nationality poses some challenges (see Annex 4, Identifying European songs), national songs on top charts are also identified using ISRC codes and lyrics. The analysis of differences between these three measures (artist nationality, ISRC code, and lyrics) reveals distinct patterns. For example, trends in national music consumption across all three measures can remain largely aligned, suggesting that artists with growing audiences in a certain country often create music in its national language and register it domestically. In such cases, any one of the three measures offers a reliable proxy for local content. In contrast, consumption can display noticeable and consistent differences between the measures, especially with regard to the language of the lyrics. Intuitively, the measure based on lyrics shows that the share of songs identified as national is significantly higher in countries where the official language is spoken in more than one country. This suggests that **language familiarity is a strong driver of music consumption**, meaning that audiences regularly engage with songs in their own language even when the artists themselves are not nationals, or the works are not registered domestically.Concurrently, the lyrics measure tends to overstate local content if the aim is to capture strictly national origin, reflecting instead a broader concept of cultural proximity. Finally, in certain markets, the measures based on artist nationality and lyrics show a sharp increase across the platforms, which is not equally mirrored by the ISRC measure. This may suggest that artists who create in their national language are increasingly listened to, while not necessarily registering their songs in their country of origin – leading the ISRC measure to undercount them as local.

To sum up, in some contexts, such as predominantly single-language markets, the three measures converge. In shared-language markets, lyrics systematically overestimate local content, while in markets where domestic music is frequently registered abroad, ISRC underestimates it. **Hence, there is a pressing need to collect reliable data on artists' nationality to correctly identify European songs.**

Rising linguistic diversity is also evident on most analysed streaming services. The temporal analysis of the share of songs in local versus English

language on the top charts of the MSS across the pooled sample of EU countries suggests that various MSS have seen a large increase in the consumption of music in local languages, at the clear expense of songs in English.

Concurrently, across the EU, music in languages other than native or English is rarely listened to. The Consumer survey considers this aspect with more detail. Almost all responders reported it is very likely for them to listen to music in English (92%) and somewhat (25%) or very (65%) likely for music in their native language. However, only 38% indicated as very likely to listen to music in other European languages, 49% as somewhat likely and with 13% indicating it not at all likely. Of the latter, more than half (58%) said they just don't encounter such music, while 39-40% said such music is not recommended to them and that other music (in English or in native language) is more easily available. These answers highlight the barriers for international recognition for artists representing their local languages, and the limited possibilities for artists in smaller markets.

4.2.3. Uneven gender representation

Despite the notable progress in linguistic and transnational representation, **diversity in terms of gender remains markedly uneven across Europe's top charts**. For instance, a longitudinal study of Spain's top charts from between 2008 and 2020 shows male artists dominated at 77%.[211] This underrepresentation extends beyond performing artists, as it also affects songwriters and producers. In Germany, for instance, over 85% of the top 100 songs have been written by all-male songwriting teams, with this male dominance increasing from 86% in 2010 to 91% in 2019.[212] Furthermore, this issue is not confined to Germany or even Europe. On a global scale, gender disparities persist, with female composers accounting for only 12.7%, and an even lower figure of 2.8% for producers.[213]

Nevertheless, modest improvements have been recorded. Certain genres, such as pop and dance, have predominantly featured prominent female stars, including Dua Lipa and Rosalía, and by the early 2020s, Billboard's Year-End Hot 100 showed the share of female artists rising from 20% in 2020 to 35% in 2023.[214] Furthermore, when female artists break through, they often achieve high levels of success. For instance, Shakira frequently notched multiple top 50 hits in Spain

[211] Sánchez-Olmos, C., 'Gender Inequality in Spain's Official Music Charts: Neither Representation nor Success for Female Artists (2008–2020)' (2025), Journalism and Media, 6(1): 10, available at: https://doi.org/10.3390/journalmedia6010010

[212] MaLisa Stiftung, 'Gender in Music – Charts, Werke und Festivalbühnen' (2022), available at: https://www.malisastiftung.org/studien/gender-in-music-charts-werke-und-festivalbhnen

[213] Smith, S. L., Pieper, K., Hernandez, K., and Wheeler, S., 'Inclusion in the Recording Studio? Gender and Race/Ethnicity of Artists, Songwriters & Producers Across 1100 Popular Songs from 2012–2022' (2023), USC Annenberg Inclusion Initiative, available at: https://assets.uscannenberg.org/docs/aii-inclusion-recording-studio-20220331.pdf

[214] Janssen, F., Klaessens, E., de Loos, S., and Szigetvari, Z., 'Confronting Gender Inequality in the Music Industry: Reflections on the Personal Approach to Research' (2025, February 14), Culture Weekly, available at: https://culture-weekly.com/2025/02/14/confronting-gender-inequality-in-the-music-industry-reflections-on-the-personal-approach-to-research/

between 2008 and 2020, which outperformed the average success metrics of her male counterparts.[215]

The analysis confirms the predominance of artists identifying with *he/him* pronouns across all the analysed MSS. Within the overall pronoun distribution, which comprises *he/him, she/her, other, group*, and *unknown* categories, artists identifying with *he/him* pronouns account for an average of 44% across all years and platforms, while those using *she/her* pronouns account for an average of 19%. While *he/him* artists remain the largest group, **a declining trend** in the share is noticeable and accompanied by a **limited increase in the share of artists using *she/her* pronouns over the final two years of the analysed period** (2022-2023). The average share of artists using *other* pronouns remains consistently low (1.5%), while *groups* account for 14%. Notably, **the proportion of artists for whom pronoun information is *unknown* is high and has increased over time across all platforms** (from a minimum of 8% in 2017 to a maximum of 30% in 2023 in a pooled sample of all countries), highlighting significant gaps in metadata. For few countries, the share of unknown pronouns reaches up to approximately 60%. Without addressing these data gaps, any conclusions about pronouns distribution should be considered indicative rather than definitive. Nevertheless, in countries with relatively complete metadata and when groups are excluded, artists identifying with *he/him* pronouns continue to dominate the charts.

The share of missing pronoun data is linked to artist origin, with **national songs in many EU countries revealing more incomplete metadata**. As the majority of the analysed MSS have experienced growth in the consumption of national music, a lack of information on national artists may contribute to the rise in the total share of unknown pronouns over time. That limits the accuracy of the analysis. **Encouraging and supporting artists to voluntarily self-identify their pronouns – when they wish to do so – would help ensure reliable representation and enable more accurate monitoring of diversity across the EU.**

4.2.4. Genre diversification

Across the European Union member states, the top charts for recorded music have experienced **increased diversity due to the significant rise of local-language genres.** A genre like hip-hop (which includes, rap, and within rap, trap) have increasingly dominated national charts previously led by Anglo-American pop music. In Germany, for instance, the top charts have experienced a notable surge in the popularity of German-language rap, contributing to a new formula for driving hits and establishing German rappers as "the most successful artists in

[215] Sánchez-Olmos, C., 'Gender Inequality in Spain's Official Music Charts: Neither Representation nor Success for Female Artists (2008–2020)' (2025), Journalism and Media, 6(1): 10, available at: https://doi.org/10.3390/journalmedia6010010

the country".[216] Furthermore, whereas Germany's leading artists closely mirrored the UK and US charts around two decades ago, by 2022, the German Top 10 predominantly featured local acts performing genres such as Deutschrap and Schlager.[217]

Similarly, France has witnessed substantial growth in hip-hop's popularity. While French rap was minimally represented in 2012, with only one song appearing in France's Top 10, a similar chart in 2022 consisted of six French rap performers, including notable figures such as Ninho and PNL.[218]

As for other countries like Spain, Latin music, which frequently features collaborations between Spanish and Latin American artists, has increasingly dominated the top charts. In fact, the share of Spanish-speaking artists performing reggaeton, trap, and pop in Spain's Top 10 rose notably from 60% in 2012 to 90% in 2022.[219] Additionally, the diversification in Spain's top ten highlight linguistic connections rather than national origin, with domestic artists like Rosalía and Morad sharing the charts alongside Latin American performers.[220]

A global survey of 43,000 individuals across 26 countries revealed that listeners engage with more than eight different genres of music on average.[221] On a European level, this trend is corroborated by the increasing enthusiasm among audiences in Europe for genres that have a historical stronghold in other countries or regions. For instance, Afrobeats captured disproportionately high streaming shares in countries like Luxembourg, the Netherlands, France, and Portugal.[222] Similarly, electronic dance music achieved an outsized share of streams in several EU countries, including Slovakia, Croatia, and Hungary.[223]

The top charts of the two examined music streaming services show little to no change in the leading genres over the 2017–2023 period. Across all the investigated years, music consumption is dominated by two genres: **Hip-Hop/Rap and Pop.** Other consistently significant genres include Alternative, Rock, and R&B/Soul, yet their positions in ranks between the platforms differ.

[216] IFPI, 'IFPI Global Music Report 2021', (2021), available at: https://www.ifpi.org/ifpi-issues-annual-global-music-report-2021/

[217] Page, W., and Riva, C. D., '"Glocalisation" of Music Streaming Within and Across Europe (EIQ Paper 182)' (2023), London School of Economics and Political Science (LSE), European Institute, available at: https://hdl.handle.net/10419/303465

[218] Ibid.

[219] Ibid.

[220] Ibid.

[221] IFPI, 'Engaging With Music 2023', (2023), available at: https://www.ifpi.org/ifpis-global-study-finds-were-listening-to-more-music-in-more-ways-than-ever/

[222] Luminate, 'Luminate 2023 Year-End Music Report', (2024), available at: https://luminatedata.com/reports/yearend-music-industry-report-2023/

[223] Ibid.

Among the shifts, the most significant is the rise in the popularity of Rock and the decline of Dance and Latino genres on one of the platforms over time.

When broken down by artist origin, **Hip-Hop/Rap and Pop continue to lead across national, EU non-national, and non-EU songs**, with one exception where Dance ranks second among non-national European songs. However, these patterns reflect only the two platforms examined and may not capture the full diversity of the streaming market.

4.2.5. Career stage diversity

The dominance of *superstar* artists is significant and persistent across all investigated platforms, accounting for 45%-52% of entries in the top charts across European countries. However, the temporal analysis of career stage distribution indicates that the share of ***superstar* artists declines over time, concurrent** with **an increasing representation of *mainstream* and *mid-level* artists** (reaching up to 26% and 24% of chart entries, respectively). The shares of *undiscovered* and *legendary* artists remain low and stable (around 1-5%).

The analysis of songs' origin (based on artist nationality) indicates that a significant share of the most popular songs in the **advanced career stages (*superstar* and *legendary*) comes from non-European countries,** accounting for a combined 31-48%**.** In comparison, national and non-national European songs tend to concentrate among *mainstream*, *mid-level* and *developing* stages of artists' career. With respect to the distribution of songs' origin and career stages across European charts, five patterns can be identified. Firstly, the charts can be heavily dominated by songs from *superstar* artists, primarily originating in non-EU countries, although with a significant representation of national artists in this category. Concurrently, songs by non-national European artists are almost entirely absent across all career stages. Secondly, in some cases national songs dominate the *mainstream* career stage, with almost no representation of national songs in the *superstar* category. Thirdly, national artists can be consistently present across the three lowest career stages (*undiscovered*, *developing* and *mid-level*), with limited representation of songs from other European countries. Fourthly, some markets show charts dominated by non-national songs. Finally, one further pattern resembles the second one but presents a more even spread of national songs across career stages rather than a concentration in one category.

4.2.6. Changing listening habits among younger audiences and passive listening

Recent data indicate that **a large majority of young users in Europe rely on streaming services to listen to music**. In 2022, Eurostat reported that 89% of students in the EU used the internet to listen to or download music.[224] Industry surveys not only confirm this European trend globally but also highlight young listeners' willingness to pay by showing that 60% of 16–24-year-olds and 62% of 25–34-year-olds worldwide access music through paid subscriptions to streaming services.[225]

As for listening habits, data reveals that **Gen Z and Gen Alpha listeners discover new music at higher rates than older generations**. As one expert noted regarding this trend, younger people are actively seeking new musical forms to explore and engage with different cultures and perspectives,[226] whereas older listeners tend to stick more with the familiar. This proclivity to explore is translating into broader musical tastes for both generations of listeners who tend to explore a wide array of musical styles on streaming services. In fact, a report by IFPI reveals that 65% of 16–24-year-olds consider it important to access music from anywhere in the world, compared to an average of 57% across all age groups.[227]

Beyond young audiences, there is an overall tendency towards **a passive consumer behaviour, particularly evident through lean-back and background listening modes**. Lean-back listening, which is characterised by minimal user interaction and algorithm-driven experiences, significantly reduces opportunities for discovering new and culturally diverse music.[228] This is because the passive consumption mode typically relies on implicit user feedback, such as song completions or skips, which leads to experiences that users perceive as 'endless,' 'repetitive,' and often 'missing the mark'.[229] Similarly, background listening, wherein music serves primarily as ambient sound, limits active listener engagement and exacerbates discoverability issues by reducing exposure to new content. While existing literature highlights that users often experience

[224] Eurostat, 'Culture statistics – use of ICT for cultural purposes', available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Culture_statistics_-_use_of_ICT_for_cultural_purposesDid

[225] IFPI, 'Engaging With Music 2023', (11 December 2023), available at: https://www.ifpi.org/ifpis-global-study-finds-were-listening-to-more-music-in-more-ways-than-ever/

[226] Spotify, 'Nearly 2 Billion Music Discoveries Happen on Spotify Every Day—Here's What Listeners Are Finding', (20 July 2023), Spotify, available at: https://newsroom.spotify.com/2023-07-20/nearly-2-billion-music-discoveries-happen-on-spotify-every-day-heres-what-listeners-are-finding/

[227] IFPI, 'Engaging with Music 2022', (17 November 2022), available at: https://www.ifpi.org/wp-content/uploads/2022/11/Engaging-with-Music-2022_full-report-1.pdf

[228] Schedl M., Knees P., McFee B., and Bogdanov D., 'Music Recommendation Systems: Techniques, Use Cases, and Challenges', (2022), New York, NY, Springer US, available at: https://doi.org/10.1007/978-1-0716-2197-4_24

[229] Freeman S., Gibbs M., and Nansen B., 'Personalised But Impersonal: Listeners' Experiences of Algorithmic Curation on Music Streaming Services', (2023), available at: https://doi.org/10.1145/3544548.3581492

dissatisfaction from such passive, algorithmically dominated modes, perceiving them as impersonal rather than genuinely personalised,[230] the analysis carried out in the context of this study does not explicitly measure these subjective consumer impacts.

On the other hand, algorithmic playlists may continuously engage listeners through personalised recommendations. Spotify's Discover Weekly and Release Radar leverage AI to introduce lesser-known artists based on listener preferences and historical listening data, facilitating approximately 16 billion artist discoveries monthly.[231] Deezer's Flow similarly blends human curation and algorithmic recommendations, enhancing the visibility of niche artists and strategically positioning emerging musicians alongside user-preferred tracks through AI-driven serendipity.[232] Likewise, Apple Music's New Music Mix integrates emerging and independent musicians into listener-specific recommendations using historical user data, providing fresh and personalised content.[233]

[230] Ibid.

[231] Spotify, 'Amplifying Artist Input in Your Personalized Recommendations', (2020), Spotify, available at: https://newsroom.spotify.com/2020-11-02/amplifying-artist-input-in-your-personalized-recommendations/

[232] Deezer, 'Deezer takes Flow to the next level and makes it the perfect musical companion for every occasion', (2023), Deezer Newsroom, available at: https://newsroom-deezer.com/2023/07/deezer-takes-flow-to-the-next-level-and-makes-it-the-perfect-musical-companion-for-every-occasion/

[233] Deezer, 'Deezer takes Flow to the next level and makes it the perfect musical companion for every occasion', (2023), Deezer Newsroom, available at: https://newsroom-deezer.com/2023/07/deezer-takes-flow-to-the-next-level-and-makes-it-the-perfect-musical-companion-for-every-occasion/

4.3. Curation and algorithms

Key findings:

- All MSS use a mix of editorial and algorithmic playlists, which are central to music discovery (only 15% surveyed persons reported not using playlists). Placement in top playlists can yield millions of extra streams, shaping artist visibility and careers.
- Existing literature is split regarding whether playlist curation promotes or constraints diversity, numerous papers pointing to algorithmic recommendations risk of reinforcing popularity, mainstream and gender biases, while editorial playlists can provide more space for independent and female artists.
- Algorithms optimise for engagement but in some cases might reduce musical diversity (e.g. relative to human curation). Quantitative research conducted in this study points to recommender systems' potential ability to capture certain localness.
- Some human-curated playlists actively boost independent labels and women artists.
- 62% surveyed users say MSS algorithms help them to discover new music in general, but roughly 30% feel they discover more local, EU, or non-English language content—highlighting a possible gap between perceived and actual diversity.

The digitalisation of content has significantly transformed the landscape of music availability and discoverability. Scholarly findings underscore that by increasing the accessibility of diverse music content, digital platforms facilitate consumer exposure to previously hard-to-find or niche products.[234] Such increased availability is foundational to the discoverability of culturally diverse content, enhancing consumer welfare substantially.

4.3.1. Overview of curation and recommendation systems in MSS

Central to the discourse on discoverability are curated playlists and algorithmic recommendation systems. **Playlists on MSS significantly shape users' consumption habits, which influences both the diversity of music listened to and the discoverability of new artists and tracks**. Research demonstrates that inclusion in prominent editorial playlists substantially boosts song streams,

[234] Aguiar L., Reimers I., and Waldfogel J., 'Platforms and the transformation of the content industries', (2024), Journal of Economics & Management Strategy, available at: https://doi.org/10.1111/jems.12519; Datta H., Knox G., and Bronnenberg B.J., 'Changing Their Tune: How Consumers' Adoption of Online Streaming Affects Music Consumption and Discovery', (2018), Marketing Science, available at: https://doi.org/10.1287/mksc.2017.1051

with a top position yielding approximately 14 million additional streams.[235] However, not all playlists are editorial or purely human-curated, as several music streaming services heavily rely on algorithmic recommendation systems. When looking at six key MSS in Europe (i.e. Spotify, Apple Music, YouTube Music, Amazon Music, Deezer and Qobuz), one commonality is that **none rely purely on algorithms or purely on humans**: all mix some form of algorithmic personalisation with playlists and selections shaped by people, hence the widespread use of the "algotorial" terminology (i.e. mixing algorithmic and editorial curation). Standout practices include Amazon Music's strong reliance on AI-powered automation and the prevalence of human curation on Qobuz with expert editors and long-form reviews. Also noteworthy is the interaction between MSS and wider technological offerings, such as device and subscription bundles (e.g. Amazon in Germany and the UK) and YouTube Music's reliance on Google's personalisation infrastructure of YouTube's free platform in Europe.

4.3.2. Scholarly and stakeholder perspectives on current practices

Scholarly perspectives diverge regarding whether playlist curation promotes or constrains diversity. Some research has critiqued the algorithmic approach, linking it to reduced diversity in music consumption.[236] They argue that increased diversity often emerges from organic consumption, free from algorithmic influence. These systems might carry biases, often privileging mainstream and male musicians, which reinforces gender disparities and limits the discoverability of diverse musical genres and styles.[237] The dominance of global music trends, particularly those originating in major markets like the United States, heavily influences algorithmic recommendations and editorial selections.[238] A 2025 study shows that this dynamic results in a strong geographical concentration of visibility, with repertoire from a limited number of high-output, predominantly English-language territories benefiting most from algorithmic exposure.[239] According to the study, 65 % of surveyed music professionals report negative financial effects for artists with lower streaming volumes—artists who are more likely to be based in smaller national or regional markets—while 85 % express dissatisfaction with current platform distribution mechanisms, citing reduced discoverability of local

[235] Aguiar L. and Waldfogel J., 'Platforms, Power, and Promotion: Evidence from Spotify Playlists*', (2021), The Journal of Industrial Economics, available at: https://doi.org/10.1111/joie.12263

[236] Anderson A., Maystre L., Anderson I., Mehrotra R., and Lalmas M., 'Algorithmic Effects on the Diversity of Consumption on Spotify', (2020), available at: https://doi.org/10.1145/3366423.3380281

[237] Ferraro, A., Serra, X., and Bauer, C., 'What Is Fair? Exploring the Artists' Perspective on the Fairness of Music Streaming Platforms' (2021), in Ardito, C., Lanzilotti, R., Malizia, A., Petrie, H., Piccinno, A., Desolda, G., and Inkpen, K. (eds.), Human-Computer Interaction – INTERACT 2021, Vol. 12933, pp. 562–584, Springer International Publishing, available at: https://doi.org/10.1007/978-3-030-85616-8_33

[238] Hroch M. and Szczepanik P., 'Playlisting the periphery: Platform intermediaries and East-Central European music visibility in Spotify's geography', (2025), New Media & Society, available at: https://doi.org/10.1177/14614448251346200

[239] Association of Independent Music Publishers and Producers Bulgaria (ANMIP-BG), Impact Analysis of Spotify's 1,000-Stream Policy on Artist Revenue in South East Europe (2025), available at: https://www.anmip.com/spotify-impact-analysis

and culturally specific music. Additionally, other research has observed that recommendations made by the MSS consistently result in lower diversity than user-generated input playlists, suggesting a tendency towards homogeneity within algorithmically curated content.[240] Similarly, the Autorité de Régulation de la Communication Audiovisuelle et Numérique (ARCOM) notes a pronounced linguistic bias towards English in curated playlists.[241]

Conversely, a nuanced benefit has been highlighted, particularly for independent-label music and music by women. Some research indicates MSS playlists may purposefully support these groups against broader industry biases.[242] Others, on the contrary, show that collaborative filtering algorithms exhibit gender biases, particularly disadvantaging female artists on shorter recommendation lists.[243] Moreover, accuracy in these algorithms correlates negatively with fairness, which suggests a fundamental trade-off between effective recommendations and equitable representation.[244]

Stakeholder inputs reveal a mixed reception to existing platform practices concerning curation and algorithmic recommendations. There is recognition of the platforms' capacity to promote diverse content strategically, yet concerns persist regarding their potential homogenisation of taste and influence over artistic visibility. Within the European music streaming market, a clear tension arises between platforms' roles as facilitators of cultural diversity and gatekeepers with significant power over market dynamics.[245] For example the balance struck by some MSS between market influence and content diversity is seen as strategic. Recent research has speculated that Spotify may intentionally promote independent artists to strengthen its negotiating position against major labels.[246] Such strategies reflect broader industry dynamics where platforms not

[240] Baracskay I., Baracskay Iii D.J., Iqbal M., and Knijnenburg B.P., 'The Diversity of Music Recommender Systems', (2022), available at: https://doi.org/10.1145/3490100.3516474

[241] Autorité de régulation de la communication audiovisuelle et numérique (ARCOM), 'Écoute de la musique en streaming audio: Analyse et comparaison avec la radio', (2022), ARCOM, available at: https://www.arcom.fr/sites/default/files/2022-01/%C3%89coute%20de%20la%20musique%20en%20streaming%20audio%20-%20Analyse%20et%20comparaison%20avec%20la%20radio_0.pdf

[242] Aguiar L., Waldfogel J., and Waldfogel S., 'Playlisting favorites: Measuring platform bias in the music industry', (2021), International Journal of Industrial Organization, available at: https://doi.org/10.1016/j.ijindorg.2021.102765

[243] Melchiorre A.B., Rekabsaz N., Parada-Cabaleiro E., Brandl S., Lesota O., and Schedl M., 'Investigating gender fairness of recommendation algorithms in the music domain', (September 2021), Information Processing & Management, available at: https://doi.org/10.1016/j.ipm.2021.102666

[244] Ibid.

[245] Aguiar L. and Waldfogel J., 'Platforms, Power, and Promotion: Evidence from Spotify Playlists*', (2021), The Journal of Industrial Economics, available at: https://doi.org/10.1111/joie.12263; Autorité de régulation de la communication audiovisuelle et numérique (ARCOM), 'Écoute de la musique en streaming audio: Analyse et comparaison avec la radio', (2022), ARCOM, available at: https://www.arcom.fr/sites/default/files/2022-01/%C3%89coute%20de%20la%20musique%20en%20streaming%20audio%20-%20Analyse%20et%20comparaison%20avec%20la%20radio_0.pdf

[246] Aguiar L., Reimers I., and Waldfogel J., 'Platforms and the transformation of the content industries', (2024), Journal of Economics & Management Strategy, available at: https://doi.org/10.1111/jems.12519

only respond to user preferences but actively shape them for strategic and economic purposes.

All this reflects the fact that algorithmic recommendation systems, despite their apparent objectivity, are prone to biases that reproduce or amplify imbalances in the physical world.[247] This is important to keep in mind since most MSS subscribers use automated or curated playlists at least sometimes: among the consumer survey responders only 15% declared not using any playlists, with more than half declaring using editorial and more than half declaring using automated ones.

The impact of platform curation and algorithms on music consumption diversity is ambiguous. Engagement with diverse content, while beneficial from a user satisfaction and retention perspective, poses challenges for recommendation system efficacy. Higher diversity in user consumption has been linked to improved long-term engagement, suggesting that platforms benefit commercially from promoting diverse listening behaviours.[248] However, recommendation quality diminishes for users with highly diverse preferences, potentially undermining user satisfaction among more exploratory listeners.[249]

Moreover, playlist length and recommendation algorithms significantly influence the discoverability of new music, with the sheer number of recommended items and their presentation method significantly impacting user exploration behaviours.[250] Hence, platforms must navigate complex trade-offs between recommending sufficiently diverse yet individually appealing content.

Notably, 46% of the respondents to the consumer survey indicated being satisfied (or very satisfied) with the automated recommendations, with 37% being ambivalent and only 17% noting dissatisfaction. This highlights that recommendations, on average, do seem to fulfil their purpose. However, it is a different question whether they could represent European music to a larger extent without sacrificing user satisfaction (or even improving it). Currently, while most (62%) respondents agree that automated recommendations at MSS help them discover more music in general, the results are very mixed for discovery of local music (31% agree and 31% do not) or music in native language (31% agree and 32% do not). MSS algorithms seem somewhat more likely to help in discovering

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[247] Ranaivoson, H., Smets, A., & Ballon, P., 15 Challenges and opportunities for recommender systems in media markets. *De Gruyter Handbook of Media Economics*, 215, (2024).

[248] Anderson A., Maystre L., Anderson I., Mehrotra R., and Lalmas M., 'Algorithmic Effects on the Diversity of Consumption on Spotify', (20 April 2020), available at: https://doi.org/10.1145/3366423.3380281; Anderson I., Gil S., Gibson C., Wolf S., Shapiro W., Semerci O., and Greenberg D.M., '"Just the Way You Are": Linking Music Listening on Spotify and Personality', (2021), Social Psychological and Personality Science, available at: https://doi.org/10.1177/1948550620923228

[249] Kowald D., Muellner P., Zangerle E., Bauer C., Schedl M., and Lex E., 'Support the underground: characteristics of beyond-mainstream music listeners', (2021), EPJ Data Science, available at: https://doi.org/10.1140/epjds/s13688-021-00268-9

[250] Lamprecht D., Strohmaier M., and Helic D., 'A method for evaluating discoverability and navigability of recommendation algorithms', (December 2017), Computational Social Networks, available at: https://doi.org/10.1186/s40649-017-0045-3

music from other European countries (39% agree and 29% do not), but the answers are again split for diversity in discovered artist nationalities (36% agree and 32% do not) and opposite for help in discovering music in other languages (only 27% agree, while 42% disagree).

4.3.3. Quantitative analysis of leading curated playlists and their impact on different dimensions of diversity

Editorial playlists serve as a foundation for music discoverability, offering artists an opportunity to reach new audiences. Inclusion of songs in such playlists have been demonstrated to increase their visibility, translating to increased streams and financial gains. Furthermore, the position of a song on editorial playlists plays a significant role, with higher positions resulting in greater popularity (also see the *Presentations* component of the Conceptual Framework).

Collected data on curatorial practices cover two editorial playlists from two music streaming services, that comprise country-specific versions. The playlists coverage is limited due to data availability on the Chartmetric platform, and **the analysis should therefore be understood as illustrative rather than representative of the entire environment of curatorial practices**. Nevertheless, several studies have already shown that the playlists might influence artist success, though the level of exposure provided by the editors might depend on e.g. artist gender or label. Yet, to fully assess the role of curatorial practices in shaping diversity, **comprehensive data across a wider range of platforms and playlists is needed.**

Similarly to music consumption, diversity in curatorial practices is analysed with respect to artist origin, artist pronouns, song genre, and artist's career stage, and the measures are defined analogously (see Annex 4). The main observations are as follows:

- **Artist origin:** An analysis of curatorial playlists with respect to artist origin reveals that European songs account for, on average, half of all entries across platforms and playlists, with a consistently lower representation of non-national European music (14%) when compared to national (35%) and global tracks (50%).
- **Pronouns:** Similarly to top charts, artists identifying with *he/him* pronouns predominate among examined editorial playlists, oscillating around 40% of all song entries. Yet, a slight decline over time is visible, with a concurrent rise in unknown pronouns which reduces the reliability of conclusions on gender representation. Across countries, the distribution of pronouns in the analysed editorial playlists mirrors these overall trends. *He/him* artists dominate across all national playlists, while *she/her* artists are represented more visibly in a number of countries.
- **Song genre:** Genre data for editorial playlists is available only for one of the curatorial playlists. The genre profile of this playlist is stable over time, featuring six dominant genres – Hip-Hop/Rap, Pop, Alternative, Reggae,

Rock, and R&B/Soul – across all the years examined. That resembles the consumption patterns revealed in the top charts.

- **Artists career stage:** In 2023, an average of 40% of songs featured on the analysed curatorial playlists across European countries were created by *superstar* artists, followed by *mainstream* artists (26%), *developing* artists (17.5%), and *mid-level* artists (11%). However, these curated playlists show distinct representation patters - one was dominated by *superstar* artists, who accounted for over half of all entries, while the other displayed a more balanced distribution across career stages. Notably, *legendary* artists receive minimal representation on both platforms, while *undiscovered* artists make up a noticeable share of entries in one of the playlists (8%). Regarding song origin, European songs on these playlists are concentrated in either the *mainstream* or *developing* career stage categories, with the dominance of national over non-national EU songs. However, in both cases, non-European songs dominate the *superstar* category.

4.3.4. Quantitative analysis of localness in algorithmic recommendations

Algorithms for recommendations are a crucial source of music consumption, given their role in shaping attention in an environment where listening time is scarce. However, reliable and comprehensive data on the extent of their influence remains limited. Anecdotal evidence from Spotify suggests that around 33% of discovery happens through algorithmic contexts,[251] while Deezer has reported even more modest figures.[252]. Yet, these figures are partial and not comparable, and no consistent data exist on how much overall listening time is driven by recommendation systems.

The analysis presented in the following pages investigates the **algorithmic recommendations** of a popular music streaming service, with a particular focus on how the country of origin of recommended titles compares to that of the input tracks.

According to information gathered in discussions with two separate MSS, major MSS do not explicitly consider the origins of tracks—such as the nationality of artists or song registration codes (e.g. ISRC) in their recommendation processes. They typically employ a hybrid recommendation approach that combines:

- Content-based filtering, which analyses a track's intrinsic features (e.g. tempo, key, and timbre).
- Collaborative filtering, which identifies relationships between tracks based on user-generated data, such as playlists and listening behaviour.

[251] For more information, please see: https://artists.spotify.com/discovery-mode

[252] Anecdotally, Deezer reported that around 21% of listening comes from recommendation features (MuRS 2024 conference).

The purpose of this exercise is to determine whether recommenders might steer users away from titles originating in certain countries toward those from others, and, if so, to identify which countries are affected, which are favoured, and to what extent. To investigate this, the recommendation algorithm of a major MSS is fed with sets of songs featuring varying artist nationalities and analyse the resulting recommended tracks. This analysis encompasses 24 EU countries.

This analysis builds on broader research exploring how automated music recommendation systems reflect regional preferences and local content. Two particularly relevant studies in this context are Lesota et al.[253] (focused on Last.fm's no longer publicly available LFM-2b dataset) and Matrosova et al.[254] (focused on Deezer's proprietary dataset). Each of these studies investigates how recommendation algorithms balance local and non-national music but employs different data sources and methodologies, providing complementary insights. Overall conclusions from these two studies show varying trends depending on the algorithm: while NeuMF seems to display a bias against local music, ItemNKK seem to do the opposite. Local biases diverged across regions.

Last.fm (LFM-2b) Results: Lesota et al. examined how standard recommender systems handle local music compared to US-produced content in Last.fm's dataset. Their findings highlight significant differences between two algorithms:

- Neural Matrix Factorisation (NeuMF): This neural network-based collaborative filtering algorithm displayed a bias against local music, recommending a lower proportion of local tracks than users from each country actually consume. It also amplified the dominance of US-produced music in international recommendations.
- Item-Based K-Nearest Neighbors (ItemKNN): A classical collaborative filtering method that yielded more calibrated recommendations, fostering local music consumption in many countries and aligning more closely with users' actual preferences.

Deezer Results: The study by Matrasova et al. sought to reproduce the analysis conducted by Lesota et al. on Last.fm's LFM-2b dataset, using Deezer's proprietary data. It investigated how recommendation algorithms handle local music across France, Germany, and Brazil, offering a more diverse and representative dataset compared to the niche and English-speaking bias of Last.fm.

Key Findings included :

253 Lesota, O., Parada-Cabaleiro, E., Brandl, S., Lex, E., Rekabsaz, N., & Schedl, M., Traces of globalization in online music consumption patterns and results of recommendation algorithms (2022).

254 Matrosova, K., Marey, L., Salha-Galvan, G., Louail, T., Bodini, O., & Moussallam, M., Do Recommender Systems Promote Local Music? A Reproducibility Study Using Music Streaming Data, (2024), available at: https://arxiv.org/abs/2408.16430v1

- NeuMF : Displayed mixed tendencies. While it sometimes promoted local music, it often underrepresented local content relative to user listening patterns.
- ItemKNN : Consistently promoted local music across all three countries, aligning closely with user preferences and reinforcing local consumption.
- Local music recommendations exhibited varying degrees of local bias across regions. In Brazil, the algorithms displayed a strong local bias, consistently promoting local content. In contrast, in France and Germany, the local bias was weaker and more variable, with recommendations balancing local and non-EU content to a greater extent.

Differences between this study and the Deezer and last.fm analyses were:

- Unlike the Deezer and Last.fm studies, which analyse real user listening histories to evaluate localness, this study relies on simulated input bundles. Due to API architecture of the studied MSS, which does not provide recommendations for specific users, this study simulates user tastes by varying the proportions of local and non-national tracks in the inputs. In this regard, the method utilised in this study is similar to that of Lumeau et al.[255,] who also use simulated input bundles to study localness, although their analysis is limited to a comparison between France and the USA.
- While both the Deezer and Last.fm studies evaluate specific algorithms (e.g., NeuMF and ItemKNN) this study approaches recommendation systems as a black box. Analysis of the relationship between input and output is conducted without direct insight into the underlying algorithmic mechanisms, focusing instead on system-level patterns.
- This study covers a broader range of countries, analysing recommendations for a wide selection of EU member states. In contrast, the Deezer study focuses on three countries (France, Germany, and Brazil), and the Last.fm study studies the general pattern: dominance of US music over local content.
- This study uses Chartmetric data to define what is "local" for an artist, leveraging detailed metadata about artist nationalities. Both the Last.fm and Deezer studies rely on MusicBrainz for labelling, which has notable limitations. The Deezer study highlights the sensitivity of results to the quality and completeness of labelling.

Study's data experiment on algorithmic recommendations

To study how MSS's recommend music to users, this study utilised an official tool of a MSS that suggests songs based on small groups of tracks. These recommendations were not personalised to individual users but were based on

[255] Lumeau, M., Moreau, F., Haampland, O., Johannessen, R., Wikström, P., A geographical bias in a music streaming market, (2024).

general data about songs and listening trends. While this does not fully reflect the personalised experience, it offers a consistent way to examine how this system works.

Different input groups (called seed lists) were created by mixing local and non-national EU songs in varying proportions—ranging from all non-national EU to all local tracks. Each group reflected different levels of preference for local music. The songs came from each country's top 100 on the MSS chart in 2022, and it was aimed to avoid repeating tracks unless necessary.

Lists were generated using a semi-random process to keep things fair and reproducible. Although the recommendations might change over time, tests carried out in this study showed that results were stable and consistent when using the same inputs, regardless of the account used. Beyond looking at shares of local music in the recommendations, the Hernfindahl-Hirschman Index (HHI) is used to assess the diversity of recommendations in general. Technical details are provided in Annex 4.

When selecting titles popular in a given country, but not performed by local artists, the findings indicate that across all countries analysed, the proportion of local songs in the recommendation output remains consistently close to 0%. This suggests that **the algorithm does not inherently steer recommendations toward local artists when the input lacks representation from local creators, even if the input tracks are popular within the country.**

As the proportion of local songs in the recommendation input increases, **the proportion of local songs in the recommendation output also rises, albeit not in the same proportion across Member States.** This pattern is observed almost universally across countries.

The increase in the proportion of local songs in recommendations as the proportion of local input rises is not uniform across countries, revealing interesting patterns. In a few countries, the nationality proportions of songs in the input align with those in the output, albeit with certain deviations, indicating a strong correspondence between input and recommendation results.

In contrast, while a few small countries sharing languages with bigger markets exhibit a certain increase in local song proportions as local input rises, the proportions in the output remain significantly lower than those in the input. This suggests that the recommendation algorithm only partially reflects the local emphasis in the input.

The case study carried out aimed to objectively assess how localness manifests in the MSS recommendation outputs without being explicitly programmed into the system, as confirmed by representatives of the music service. Instead, this study investigated whether this phenomenon arises as a "by-product" of other algorithmic factors. Findings reveal that the recommendation algorithm in question, while not explicitly accounting for the nationality of artists, often

captures this feature indirectly. This tendency varies across countries, highlighting differences in how the system processes locally popular inputs. The analysis shows that for most Member States, **the share of local artists within the recommendation outputs strongly depends on the share of local artists in the input**. However, it is consistently lower, which means that the recommendations themselves are not likely to reinforce the growing consumption of local music (which would be the case if the algorithms were overly sensitive to the presence of local music and in return recommended even more local music than a person previously consumed). The analysis also shows that **recommendations tend to favour content from EU countries over non-EU countries when the input consists of song bundles popular within the EU**. However, the experiment did not control for the proportions of EU non-national versus non-EU content in the input, meaning that the observed result may in this regard be an artefact and mirror the popularity structure of music in the analysed countries. The analysis of diversity shows that recommendations often feature artists from a variety of nationalities, showcasing the algorithm's capacity to promote diverse content. However, there are also cases where the outputs are less varied, with a notable concentration of artists from fewer nationalities.

While this methodology relied on randomly constructed input bundles to ensure neutrality, **future analyses could refine this approach by controlling for additional factors**. In this study, focus was on the localness of songs in the input and evaluation of the localness of the output. This choice was made for the sake of clarity: given the multiple countries covered, the aim was to avoid unnecessary complexity. However, with more specific research questions, future work could incorporate additional dimensions. For example, certain genres such as rap may exhibit stronger local tendencies than non-vocal genres, and a genre-specific approach could provide a more granular understanding of algorithmic behaviour. Future studies could benefit also from incorporating explicit controls for the proportion of national and non-national (non-EU) content in the input, allowing for a cleaner identification of recommendation bias. Similarly, factors such as musical stage, gender, or other attributes could be included when studying diversity.

From a technical perspective, this type of analysis can be conducted for any service that shares an API with appropriate recommendation endpoints (i.e. interfaces that allow developers to retrieve recommendation outputs directly). The availability of such endpoints changes dynamically.

An alternative research approach involves creating artificial listener personas and studying the recommendations they receive. This method offers advantages such as a longitudinal perspective—tracking how algorithms evolve over time in response to the traits of these personas. However, it is more resource-intensive and typically limited in scale compared to the API-based approach, which allows us to analyse thousands of input “music baskets.”

An interesting avenue for future research would be to compare the API-based and persona-based approaches side by side, in order to assess the extent to which platforms take individual user characteristics into account versus relying primarily on content attributes and mixtures.

Policymakers could consider supporting research and innovation initiatives on recommenders that incorporate European diversity by design. For better insights, **greater collaboration between music services, researchers and policymakers would be needed**. To enable robust and comparable analyses, it is recommended to promote openness and accessibility of API endpoints from MSS. These endpoints should allow researchers to evaluate recommendation systems comprehensively and transparently.

4.4. Challenges and barriers

Key findings:

- The growing influence of playlists as key discovery tools risks reinforcing market concentration, as they tend to privilege mainstream and nationally dominant content while limiting the visibility of niche genres and music from other European countries.
- Hundreds of thousands of tracks released weekly make it harder for diverse European works to gain visibility. The issue is worsened by streaming fraud and the rapid development of AI-generated music
- Inconsistent, incomplete, or poorly standardised metadata (e.g. ISRC errors, limited support for non-Latin scripts) undermines discoverability and fair attribution.

The digital music environment, notably dominated by MSS, is characterised by significant structural and operational challenges that directly impact the discoverability of Europe's culturally diverse music content. As outlined in Sections 4.3 ("Curation and Algorithms") and specifically in the sub-sections "4.3.3. Quantitative analysis of leading curated playlists and their impact on different dimensions of diversity " and " 4.3.4. Quantitative analysis of localness in algorithmic recommendations," the implications identified from the services' curation practices and data-driven recommendations have emerged as particularly challenging. Although significant attention has been devoted to understanding the complexity of curation practices and data-driven recommendations, these are not the sole challenges that influence the discoverability of Europe's diverse music. Further structural and operational barriers exist that compound and exacerbate these problems. In this section, additional critical barriers will be addressed since understanding and mitigating these multifaceted challenges remain essential for fostering the discoverability of diverse European music.

4.4.1. Challenges from curation practices and recommendations

Music streaming services predominantly utilise **rigid taxonomic classification systems**, which simplify user navigation but frequently fail to accommodate the inherent complexity and richness of diverse musical styles. Consequently, these rigid classification systems inhibit exploration and discovery, disadvantaging music from niche or culturally specific genres. Further complicating this issue, **curated playlists wield substantial power within MSS ecosystems.** Playlists significantly influence user discovery, thus artists featured prominently experience heightened visibility and listener engagement. Conversely, artists excluded from these influential playlists struggle to achieve adequate recognition despite potentially high artistic merit. Such **curation practices perpetuate popularity bias, significantly disadvantaging lesser-known European artists and genres**.

Furthermore, MSS heavily depend on algorithmic recommendations driven by extensive user data analytics. MSS employ sophisticated algorithms that predict and recommend music based largely on existing listening habits, effectively reinforcing listeners' existing preferences rather than actively promoting novel and diverse musical experiences. Such **algorithms tend to favour mainstream content, which is globally or locally popular, marginalising less familiar music,[256] in particular from other EU countries.[257] The sheer volume of music released weekly further exacerbates this issue**, with niche music (e.g. specific genres and languages) facing immense challenges in gaining visibility amidst hundreds of thousands of tracks on MSS.

Moreover, the **structural dynamics within streaming disproportionately disadvantage European artists who perform in culturally distinct musical styles, as well as those who produce music in genres outside mainstream global trends** (on this see section on Curation and algorithms above) This may risk of systematically overshadowing culturally diverse European content. Despite developments at the national level, such as increased listener engagement with domestically produced music in Germany, Italy, Spain, and France,[258] these improvements alone may not sufficiently counteract the

[256] Ferraro, A., Serra, X., and Bauer, C., 'What Is Fair? Exploring the Artists' Perspective on the Fairness of Music Streaming Platforms' (2021), in Ardito, C., Lanzilotti, R., Malizia, A., Petrie, H., Piccinno, A., Desolda, G., and Inkpen, K. (eds.), Human-Computer Interaction – INTERACT 2021, Vol. 12933, pp. 562–584, Springer International Publishing, available at: https://doi.org/10.1007/978-3-030-85616-8_33. Anderson, A., Maystre, L., Mehrotra, R., Anderson, I., & Lalmas, M. Algorithmic effects on the diversity of consumption on Spotify. Proceedings of The Web Conference 2020, 2155–2165 (2020), available at: https://doi.org/10.1145/3366423.3380281

[257] Hroch M. and Szczepanik P., 'Playlisting the periphery: Platform intermediaries and East-Central European music visibility in Spotify's geography', (2025), New Media & Society, available at: https://doi.org/10.1177/14614448251346200

[258] IFPI, 'Engaging With Music 2023', (2023), available at: https://www.ifpi.org/ifpis-global-study-finds-were-listening-to-more-music-in-more-ways-than-ever/

entrenched structural biases within MSS recommendations and curation practices.

Besides, streaming fraud and more generally (and more recently) the **development of GenAI create new challenges for the music sector in the context of discoverability**. Also known as streaming manipulation, streaming fraud includes artificially inflating ones' views, streams, follows and sales, with the aim to manipulate tracks' popularity in charts, on playlists, or in search results, to ultimately generate revenue.[259] There are so-called promotion or playlisting companies that claim to legitimately help to increase ones' fan-base and streams. However, these companies are likely using bots that continuously stream the tracks to amplify the tracks' exposure and trick the algorithms for favourable playlist placement, at the expense of the visibility of other artists, notably those who do not have the means for such illegal practices. This adds to the large volume of music content produced and made available daily,[260] which also makes it more difficult for artists to become discoverable. It is unclear what will be the impact of deals between companies allowing to generate music with AI-tools and music labels, such as the one between Warner Music Group and Suno.[261]

The passive nature of consumer behaviour compounds these structural challenges. The analysis carried out in the context of this study does not explicitly measure these subjective consumer impacts. Given the significant implications of these listening modes, future research should directly explore listeners' perceptions, satisfaction, and the broader cultural impact of algorithm-driven passive consumption to further illuminate discoverability dynamics.

4.4.2. Metadata challenges in the music sector

Accurate metadata tagging is essential for music discoverability and equitable remuneration. Metadata encompasses critical information, including artist identity, track title, genre, release details, and rights management data, essential for effective content organisation, discovery, and compensation processes. It also relies heavily on information provided by CMOs, music record companies and music publishing companies, in order to distribute revenue properly according to licensing agreements. The distribution of this revenue is then passed on to musicians depending mainly on contracts between rights holders and musicians.[262] Furthermore, recommendation systems employed by MSS depend significantly on content-based approaches, including metadata about tracks such as artist and song titles, album covers, and various annotations

[259] TuneCore, *What is Streaming Fraud/Abnormal Streaming Activity?* Available at: https://support.tunecore.com/hc/en-us/articles/360056164472-What-is-Streaming-Fraud-Abnormal-Streaming-Activity

[260] See section 3.1.1.2 for more information.

[261] Roth E., Warner Music Group partners with Suno to offer AI likenesses of its artists, (2025) available at: https://www.theverge.com/news/829189/warner-music-group-suno-ai-licensing-deal

[262] Hesmondhalgh D., 'Is music streaming bad for musicians? Problems of evidence and argument', (2021), New Media & Society, available at: https://doi.org/10.1177/1461444820953541

from experts and data-mined from the web.[263] Metadata management has therefore become the responsibility of rights holders, intermediaries, and specialised music information retrieval (MIR) services used by MSS.

Standards setting in music metadata is further influenced by digital rights agencies that represent thousands of smaller record companies, major record labels, and technological services, which actively shape metadata through both automated and human curation.[264] However, **metadata inconsistencies and inadequate standardisation pose significant challenges, particularly impacting small and emerging artists who rely heavily on digital discoverability**.

A prominent example that highlights metadata's critical role involves the **International Standard Recording Code (ISRC),** which was developed for identifying recorded music tracks uniquely. Issues around incomplete or incorrect ISRC data have frequently led to severe practical consequences, such as overlapping or incorrectly grouped entries for artists sharing the same name. The band Energy provides a tangible example: their Spotify profile mistakenly featured the logo of another band and included an unrelated playlist mixing diverse genres, severely impacting their discoverability and audience engagement.[265] Such erroneous associations significantly hinder artists' visibility, undermining accurate attribution and preventing artists from fully benefiting from their own work.[266] Another example of metadata practice is DDEX, which ensures the reporting for MSS towards CMOs. With DDEX-based workflows, MSS ingest and report usage data.[267]

Further complicating this landscape, **current metadata standards are inadequately developed regarding taxonomy and linguistic diversity, particularly for languages and alphabets beyond the Latin script**. At the 2023 Music Metadata Summit, industry experts acknowledged that inaccuracies affected approximately 5–10% of music catalogue metadata, especially impacting content in non-Latin languages.[268] These inadequacies pose substantial challenges to accurately representing diverse musical traditions and

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[263] Ibid.

[264] Hesmondhalgh D., Valverde R.C., Kaye D.B.V., and Li Z., 'Digital Platforms and Infrastructure in the Realm of Culture', (2023), Media and Communication, available at: https://doi.org/10.17645/mac.v11i2.6422; Hesmondhalgh D., Valverde R.C., Kaye D.B.V., and Li Z., 'Critically Analyzing Platform Interfaces: How Music-Streaming Platforms Frame Musical Experience', (2024), International Journal of Communication, available at: https://ijoc.org/index.php/ijoc/article/view/21989/4673

[265] Drott E., 'Streaming music, streaming capital', (2023), Durham, Duke University Press, available at: https://doi.org/10.1215/9781478027874

[266] Burger A., 'How artists are exploiting lax metadata protections by streaming services', (2022), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/how-artists-are-exploiting-lax-metadata-protections-by-streaming-services/

[267] Mazziotti G. et al. (forthcoming), 'D5.1 – Music Copyright Infrastructure'. Fair MusE.

[268] Campos Valverde R., 'Engineered inequality: musical taxonomies and streaming recommender systems', (2 January 2025), AoIR Selected Papers of Internet Research, available at: https://doi.org/10.5210/spir.v2024i0.13916

global naming conventions. Moreover, the EU notably lacks robust regulatory oversight comparable to the U.S. Music Modernisation Act, leaving metadata governance largely to opaque industry-controlled processes and confidential agreements, with limited input from culturally diverse stakeholders.[269]

Initiatives such as **Chartmetric's Pronoun Database** represent progressive efforts toward enriching metadata diversity, notably addressing previously overlooked metadata such as gender identity and pronouns. Such initiatives significantly improve representation and discoverability for diverse artists, contributing positively towards addressing some metadata challenges in digital music.

Based on this short overview of metadata challenges, and the analysis performed in this study, it is important to highlight **which metadata descriptors are the most relevant for discoverability of diverse European content online**. The most crucial ones are probably those related to the identification of European works: the country or origin/nationality of the performers, and, to a lesser extent the languages of the lyrics and the country of track registration. The other important descriptors are artist career stage, song genre and artist gender (e.g. via self-declared pronouns).[270]

[269] Senftleben M., Margoni T., Antal D., Bodó B., Gompel S.V., Handke C., Kretschmer M., Poort J., Quintais J., and Schwemer S.F., 'Ensuring the Visibility and Accessibility of European Creative Content on the World Market: The Need for Copyright Data Improvement in the Light of New Technologies', (2021), SSRN Electronic Journal, available at: https://doi.org/10.2139/ssrn.3785272

[270] They are analysed with more details in sections 2.3 and 3.1.2.1.

4.5. Opportunities

Key findings:

- New interfaces support intuitive exploration and serendipitous discovery of diverse and niche genres.
- Some hybrid algorithmic playlists help surface emerging artists; editorial lists can boost tracks by millions of streams.
- Viral trends, livestreamed concerts, and gaming crossovers extend discovery beyond MSS. They drive measurable spikes in streams and chart performance.
- Conversational AI offers new discovery modes but AI-generated music raises concerns about homogenisation, copyright, and transparency.
- Some platforms give creators insight into algorithms, metadata optimisation, and fairer audience targeting.
- Some initiatives show how decentralised, human-curated models can enhance niche and diverse discovery.

The digital environment presents substantial opportunities to enhance the discoverability of diverse European music content. Driven by the recognition that diversity supports user retention, many music streaming services (MSS) and external platforms have developed innovative strategies. Within MSS, these opportunities manifest through community-driven platforms, technological innovations, curated and algorithmic playlists, and promotional tools. Outside MSS, platforms such as TikTok, Twitch, and initiatives like generative AI further amplify discoverability, illustrating the breadth of existing approaches to fostering the visibility of diverse European music content.

4.5.1. Opportunities within music streaming services environment

Interfaces and playlists

Music streaming services provide critical opportunities for fostering discoverability through innovative technological approaches and strategic platform policies. Technological innovations such as **intuitive interfaces** including GenreSpace, Islands of Music, and nepTune, facilitate exploration by visually engaging users in discovering diverse and lesser-known genres.[271] **Interactive systems** like Musicream further enhance user engagement by

[271] Knees P., Schedl M., and Goto M., 'Intelligent User Interfaces for Music Discovery: The Past 20 Years and What's to Come', (2019), available at: https://doi.org/10.5281/ZENODO.3527737

supporting serendipitous discovery, making navigation through vast music catalogues effortless and enjoyable.[272]

Editorial playlists (such as Spotify's New Music Friday) significantly impact music discoverability by presenting new music weekly to global and country-specific audiences. The empirical evidence illustrates their effectiveness, with featured songs significantly benefiting from increased streams—up to 14 million additional streams for the top-ranked tracks.[273] However, despite their success, challenges persist in playlisting, particularly for artists from smaller or non-Anglo markets, where limited access to industry intermediaries and opaque curation processes can hinder discoverability efforts.[274] This can also be due to limited presence of the MSS in these countries, which make them less available for local creators and their labels. Algorithmic playlists can complement editorial curation by continuously engaging listeners through personalised recommendations.[275]

Paid promotional tools

Paid promotional tools offer artists-controlled boosts in visibility, albeit with critical caveats. **Spotify's Marquee and Showcase** features exemplify tools providing targeted visibility enhancements. However, Marquee, while effectively converting impressions into streams, is financially prohibitive for independent artists due to its high cost and minimal return on investment.[276] Showcase, introduced in 2023 and working a bit in the same way, provides more flexibility with lower entry costs but still presents challenges of sustained budgeting and competitive visibility.[277]

Discovery Mode, a royalty-reduced promotional tool by Spotify, further presents both opportunities and controversies, offering significant listener growth (+40% on average) at the expense of reduced royalty rates, raising ethical concerns akin to payola.[278] While Spotify highlights tangible increases in listener engagement, industry representatives criticise this approach as exploitative, branding it a

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[272] Washenko A., 'Test Drive: Cymbal struggles to stand out in social music apps - RAIN News', (2015), https://rainnews.com/, available at: https://rainnews.com/test-drive-cymbal-struggles-to-stand-out-in-social-music-apps/

[273] Tencer D., 'Europe's music tastes becoming more local, as royalties generated by European Union artists triple in 6 years', (2024), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/europes-music-tastes-becoming-more-local-as-royalties-from-spotify-triple-in-just-6-years1/

[274] Ibid.

[275] See section 3.1.2.6.

[276] Houghton B., 'Spotify's Paid Promotion Tool Is Called Marquee and Artists, Indie Labels Can't Afford To Use It', (2019), available at: https://www.hypebot.com/hypebot/2019/12/spotifys-paid-promotion-tool-is-called-marquee-and-artists-indie-labels-cant-afford-to-use-it.html

[277] Stassen M., 'Spotify launches new paid-for 'Showcase' recommendation tool, starting at $100 per promo campaign', (12 September 2023), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/spotify-launches-new-paid-for-showcase-recommendation-tool-starting-at-100-per-promo-campaign/

[278] Dredge S., '17 of the main strategic moves made by Spotify in 2022 - Music Ally', available at: https://musically.com/2022/12/06/17-of-the-main-strategic-moves-made-by-spotify-in-2022/; Pollet M., 'EU lawmakers aim to push Spotify on better pay for music artists', (8 June 2023), POLITICO, available at: https://www.politico.eu/article/lawmakers-side-with-artists-to-push-spotify-on-pay-transparency/

"wage suppression scheme".[279] European stakeholders, including the European Grouping of Societies of Authors and Composers (GESAC), have similarly condemned this model for its opacity and detrimental financial impact on artists.[280]

Alternative payment systems

Deezer has introduced innovative payout systems designed to boost genuine engagement without compromising royalty rates. The artist-centric payment system (ACPS), implemented in collaboration with Universal Music in France, increases royalty distributions based on active listener engagement metrics.[281] Moreover, not only does ACPS counteract issues related to algorithmic autoplay and artificially inflated streams, but it also benefits mid-tier artists by strengthening the position of those ranked between 11th and 1,000th by monthly streams on Deezer.[282]

Expanding beyond artist-centric models toward broader listener-focused solutions, SoundCloud became the first major service to implement a fully user-centric payout system (UCPS) by introducing "Fan-Powered Royalties" in 2021. This model focuses on distributing each listener's subscription and advertising revenue only among the artists that listener has streamed, rather than on the basis of every artist's overall market share.[283] Early observations from this initiative suggest that UCPS can indeed shift money towards lesser-heard genres and artists. For instance, one analysis projected the revenue of classical music artists to rise by 24% under fan-powered royalties, whereas mainstream rap and hip-hop might see declines around 19–21% due to the rebalancing.[284]

While the projection highlights how a user-centric system rewards loyal fan engagement, it also revives pre-established anxieties about streaming remuneration. Earlier concerns cautioned that heavy listeners of many niche artists could dilute per-stream payouts to those indies, especially since their fixed

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[279] Miller K., 'Is Spotify's Discovery Mode Screwing Over Artists?', InsideHook, available at: https://www.insidehook.com/music/spotify-discovery-mode-royalties-rate

[280] Pollet M., 'EU lawmakers aim to push Spotify on better pay for music artists', (2023), POLITICO, available at: https://www.politico.eu/article/lawmakers-side-with-artists-to-push-spotify-on-pay-transparency/

[281] Ingham T., 'Deezer's 'artist-centric' model now has a new 'user-centric' element which, despite not really being 'user-centric', is quite a clever idea.', (30 October 2023), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/deezers-artist-centric-model-now-has-a-new-element-dubbed-user-centric/; Marshall T., 'Deezer and Sacem partner for 'artist-centric' royalties model towards publishing rights', (16 January 2025), RouteNote Blog, available at: https://routenote.com/blog/deezer-and-sacem-partner-for-artist-centric-royalties-model-towards-publishing-rights/

[282] Moreau F., Wikström P., Haampland O., and Johannessen R., 'Alternative payment models in the music streaming market: A comparative approach based on stream-level data', (September 2024), Information Economics and Policy, available at: https://doi.org/10.1016/j.infoecopol.2024.101103

[283] Mogbo N.C., 'The New Model of Artist Remuneration: Opportunities in the Fan-Powered Royalties Model', (2023), available at: https://www.thembj.org/2023/03/the-new-model-of-artist-remuneration-opportunities-in-the-fan-powered-royalties-model/

[284] Centre national de la musique and Deloitte, 'Impacts du passage à l'UCPS par les services de musique en ligne: Résultats de l'étude CNM-Deloitte', (2021), Paris, Centre national de la musique, available at: https://cnm.fr/wp-content/uploads/2021/01/CNM_UCPS_SyntheseFinale-1.pdf

monthly fee gets split across more tracks, whereas a superstar pop act with a large number of light listeners might paradoxically enjoy higher effective per-stream rates under user-centric accounting.[285] Additionally, the operational costs of overhauling royalty tracking, which creates a unique account per listener, such that each of over 3 million artistes is linked financially to each individual subscriber, are non-trivial, though proponents argue these challenges are surmountable with modern data systems.[286]

Despite these caveats, the experiments by Deezer and SoundCloud demonstrate a concrete proof of concept. It represents a promising effort that offers a potential path toward more equitable streaming payouts for artists by reinforcing the objective of boosting genuine engagement without compromising royalty rates.[287]

4.5.2. Opportunities outside of music streaming services Environment

Social media and non-musical platforms

Platforms such as TikTok provide opportunities for music discoverability through user-generated remixes and viral trends such as sped-up tracks. In the TikTok-to-MSS funnel, virality on TikTok directly influences playlist curation on streaming platforms, amplifying music visibility across ecosystems.[288]

A particularly vivid example is Charli xcx's "Party 4 U." Originally a 2020 deep cut, the track went viral in early 2025 as fans on TikTok posted lip-sync videos to the up-tempo second verse, where Charli delivers rapid-fire lyrics that fans transformed into a challenge.[289] Several fans also expanded the trend by re-enacting a well-known pop culture lip-sync performance, which gave the videos a humorous and shareable quality that reached far beyond the musician's established fanbase.[290] One widely circulated clip accumulated over 2.8 million

[285] Mulligan M., 'Exclusive: Deezer Is Exploring User Centric Licensing', (2017), MIDiA Research, available at: https://www.midiaresearch.com/blog/exclusive-deezer-is-exploring-user-centric-licensing

[286] Page W. and Safir D., 'Money in, money out: Lessons from CMOs in allocating and distributing licensing revenue', (2018), Music & Copyright Newsletter, available at: http://serci.org/congress_documents/2018/money_in_money_out.pdf

[287] Hesmondhalgh D., 'Is music streaming bad for musicians? Problems of evidence and argument', (2021), New Media & Society, available at: https://doi.org/10.1177/1461444820953541; White A., 'The DCMS Committee's inquiry on the economics of music streaming and its implications for artists', (2023), Cultural Trends, available at: https://doi.org/10.1080/09548963.2022.2156267

[288] Hazard B., 'A test Spotify Showcase nets astoundingly disappointing results [Brian Hazard]', (2024), Hypebot, available at: https://www.hypebot.com/hypebot/2024/04/musician-tests-spotify-showcase-with-astoundingly-disappointing-results.html

[289] Denis K., Lipshutz J., and Unterberger A., 'Drake's 'Nokia' Becomes His Midweek '$exy $ongs' Breakout Hit, 'Gimme a Hug' Leads to Aaron Hall Gains', (2025), Billboard, available at: https://www.billboard.com/music/chart-beat/drake-nokia-hit-some-sexy-songs-4-u-aaron-hall-i-miss-you-1235906565/

[290] Murray R., 'Why Is Charli xcx, 'party 4 u' Going Viral All Over Again...? | News', (2025), Clash Magazine Music News, Reviews & Interviews, available at: https://www.clashmusic.com/news/why-is-charli-xcx-party-4-u-going-viral-all-over-again/

views within 8 days.[291] Overall, by late February 2025, there were over 47,000 TikTok videos, lyric edits, and mashups using "Party 4 U" as a sound,[292] which reflects an explosion of user-generated content around this once-obscure track. This activity rapidly translated into streaming gains, where the track jumped from 278,000 U.S. on-demand streams in early January to 830,000 between February 14 and 18.[293] By spring 2025, the song had moved beyond a short-lived viral moment, securing broader commercial recognition as it entered the Billboard Global 200 and multiple national singles charts for the first time.[294]

With chart recognition arriving five years after its release, the case of "Party 4 U" illustrates the growing role of TikTok users as hit-makers. By making tracks the centrepiece of memes, challenges, or emotional expressions, users can revive older songs or accelerate the rise of new ones. In line with this trend, industry analyses also recognise this type of participatory virality as a driver of music discovery and artist promotion. When a song peaks on social media platforms like TikTok, this momentum often translates into measurable streaming gains, with tracks consequently entering playlists and artists experiencing an average 11% increase in on-demand streams in the three days following a peak in TikTok views.[295] In the case of "Party 4 U," the viral clips created a snowball effect that offered an opportunity for non-fans to repeatedly encounter the track, find the content compelling, and ultimately be driven to stream the song.

Non-musical platforms and videogames like Twitch and Fortnite have emerged as alternative venues for live music performances. While initially gaining traction as alternative modes to substitute physical concerts during the Covid-19 pandemic, both Twitch and Fortnite show strong post-pandemic momentum as channels for discoverability due to their convergence of interactive entertainment, community engagement, and music content. Even as physical concerts have resumed, studies indicate that virtual live music attendance remains higher than it was pre-COVID. In the UK, for example, early-2023 data showed more people were attending music events via livestream or virtual platforms than before 2020.[296] This shift coincides with challenges in the traditional live sector (e.g., rising ticket prices and struggling grassroots venues),

[291] Butler S., 'Why Charli XCX's 'Party 4 U' has finally entered the Spotify charts after 5 years | indy100', available at: https://www.indy100.com/tiktok/charli-xcx-tiktok-party-4-u-lyrics

[292] Ibid.

[293] Denis K., Lipshutz J., and Unterberger A., 'Drake's 'Nokia' Becomes His Midweek '$exy $ongs' Breakout Hit, 'Gimme a Hug' Leads to Aaron Hall Gains', (2025), Billboard, available at: https://www.billboard.com/music/chart-beat/drake-nokia-hit-some-sexy-songs-4-u-aaron-hall-i-miss-you-1235906565/

[294] Ibid.

[295] Tencer D., 'TikTok: 84% of songs that entered Billboard's Global 200 chart in 2024 went viral on our platform first', (2025), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/tiktok-84-of-songs-that-entered-billboards-global-200-chart-in-2024-went-viral-on-our-platform-first/

[296] Whittaker L. and Wagner T., 'Emerging Patterns of Participation in Virtual Live Concerts: An Initial Study of UK Audiences Post-COVID', (2025), IASPM Journal, available at: https://doi.org/10.5429/2079.387(2025)v15i1.5en

making online platforms attractive alternatives for both audiences and artists, while presenting an opportunity to be seized.

In addition, Twitch's live-streaming community has become a fertile ground for discovering emerging artists and new music. Data shows one-third of young listeners in the US find new music through Twitch, which is a process that is driven by the platform's deep integration with music culture and industry partnerships.[297] Fortnite, on the other hand, has expanded the notion of a "concert" through its virtual events and in-game music integration, which drives both measurable increases in song consumption and unique musical experiences that spark curiosity.[298] As one 2024 year-end industry report put it, the music industry is increasingly shaped by interconnected experiences between gaming and music, while emphasising that understanding these cross-overs is essential for future growth.[299]

Generative AI and music identification

Generative AI models, notably conversational AI like ChatGPT, present novel opportunities for personalised music discovery through interactive dialogue-based recommendations. For example, Spotify has announced that it's partnering up with OpenAI's ChatGPT to improve the listening experience with personalised recommendations. Launched on October 6 2025, the new service allows Spotify users to link their accounts to ChatGPT, thus allowing it to assist in finding new artists, songs, playlists, albums, or podcast episodes.[300] While their capability for nuanced suggestions is promising, concerns persist regarding transparency and the potential narrowing of diverse musical exposure due to opaque recommendation processes.[301] Still, according to the results of the Consumer survey, this mode of discovery so far remains unpopular with the vast majority of responders noting they don't use AI chats (72%) or that they are not important for their music discovery (20%).

Further concerns arise regarding AI-generated music content. This type of content continues to flood MSS. Consequently, there are growing concerns about AI companies training their models with copyrighted material, as well as governments potentially diminishing copyright laws to facilitate AI

[297] Stassen M., '1 in 3 music listeners in the US discover new music through Twitch, according to new report', (2022), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/1-in-3-music-listeners-in-the-us-discover-new-music-through-twitch-according-to-new-report123/

[298] Tencer D., 'Luminate strikes music data partnership with Fortnite maker Epic Games', (2025), Music Business Worldwide, available at: https://www.musicbusinessworldwide.com/luminate-strikes-music-data-partnership-with-fortnite-maker-epic-games/

[299] Luminate, 'Luminate 2025 Midyear Music Report', Luminate, available at: https://luminatedata.com/reports/midyear-music-industry-report-2025/

[300] Simpson W., "Something that matches every moment" or Robot Rock? Spotify teams up with ChatGPT to make personal recommendations, Music Radar, (2025), available at: https://www.musicradar.com/music-tech/something-that-matches-every-moment-or-robot-rock-spotify-teams-up-with-chat-gpt-to-make-personal-recommendations

[301] Ibid.

development.[302] Initiatives such as Responsible AI Music (RAIM) emphasise that generative AI presents unprecedented opportunities for artistic expression, but simultaneously poses ethical and legal challenges, including potential displacement of human creativity, copyright infringement stemming from vast training datasets, and lack of transparency, explainability, and fairness mechanisms.[303] Similar concerns have been expressed by many other stakeholders.

Furthermore, the homogenisation of AI-generated tracks is an emerging risk. Recent analysis warns that generative systems are more likely to produce stereotypical sounds within a genre or style, as well as having a bias toward mediocrity.[304] AI-generated compositions are often designed with mathematical precision rather than emotional depth, resulting in predictable and indistinct tracks that resemble mere "wallpaper sound".[305] Similarly, musicians caution that this trend could inundate platforms with “sonic sludge” rather than emotionally resonant content.[306] From an economic standpoint, although MSS may initially benefit from reduced royalty costs, the impact could turn negative if generative AI advances rapidly enough to enable local real-time generation without the need to stream content.[307]

Finally, when it comes to music identification technologies, music discovery apps like Shazam have leveraged the AI technology to help identify songs on platforms like YouTube and TikTok. In turn, this technological advancement enhances discoverability by seamlessly integrating identified tracks into streaming playlists and subsequently bridging incidental discovery with intentional listening.[308]

Emerging practices and successful initiatives

Data analytics tools in the music industry are instruments designed to optimise content visibility, audience engagement, and discoverability in the highly competitive streaming ecosystem. The rationale for these initiatives lies in the urgent need to adapt to a music ecosystem dominated by streaming platforms, where algorithms greatly impact recommendation systems, audience engagement and discoverability. As traditional promotional methods fall short, the

[302] Ibid.

[303] Responsible AI Music (RAIM), ‘Responsible AI Music: Ensuring the Future of Music Creation aligns with Trustworthy AI Principles’, available at: https://casbahlab.github.io/raim-framework/

[304] Clair A., ‘How AI is changing music | Vox’, Vox, available at: https://www.vox.com/the-highlight/358201/how-does-ai-music-work-benefits-creativity-production-spotify

[305] Porter B., ‘Is AI Music Just ‘Wallpaper Sound’? The Homogenization of AI-Generated Tracks’, (2025), CoverNet, available at: https://www.covernet.ai/post/is-ai-music-just-wallpaper-sound-the-homogenization-of-ai-generated-tracks

[306] Clair A., ‘How AI is changing music | Vox’, Vox, available at: https://www.vox.com/the-highlight/358201/how-does-ai-music-work-benefits-creativity-production-spotify

[307] Bems H., ‘CEO Keynote: AI in the Music Industry – Should You Fight It, Ignore It, or Embrace It?’, (2025), Sonarworks, available at: https://www.sonarworks.com/blog/research/ceo-keynote-ai-in-the-music-industry-2025

[308] Clover J., ‘Shazam App Can Now Identify Songs in TikTok, Instagram, YouTube and More’, (2023), MacRumors, available at: https://www.macrumors.com/2023/07/06/shazam-app-song-identification-apps/

industry must address systemic challenges to ensure fair and inclusive representation of all creators.[309]

Data analytics tools have proven effective in addressing some of these challenges. Those provided by companies like ***Music Tomorrow*** and ***Soundcharts***[310] play a relevant role in demystifying recommendation systems by providing artists with insights into how streaming algorithms prioritise content. This empowers artists to optimise their track metadata and targeting strategies to increase visibility. Platforms such as ***Spotify for Artists*** and ***Anghami*** *in the Arab region* further help smaller or independent artists stand out by improving playlist placement, personalising home screens, and using localised recommendations to connect with audiences more effectively. Analytical tools, including real-time monitors like *Soundcharts*, also help detect artificially-inflated streams and ensure fairer metrics, contributing to a more equitable music ecosystem. Additionally, initiatives like **PEACH (**Personalisation and Recommendation Ecosystem for Digital Transformation)[311] for public radio broadcasters align with public service values, promoting diversity and impartiality in recommendations, which helps address systemic biases in content discoverability.

Innovative community-driven platforms such as **Localify, Audius and 8tracks** showcase successful models by leveraging decentralised, human-curated approaches. Their community-driven methodology fosters niche discovery and highlights the value of human curation combined with algorithmic recommendation, demonstrating successful hybrid models for promoting diverse content.[312]

[309] Legrand Network, Study on the place and role of authors and composers in the European music streaming market, (2022) p. 6, 22

[310] Music Tomorrow applies SEO-inspired strategies to music discoverability, uniquely focusing on optimizing metadata, playlist positioning, and off-platform signals to influence streaming algorithms on platforms like Spotify and YouTube, enabling precision-driven improvements in track visibility. This blend of Recommender System Optimization (RSO) and algorithmic transparency claims to support artists to strategically enhance discoverability. Soundcharts aggregates and analyses vast amounts of real-time data across the music industry, offering unparalleled insights into trends, audience behaviour, and performance metrics, and helps users to monitor airplay, playlist placements, and competitive benchmarks.

[311] The European Broadcasting Union's Personalization and Recommendation Ecosystem for Digital Transformation (PEACH) allows broadcasters to create innovative products, by leveraging data provided by users, collected with their consent thanks to AI and Machine Learning.

[312] Ross P., 'Team Talk: Audius on artists, money-making and industry control', (2025), Music Ally, available at: http://musically.com/2025/01/13/team-talk-audius-on-artists-money-making-and-industry-control/; Treichel J., '8tracks blog', (2020), 8tracks blog, available at: https://blog.8tracks.com/

5. Sector specific analysis: Book sector

This chapter provides sector specific analyses on discoverability in the digital environment in the books sector. The European books and publishing sector plays a pivotal role in the continent's cultural and economic landscape, encompassing a vast array of languages, genres, and literary traditions, reflecting the diversity and complexity of the region. According to data from the Federation of European Publishers, in 2023, there was a total of around 585,000 new titles issued in Europe (a small increase on 2022). The entire book value chain (including authors, booksellers, printers, designers, etc.) is estimated to employ more than half a million people.

5.1. Introduction to the sector and the main discoverability pathways

Key Findings:

- Physical bookstores remain the main channel for discoverability, with around 75% of sales still offline. They provide unique curation, recommendations, and community roles that online channels cannot replicate. Libraries also continue to play a vital role in ensuring access to a diverse range of titles, supporting cultural diversity and inclusion.
- Word-of-mouth (friends, family, local networks) remains the most trusted source of discovery, showing the continuing importance of social and community-based pathways.
- Online stores are increasingly important, but discovery is fragmented, with global platforms dominating globally, while some regional players remain strong in their markets.
- Algorithmic recommender systems on major platforms drive discoverability but often favour bestsellers and Anglo-American titles, reinforcing linguistic imbalances and narrowing exposure to diverse European works.
- Social media communities have become powerful discovery tools, especially for younger readers, but their content is heavily English-language dominated, which risks sidelining European linguistic diversity.
- Innovative initiatives and national platforms show potential for more inclusive and localised discoverability, tailored to European cultural diversity.
- Subscription and streaming platforms expand access but their role in discovery is still limited; they also raise concerns about the visibility of niche titles and the sustainability of author revenues.

Over the past decades, **the sector has experienced significant transformation, driven by technological advancements and the globalisation of markets**. From the traditional strongholds of print publishing to the burgeoning realms of digital books and online retail, the industry is continuously adapting to meet new challenges and opportunities. This evolution has seen the rise of major technology platforms, the growth of self-publishing, and innovative distribution models that are reshaping the way literature is created, accessed, and consumed across Europe. Notably The eBook market expanded rapidly after 2010, with strong export growth until 2017. After a dip in 2018, growth resumed in 2019, while the 2020 pandemic caused an initial downturn but boosted digital sales. Recovery came in 2021, though a paper supply crisis

began. From 2022–23, turnover rose slowly, driven more by prices than volume, amid ongoing paper shortages and geopolitical instability. eBooks stabilised at around 13% of the market, while audiobooks surged from 2019, reaching about 3.5% in 2023 (likely underestimated).[313]

The introduction of online retail and the advent of e-books opened the book publishing market to major technology platforms. These new entrants created significant effects for the book sector, as focussing on the online retail market as their point of entry challenged not only traditional distributors, such as large retail chains, but also upstream players like authors, publishers, and printers. This disruption was driven by new business models, such as self-publishing, and new revenue models.[314]

However, many readers across Europe **lack access to the richness and diversity of European literature due to the market's linguistic and geographical fragmentation**. Literature from numerous European countries is seldom translated into the wide array of languages spoken across the continent. To address changing market habits and expand readership, the book sector has accelerated its digital transition, aiming to make European literature's diversity more accessible.

5.1.1. Traditional offline pathways are still fundamental for discoverability

Offline discovery pathways encompass the **traditional venues and channels through which readers have been introduced to new books**. Central to this category are brick-and-mortar bookstores and libraries. Additionally, other sources such as second-hand bookstores, direct recommendations (such as from family and friends), book clubs and broadcasting channels (such as television and radio), the written press and literary critics are also important means in which to discover books in the offline environment.

Physical bookstores offer a unique experience in book discoverability, considered not only as a place to buy books readers specifically want but also as places for exploring new ideas and experiences.[315] Online channels have grown but have not displaced bricks and mortar bookstores. The Federation of European Publishers (FEP) reports that ecommerce book sales in Europe were worth about €10 billion in 2023.[316] Eurostat data indicate that during 2023, 13% of Europeans bought printed books online, while 7 % bought eBooks or other

[313] Ibid.

[314] European Commission: Directorate-General for Education, Youth, Sport and Culture, IDEA Consult, imec-SMIT-VUB and KEA, Mapping the creative value chains – A study on the economy of culture in the digital age – Final report, Publications Office, (2017), available at: https://data.europa.eu/doi/10.2766/868748

[315] Sajith, P. A., 'Thoughts on Books, Online Book Discovery, and Bookstores', (2014), available at: https://sajithpai.com/thoughts-books-book-discovery-models-bookstores/

[316] Spring GDS, 'The eCommerce book market in Europe', (2024), available at: https://www.spring-gds.com/blog/the-ecommerce-book-market-in-europe/

digital reading material.[317] In 2022, just over one quarter of all books sold in Europe were purchased online, meaning that roughly **three quarters of purchases still took place in bricks and mortar shops and other physical outlets**. Correspondingly, FEP notes that online sales have begun to slow while physical sales have rebounded; however, bookstore turnover remains below pre-pandemic levels in many countries. These figures put the 2021 snapshot (bookstore revenue of €10.29 billion and a 43.6 % share of total book sales) into perspective, showing that the channel has not fully regained its 2019 share of 50.3 % but remains the dominant avenue for print purchases.

Bookshops rely on several factors that can lead to unexpected discoverability of certain books, including specific categorisation, eye-catching displays, theme tables, exposure of certain book covers, and knowledgeable staff to guide readers.[318] Respondents to the consumer survey carried out in the context of this project rated the importance of recommendations at local bookshops or libraries when discovering books, with a large share finding these useful: 35% rated recommendations as somewhat important and 28% as very important. Overall, this figure highlights that while a portion of respondents do not rely on bookshops or libraries for recommendations, a majority consider them to be at least somewhat important. Bookstores can be independent (small) or chain bookstores (large). Bookstore chains offer their customers a consistent experience regardless of their exact location. They operate on a corporate level and are located around the globe.[319] In contrast, independent bookstores tend to reflect the individual personalities of their specific local communities and connect with readers on a more personal level.[320] In Europe, in terms of individual sellers, certain European countries perform better than others when it comes to sales.[321]

Recognising the importance of discoverability in this setting, **initiatives within the industry are using technology to help bookshops thrive**; one such example is Germany's Lesemotive project, which harnesses AI to classify and display titles based on readers' underlying motives and is helping shopkeepers rethink how they arrange their shelves. The German Lesemotive (Reading Rationales) project uses artificial intelligence to enrich discoverability. MVB and its partner QualiFiction have trained an AI system that analyses the existing metadata for millions of titles in the Verzeichnis Lieferbarer Bücher and automatically assigns each book one or more "reading rationales," i.e., emotional

[317] Ibid.

[318] Makri, S., Chen, Y.-C., McKay, D., Buchanan, G., and Ocepek, M., 'Discovering the Unfindable: The Tension Between Findability and Discoverability in a Bookshop Designed for Serendipity' (2019), in Lecture Notes in Computer Science, pp. 12–13, available at: https://link.springer.com/chapter/10.1007/978-3-030-29384-0_1

[319] Curcic, D., 'Bookstores Statistics' (2023), available at: https://wordsrated.com/bookstores-statistics/

[320] Curcic, D., 'Bookstores Statistics' (2023), available at: https://wordsrated.com/bookstores-statistics/

[321] Watson, A., 'Book Market in Europe — statistics and facts' (2024), available at: https://www.statista.com/topics/4062/book-market-in-europe/#topicOverview

motives for purchase.[322] This AI driven categorisation is being rolled out across the VLB to help booksellers reorganise their shelves and marketing around customers' motives rather than traditional genres. By integrating AI generated categories into physical displays and recommendation tools, independent bookstores can help readers discover titles aligned with their unconscious needs and thereby compete more effectively with larger retailers.

The rise of Amazon as a recent dominant force in the book industry has presented a significant challenge for physical bookstores, particularly independent ones who are not able to offer the same price due to higher overhead costs and a smaller customer base.[323] However, despite the competitive pressure, bookstores remain a vital tool for book discoverability, leveraging unique strategies, particularly in providing a personalised experience for their customers.[324]

Libraries are another important tool for enhancing book discoverability in a physical space. They offer an inclusive environment where readers can explore books. Libraries make accessible collections of sources to a defined community for reference or borrowing, ensuring access to both popular titles and more niche books are accessible to readers within the community.[325][326] Also, **libraries in the European Union play a crucial role in strengthening both cultural and digital literacy**. They act as democratic spaces that preserve cultural heritage while also helping citizens develop media and digital skills, as highlighted by initiatives such as The Europe Challenge and EU-backed projects like ADELE (Advancing Digital Empowerment of Libraries in Europe).[327] By combining access to cultural memory with training in digital competencies, libraries empower communities to resist disinformation and fully participate in civic life.

Recommendations from friends and family are also one of the most influential sources of book discovery. Results from the consumer survey show that nearly half of respondents (48%) rated them as very important, while an additional 42% considered them somewhat important. Only a small minority regarded this source as less relevant, with 5% describing it as not important and just 4% stating they do not use recommendations from their personal networks. This underlines the continued strength of word-of-mouth as a trusted and central

[322] Frankfurter Buchmesse, 'Reading Rationales', (n.d.), available at: https://www.buchmesse.de/en/news/readingrationales

[323] Two Teachers, 'The Competitive Environment: How Independent Bookstores Compete with Amazon' (2023), available at: https://www.twoteachers.co.uk/post/the-competitive-environment-how-independent-bookstores-compete-with-amazon

[324] Ibid.

[325] Librarianship Studies & Information Technology, 'Library' (2021), available at: https://www.librarianshipstudies.com/2017/07/library.html

[326] Iowa State University, 'Library Discovery Tools', year unknown (accessed: 08.12.2025), available at: https://iastate.pressbooks.pub/lib160infolit1ed/chapter/library-discovery-tools/

[327] Public Libraries 2030, Advancing Digital Empowerment of Libraries in Europe (ADELE), (n.d.), available at: https://publiclibraries2030.eu/project/adele/

channel for discovering new books, even in an era dominated by digital platforms. Indeed, external research confirms this pattern – word-of-mouth is frequently identified as the top driver of book discovery, with one study reporting it as the number-one way people find new books and nearly 50% of readers primarily discovering titles via personal recommendations.[328]

Similarly, **the press plays a more modest but still noteworthy role**. 44% of consumer survey respondents rated press sources as somewhat important and 25% as very important. However, a significant minority either do not use the press for book discovery (20%) or find it not important (11%). This suggests that while reviews and coverage in newspapers or magazines contribute to book discovery, they are less consistently relied upon than personal networks.

5.1.2. Online book ecosystem

The past two decades has seen book discovery **shifting from physical bookstores to online platforms**.[329] Among these, online stores with books stand out as an important source of discovery. As the consumer survey results show, the largest share of respondents (35%) rated online stores as somewhat important, with another 16% considering them very important. Still, 28% indicated that they don't use online stores for book discovery, and 21% regarded them as not important. These findings highlight a divided picture: while online stores are central for many readers, a sizable group does not consider them a meaningful channel for discovering books.

The rise of the online book ecosystem stems from the **digitalisation of the publishing industry**, which began between the late 90s and early 2000s, when e-reader technologies and search engines, were introduced to the mass market.[330] Additionally, due to the COVID-19 pandemic, many bookstores expanded their presence into the digital environment to sell their products.[331] The rise of the importance of online book-selling platforms has resulted in a decline in the number of physical bookstores and a reduction of shelf space in those stores.[332]

Digitalisation has fuelled the dynamic development of various types of **online book selling platforms** globally, although as referred to above, the sale of books remains primarily an on-site activity in Europe. The clear leader of the global online sale of books is Amazon, with over 50% of market share worldwide.[333]

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[328] WordsRated, 'Why People Read Books: Readers & Consumer Behavior', (2023(, available at: https://wordsrated.com/why-people-read-books-readers-consumer-behavior/

[329] Ibid.

[330] WordsRated, 'Why People Read Books: Readers & Consumer Behavior', (2023), available at: https://wordsrated.com/why-people-read-books-readers-consumer-behavior/

[331] Stakeholder Interview

[332] Ibid.

[333] Rubino, R., 'Top 25 Marketplaces to Sell Books', (n.d.), available at: https://e-tailize.com/blog/top-25-marketplaces-to-sell-books/

Amazon started in 1994 as an online retailer selling just books[334] but has since evolved into one of the biggest platforms which sells a variety of goods and services.[335] Books and e-books however remain at the core of the Amazon's activity.[336] Whilst the numbers of physical books sold was experiencing stagnation, the company launched Kindle to develop the sale of e-books.[337] Since Amazon's increasing market share in past years, 'Death by Amazon' has been coined to describe the expression to identify the decline in sales of physical stores affected directly or indirectly by the e-commerce leader.[338]

Amazon dominates many markets but has **strong regional competition**. According to Statista's Consumer Insights survey, Amazon was used by 71 % of U.S. readers, 68% of U.K. readers, 66% of Italian readers and 62% of German readers to buy books in the past year.[339] However, regional chains remain important: La Feltrinelli (Italy) was used by 47 % of Italian respondents, Fnac by 43 % of French readers, La Casa del Libro by 42 % of Spanish readers and Ex Libris by 27 % of Swiss respondents.[340] In Poland for example, Allegro commanded 38.8% of Poland's total e-commerce spending in late 2024, while Amazon held 3.9%.[341] Contrarily to Amazon, Allegro has local versions in Czechia, Slovakia, Hungary, Croatia and Slovenia. Although this figure for Poland covers all product categories, not just books, it underscores the strength of Allegro's marketplace and explains why many Polish consumers still buy books through Allegro. Bol.com accounts for 12% of all online sales in the Netherlands and serves roughly 11 million customers across the Netherlands and Belgium (by comparison, Amazon.nl held only 2.5% of online sales in the Dutch market).[342] In Germany, Thalia held a 24% share of the entire German book market; its share in physical bookstores is slightly higher at 27%. Thalia's 360-store network and integration of online and offline channels make it the dominant omni-channel bookseller in Germany.[343] These figures show that while global marketplaces like Amazon have a large presence, local retailers—Allegro in Poland, Bol.com in the

[334] Ibid.

[335] West, E., 'Amazon: Surveillance as a Service' (2019), Surveillance & Society, available at: https://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/13008, p. 28.

[336] Rowberry, S. P., 'Four Shades of Gray: The Amazon Kindle Platform' (2022), available at: https://www.econstor.eu/handle/10419/281349

[337] Ibid.

[338] Vollero, A., Sardanelli, D., and Siano, A., 'Exploring the role of the Amazon effect on customer expectations: An analysis of user-generated content in consumer electronics retailing', Journal of Consumer Behaviour (2021), p. 1063, available at: https://onlinelibrary.wiley.com/doi/pdf/10.1002/cb.1969

[339] Statista, 'Share of respondents who bought books from Amazon', available at: https://www.statista.com/chart/28042/share-of-respondents-who-bought-books-from-amazon

[340] Ibid.

[341] Koongo, 'Top 10 Best Selling Categories on Allegro and How to Succeed in Them', (2025), available at: https://www.koongo.com/blog/top-10-best-selling-categories-on-allegro-and-how-to-succeed-in-them

[342] Byrd, 'Top eCommerce Marketplaces in the Netherlands', (2024), available at: https://blog.getbyrd.com/en/top-ecommerce-marketplaces-in-the-netherlands

[343] Westernacher, 'German book retailer Thalia adopts SAC mobile apps for enhanced flexibility and efficiency', (n.d.), available at: https://westernacher.com/work/german-book-retailer-thalia-adopts-sac-mobile-apps-for-enhanced-flexibility-and-efficiency/

Netherlands and Belgium, and Thalia in Germany—still capture substantial shares of their respective markets and remain important destinations for online book purchases.

There is no knowledge of Amazon's book market share in the EU as a whole, as Amazon provides a dedicated storefront only in several EU Member States (Germany, France, Belgium, Poland, Spain, Sweden, Italy and the Netherlands). However, Amazon has been cited as the main competitor for bookstores, especially in e-commerce, with some estimates putting it at around half of the US book print market, with a larger share for e-books .[344] Other sources state that Amazon has a strong e-book presence in the German (43%), and Spanish (40%) markets.[345]

Online subscription platforms for books have also become important new pathways for discoverability, offering access to vast libraries of e-books and audiobooks through monthly subscriptions. These services enhance accessibility by allowing readers to explore a wide range of genres and titles. Audiobook platforms such as Audible further expand this reach, giving authors distribution opportunities while providing readers with convenient access to recordings.[346]

Online book clubs and forums, such as those found on the platform Reddit's r/BookClub, offer diverse *experiences* for readers to engage in discussions and discover new books. Apps like Bookclubs and Meetup facilitate connections between different readers, enhancing book discoverability.[347] Blogs and magazines also play a significant role in recommending and discussing a wide range of books, which contribute to the exploration of new titles and genres. Furthermore, social media platforms have become influential in book discoverability and promotion. TikTok's BookTok community, Instagram's Bookstagram, YouTube's BookTube, and Twitter (X) significantly impact book sales and author-reader engagement.

[344] Evans, B., 'Amazon's Market Share' (2019), available at: https://www.ben-evans.com/benedictevans/2019/12/amazons-market-share19

[345] Statista, 'Market share of Amazon in e-book sales in Germany, Spain and the United Kingdom', (n.d.) available at: https://www.statista.com/statistics/669658/e-books-market-share-amazon-europe/

[346] Spotify, 'Audiobooks in Premium: Get lost in great stories' (2025), available at: https://www.spotify.com/us/audiobooks/

[347] Online Book Club, 'Online Book Club – A free online community for book lovers', (n.d.), available at: https://forums.onlinebookclub.org/

5.1.3. Online recommendations as a means of discoverability

5.1.3.1. Algorithmic recommender systems

Algorithmic recommender systems are **primarily used in retail or e-commerce platforms to identify consumer buying trends and patterns to recommend products based on their preferences**.[348] When using these systems, the data collected from a person's interactions can be filtered to give insight on a person's preferences and design future interactions.[349]

The rapid digitisation of the book market has vastly increased the volume of titles available to readers, from mass-market bestsellers to niche works from every corner of Europe. Simply making these works available online does not ensure they will be discovered. To help users navigate this abundance, virtually all major book platforms now employ **algorithmic recommender systems**. These systems automatically suggest books to readers based on various data (such as past purchases, browsing history, or similar users' behaviour) in order to personalise the experience. For example, Amazon's online bookstore famously uses a "*Customers who bought this also bought…*" feature powered by algorithms. This approach, known as *collaborative filtering* (matching users with items liked by people with similar tastes), became a cornerstone of Amazon's success – by 2015, about **30% of all book or e-book views on Amazon were driven by such recommendation features**.[350] Other big retail platforms and e-book services in Europe (such as Fnac.com in France, or Bol.com in The Netherlands) likewise rely on recommendation engines to highlight titles a reader is likely to buy. Social reading and review sites like Goodreads also use algorithms to guide discovery. Goodreads' own recommendation engine, for instance, analyses over *20 billion data points* from its community (ratings, genre shelves, etc.) to predict what books a user will enjoy, mapping how often books are grouped together by readers with similar tastes.[351] The goal of all these systems is to sift through millions of options and present a curated, personalised selection for each reader, thereby **making the digital browsing experience manageable and relevant**.

This algorithmic personalisation has clear benefits. It addresses the classic problem of *information overload*: with thousands of new titles published each year (including many self-published e-books and small-press works), an online

[348] Shaiju, M., 'The substantial impact of artificial intelligence over e-commerce progress with reference to Amazon online shopping', p. 29, (2023), available at: http://117.239.78.102:8080/jspui/bitstream/123456789/2464/1/MEHNA.pdf

[349] West, E., 'Amazon: Surveillance as a Service' (2019), Surveillance & Society, p. 4, available at: https://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/13008

[350] Tech Policy Press, 'Auditing Amazon recommender systems: Insights into risk assessment under the Digital Services Act', (2024), available at: https://www.techpolicy.press/auditing-amazon-recommender-systems-insights-into-risk-assessment-under-the-digital-services-act/

[351] Goodreads, 'Announcing Goodreads Personalized Recommendations', 2011, available at: https://www.goodreads.com/blog/show/303-announcing-goodreads-personalized-recommendations

bookstore or library is far too large to navigate by manual browsing alone.[352] Recommender systems act as intelligent guides, steering readers toward books they might otherwise never find. In theory, this could broaden readers' horizons – uncovering mid-list or niche European novels that match an individual's interests, for example, rather than only the marketing budget "blockbusters." Well-tuned algorithms can **help match niche content with the niche audiences who would appreciate it**, which is increasingly important for promoting Europe's cultural and linguistic diversity in the digital age.

However, as discussed in earlier sections, the way these algorithms operate in practice raises some concerns regarding the discoverability of diverse European cultural content. While personalisation is key to enhancing user engagement, it may also limit exposure by **reinforcing users' existing preferences**. These effects potentially underline the importance of ensuring that recommender systems remain calibrated to promote a broad and diverse range of Europe's literary output.

One key issue is **opacity and commercial bias in algorithmic rankings**. Many book recommendation algorithms are essentially black boxes from the user's perspective – the criteria they use (whether it's sales data, user ratings, click-through rates, etc.) are not transparent. What is known is that these systems tend to heavily favour popularity. Most online retailers' algorithms have a built-in bias towards books that are already selling well or have high engagement metrics, since those signals predict overall user satisfaction (and revenue) more readily.[353] In practice, this means **bestsellers and anglophone titles can dominate the recommendations**, making it hard for lesser-known or culturally specific works to surface.

Another closely related phenomenon is **"popularity bias,"** which can reduce diversity in recommendations. Popularity bias means that items which are already popular tend to be recommended even more, while less popular items remain hidden – a feedback loop that **flattens diversity** in what readers see.[354] This is especially problematic in a culturally diverse region like Europe, where popularity can be self-reinforcing along language and market size lines. For instance, English-language books (often from the US or UK) historically receive more global readership. Recommender systems trained on global user data will reflect that imbalance. **Research confirms that many common book recommendation algorithms end up over-recommending books by American authors** relative to other nationalities – in one analysis, some algorithms' top suggestions were *up to 80% American authors*.[355] This happened

[352] Aldus Network, 'Discoverability of books in a granular context', (2024), available at: https://www.aldusnet.eu/k-hub/discoverability-books-granular-context/

[353] Ibid.

[354] Daniil, S., Cuper, M., Liem, C. C. S., Ossenbruggen, J. van, & Hollink, L., 'Hidden Author Bias in Book Recommendation' (2022), available at: https://research.vu.nl/files/170872491/2209.00371v2.pdf

[355] Daniil, S., & Hollink, L., 'Estimating Bias in Book Recommender Systems' (2025), ERCIM News, (2025), available at: https://ercim-news.ercim.eu/en141/special/estimating-bias-in-book-recommender-systems

even though the algorithms had no direct knowledge of authors' nationalities; it arose indirectly because past popularity (itself influenced by market size and marketing power) skewed the training data. The result is that European readers might mostly see Anglo-American bestsellers in their "recommended for you" feed, **while books from smaller EU languages or minority cultures may be less frequently algorithmically promoted**. In short, the personalisation engines often optimise for engagement in ways that can sideline diversity of voices.

The **implications for cultural and linguistic diversity** are significant. If algorithms primarily promote what is already popular or similar to a user's past consumption, they risk homogenising exposure to culture. Recommender systems, as private as their design may be, have become gatekeepers for what people read.

To better grasp how algorithmic recommendations influence book discoverability, it helps to consider a few concrete examples and use cases in the European context:

- **Major online retailers (e.g. Amazon, Fnac, Kobo):** These platforms use algorithms at nearly every step of the customer journey. When a user views a book, they are shown a carousel of "Related" or "Customers also bought" titles determined by machine-learning models processing huge datasets of buying behaviour. If one searches for a title or topic, the search results and ranking are also algorithmically tailored (often favouring bestsellers or titles with high ratings). The net effect is a highly personalised storefront for each user. These systems unquestionably help readers find books akin to what they already enjoy, but as noted, they can marginalise content that doesn't already have a strong foothold.
- **Book recommendation websites and apps (Goodreads):** Goodreads algorithms consider which books appear together on users' digital bookshelves, how users rate them, and what themes they associate with them. Goodreads is using multiple proprietary algorithms to connect readers with new books based on the collective tastes of its 125 million members.[356] This community-driven approach can sometimes highlight more diverse or idiosyncratic picks than a pure sales-driven retailer algorithm.
- **Library and public sector platforms:** Even public and educational book platforms are adopting recommender technology. Users today expect some level of smart suggestions, so national and university libraries in Europe are experimenting with recommendation features in their catalogues.[357] A library's mission is different from a retailer's – it aims to

[356] Goodreads, 'Announcing Goodreads Personalized Recommendations', (n.d.), available at: https://www.goodreads.com/blog/show/303-announcing-goodreads-personalized-recommendations

[357] Daniil, S., & Hollink, L., 'Estimating Bias in Book Recommender Systems' (2025), ERCIM News, (2025), available at: https://ercim-news.ercim.eu/en141/special/estimating-bias-in-book-recommender-systems

encourage exploration and equitable access rather than boost sales. This means library-developed recommenders could deliberately include a wider variety of materials (e.g. ensuring that not only the most-borrowed books are suggested, but also works from underrepresented authors or topics relevant to cultural heritage). Early results in the library context show the same issues of popularity bias – without careful design, even a library's recommendation system can end up mostly suggesting English bestsellers, because those have the most circulation and because those have the most circulation data. [358]

- **Collaborative Book Platforms and Indie Initiatives:** Outside of pure algorithms, there are also collaborative digital tools aimed at improving discoverability. For example, in Spain independent bookstores created the online platform **"**Todos tus libros" ("All Your Books"), which aggregates their catalogues. The site relies on a strong search engine and crowdsourced curation – a user can search across hundreds of small bookstores for a title or browse curated lists. This kind of initiative helps diverse content be findable through collective data-sharing, counteracting the dominance of a single retailer's algorithm.[359] Similarly, some European publishers use services like Jellybooks (which provides reader analytics) or cooperate with specialty recommendation newsletters to get their titles onto readers' radars.[360]

5.1.3.2. Search engines

Search engines have become **key gatekeepers for readers looking for books**. Whether a person is searching for a specific title or exploring new reading options, they often start with a general-purpose search engine like Google or Bing. These search platforms scan the web and return links to book retailers, author websites, reviews, or library catalogues – essentially acting as the first point of discovery for literary content. Crucially, appearing on the first page of search results is vital: studies show that the vast majority of users only click results on page one (capturing over *90%* of web traffic).[361] In practical terms, if a book or author's site doesn't rank highly, it is far less likely to be seen by potential readers.

General-purpose search engines operate on complex algorithms that determine which results appear first. In simple terms, these algorithms try to show the *most relevant* and *useful* pages for a given query. They use hundreds of signals – for example, matching the keywords a user typed, analysing how many other sites link to a page (which suggests credibility or popularity), and

[358] Ibid.

[359] Aldus Network, 'Discoverability of Books in a Granular Context', (2024), available at: https://www.aldusnet.eu/k-hub/discoverability-books-granular-context/

[360] Ibid.

[361] Darwill, 'The Power of Ranking on Google's First Page', (n.d.), available at: https://www.darwill.com/the-power-of-ranking-on-googles-first-page

measuring user behaviour (like whether people click on or stay on a result).[362] The exact formulas are proprietary, but the goal is to help users find what they're looking for. Importantly for book discovery, this means popular or well-linked content often rises to the top. A search for a bestseller's title will likely surface big retailer links or Wikipedia entries first, while a search for a topic (say *"best European historical novels"*) will show pages that the engine deems authoritative (perhaps major media lists or large booksellers).

For example, when someone searches for a book by keyword, the algorithms might favour results that many others clicked on or that have strong relevant keywords. This can create a feedback loop: books that are already well-known or promoted get more visibility, while lesser-known titles might be buried deep in the results. EU regulators have noted that *"algorithmic ranking determines visibility online"* and can essentially *"make or break"* a business's success – a principle that applies to publishers and authors as much as any online business.[363] To address this, the EU has begun requiring more transparency from platforms about their ranking criteria, so that businesses (including book publishers) can understand how to improve their online presence.

In addition to Google or Bing, readers often use **internal search engines on book platforms**. The most prominent is Amazon's search bar, but others include Google Books, Kobo, or national e-bookstores. These internal searches are crucial when readers are ready to find or purchase a book. However, they operate a bit differently. Amazon's search algorithm (often referred to as the A9 algorithm) is tailored for shopping – it prioritises results based on relevance *and* likelihood of purchase. This means factors like sales history, customer reviews, and conversion rates (how often people buy after clicking) heavily influence which books show up first. In essence, Amazon is trying to show the book you are most likely to buy. Keywords still matter: Amazon allows publishers and authors to provide keywords and metadata, and having a keyword in the title, subtitle or description boosts relevance in Amazon's search results. But even with good keywords, a book that *engages buyers* (through clicks and sales) will gain more visibility over time.

Other platforms have their own search systems. Google Books lets users search within the text of millions of books and often shows snippets – its ranking might consider how closely the content inside a book matches the query. This can help discover nonfiction or academic texts, for instance. Meanwhile, e-book platforms like Kobo or regional online bookstores also rank results by mix of relevance and popularity on their site. Broadly, internal search engines share a common trait: they not only connect readers to books, but also use algorithms designed around

[362] Google Developers, 'Ranking Systems Guide', (n.d.), available at: https://developers.google.com/search/docs/appearance/ranking-systems-guide

[363] European Commission, 'European Commission publishes ranking guidelines under the P2B Regulation to increase transparency of online search results' (2020), Shaping Europe's digital future, available at: https://digital-strategy.ec.europa.eu/en/news/european-commission-publishes-ranking-guidelines-under-p2b-regulation-increase-transparency-online

the platform's goals (sales for marketplaces, or content relevance for Google Books). The impact is that a book's placement in these internal search results can dramatically affect its sales and readership. If a novel appears at the top of Amazon's, it will outsell a competitor buried pages later.

The way search engines rank results has a direct effect on the visibility of diverse European content – including books in minority languages or from smaller markets. Europe's rich tapestry of languages and literary traditions is a point of pride and policy concern. Yet online, a few major languages dominate. Smaller European languages (from Irish Gaelic and Basque to Slovenian or Latvian) have comparatively little content online. In practice, this means that if someone searches the web broadly for a book or topic in a lesser-used European language, the algorithms might not yield rich results – or might substitute more dominant language content. Even within a more commonly spoken language like Polish or Greek, local literature can struggle for attention if the search query is in English or if the engine deems an English source more relevant.

These algorithmic tendencies can **inadvertently sideline minority languages and smaller markets**. Popular global titles (often Anglo-American bestsellers) or translations put out by big publishers get picked up easily by the algorithms, whereas a novel from a small Estonian press might not surface unless one searches very specifically for it.

Given the high stakes of search visibility, publishers, platforms, and authors actively engage in **search engine optimisation (SEO)** to boost their books' discoverability. In non-technical terms, SEO means tweaking how a book's information appears online so that search engines consider it relevant for certain searches.[364] This can involve a range of tactics. Publishers will carefully craft book titles, subtitles, and descriptions to include important keywords that readers are likely to search. In the context of internal search engines like Amazon, SEO often means choosing the right categories and tags, and even using Amazon's "backend keywords" feature – hidden keywords that improve a book's match with customer searches. An author on Amazon might input synonyms or related terms to broaden their reach in searches.

Platforms themselves **also provide tools and guidance for SEO**. Amazon, for instance, regularly advises publishers on how to optimise metadata because it wants users to find products they are likely to buy. Effective SEO can significantly raise a book's profile. There is an element of competition: larger publishers often have more resources to invest in SEO and marketing, while smaller indie publishers or authors must rely on learning these tools themselves. The result is that SEO strategy shapes which books get surfaced.

[364] Fulton Books (blog), 'An Author's Guide to SEO: Elevating Your Book's Visibility on Amazon' (2024), available at: https://www.fultonbooks.com/blog/an-authors-guide-to-seo-elevating-your-books-visibility-on-amazon/

5.1.3.3. Social cataloguing platforms

Recommendations can be obtained through direct or indirect interactions with others, including within communities of users on online recommendation (or social cataloguing) platforms, which are related to how users engage with platforms.[365] Such specialised websites allow users to go beyond leaving comments under books they purchased, enabling them to catalogue their past and planned reading, collaboratively curate thematic lists, supply metadata, engage in discussions, and build communities of book lovers.[366] Social cataloguing platforms appear to play a more limited role in book discovery compared to online stores. From the results from the consumer survey, half of respondents (50%) reported that they do not use such platforms, while another 14% considered them not important. By contrast, 23% rated them as somewhat important and 13% as very important. This suggests that while social cataloguing services do contribute to book discovery for a subset of readers, their reach is much narrower, and they remain a niche channel compared to more mainstream sources.

Similarly to the case of online bookstores, there is no major platform covering all EU countries to a similar extent. In this regard, Goodreads comes the closest. **Goodreads** is the largest social cataloguing platform for book readers, currently with over 65 million users and over 2 billion books catalogued with 68 million reviews. Goodreads enables users to connect with friends, post their own reading lists, compare previously read books and those that they are planning to read with their friend's reading lists. Goodreads provides personalised recommendations based on the analysis of users' literary tastes and big data collection. Additionally, the platform presents book reviews written by its users community, which can help the discoverability of new books and verify if they are fitting to the user's personal taste.[367] As a 'social cataloguing' platform (due to its features which allow users to keep track of books they are reading, cataloguing them and sharing those lists with others and in most cases also with comments and ratings[368]), Goodreads differs from other online books platforms, which mostly provide e-commerce features.[369] As part of its Reviews Partner Programme, Goodreads licenses the users' reviews to third parties such as publishers, newspapers and Google Books.[370] The biggest beneficiary of data

[365] Fulton Books (blog), 'An Author's Guide to SEO: Elevating Your Book's Visibility on Amazon' (2024), available at: https://www.fultonbooks.com/blog/an-authors-guide-to-seo-elevating-your-books-visibility-on-amazon/ .

[366] Boot, P., '"A pretty sublime mix of WTF and OMG": Four explorations into the practice of evaluation on online book reviewing platforms' (2025), Cultural Analytics, available at: https://culturalanalytics.org/article/68086-a-pretty-sublime-mix-of-wtf-and-omg-four-explorations-into-the-practice-of-evaluation-on-online-book-reviewing-platforms

[367] Goodreads, 'About Us', (n.d.), available at: https://www.goodreads.com/about/us

[368] Dimitrov, S., Zamal, F., Piper, A., & Ruths, D., 'Goodreads Versus Amazon: The Effect of Decoupling Book Reviewing and Book Selling', ICWSM Workshop Proceedings, (2021), available at: https://ojs.aaai.org/index.php/ICWSM/article/view/14662

[369] Ibid.

[370] Ibid.

collected from the Goodreads users' profiles is Amazon, which after purchasing the platform in 2013, started to use data concerning books that users are planning to read to promote selectively the discounts on e-books, available on its website.[371] Reader generated reviews are also available through digital reading platforms such as Amazon-Kindle.[372] Owned by the global-reaching Amazon, Goodreads is primarily focused on its US user base. It is likely however that due to its size, it retains meaningful numbers of users across EU countries. Another notable US-based platform, **LibraryThing**, provides language support for most EU languages, but despite this feature retains a much smaller user base of around 3 million users (and a catalogue of over 200 million titles).

Across the EU, many countries host their own **national platforms for book discovery**. In some cases, there are even multiple platforms within a single country, and in certain local markets these platforms surpass the popularity of international services. Although the core features of these platforms are generally similar—such as book reviews, recommendations, and reading lists—they tend to be more effective in supporting local languages and offering better coverage of national publishers. However, their reach and popularity vary greatly across Europe. While some platforms maintain a strong foothold in their markets others attract less engagement. In some countries, multiple platforms coexist and thrive. As an interesting example of a locally active platform, the French **Gleeph** (established in 2015), provides a feature for enhancing book discoverability and fostering physical books stores – the 'local Bookstore Finder' informs the users if a desired book is available at a nearby bookstore, encouraging local purchasing. Examples of EU funded platforms have been described in chapter 3.

5.1.3.4. Online subscription platforms and audiobooks

Online book streaming platforms are a new business model for books which also affects the discoverability of content. These platforms became especially popular in Scandinavian countries, where they offer both e-books and audiobooks.[373] Similarly, to music streaming platforms, online book subscription platforms offer **unlimited access based on a monthly subscription**.[374] Subscription to audiobooks services also allows readers to keep the recordings even if they decide to stop their subscriptions.[375] These book streaming platforms have

[371] Ibid.

[372] Zhang, H., Buchanan, G., & McKay, D., 'Hey Alexa, What Should I Read? Comparing the Use of Social and Algorithmic Recommendations for Different Reading Genres', in Lecture Notes in Computer Science, (2021), available at: https://link.springer.com/chapter/10.1007/978-3-030-71292-1_27

[373] Spjeldnæs, K., 'Platformization and Publishing: Changes in Literary Publishing', Publishing Research Quarterly, (2022), available at: https://link.springer.com/article/10.1007/s12109-022-09912-2

[374] Ibid.

[375] Hill, S., 'The Best Ebook Subscription Services for Every Kind of Reader', Wired, (2023), available at: https://www.wired.com/gallery/best-ebook-subscription-services/

rapidly developed through leading companies such as Storytel and Fabel.[376] The streaming platforms claim that the core idea behind their operation is to develop the accessibility of literary content by allowing users to experience it at anytime and anywhere.[377] Whilst another potential channel for book discovery, the role of these platforms appears somewhat limited among respondents to the consumer survey. Nearly half (48%) indicated that they don't use these apps for discovering books, and another 15% considered them not important. By contrast, 23% viewed them as somewhat important and 14% as very important. This indicates that while digital reading apps and subscription platforms serve as a meaningful discovery tool for a subset of readers, for many they are not a central source of finding new books.

Audiobooks are especially popular medium of engagement among users of book streaming platforms[378], and were responsible of 10% of sales in Norway in 2018, which increased to 24% in 2021.[379] Major players in this market include Storytel, Kobo or Amazon's Audible, with Spotify recently also rolling out the option to listen to audiobooks on their platform in several English-speaking countries. The possibility to stream an audio version of a book offers a different reading *experience* than physical books or e-books and provides experimental way to access literature content.[380] Due to the subscription based model of operation of streaming platforms, their success is connected rather to the length and number of subscriptions than to purchase of content.[381] Therefore, users' satisfaction, resulting not only from offered books but also from the users' experiences, is based on technical solutions (such as the various facilitators used to stimulate engagement) and the presentation of content.[382]

Modern book streaming platforms focus on creating the network between content providers and customers, for which demand becomes more important.[383] The subscription model is also breaking the connection between customer price and consumption, which destabilises the relation between a single

[376] Kristensen, L.-B., and Lüders, M., 'Convenient and worth the price? Identifying early users and predicting future use of book streaming services', Convergence: The International Journal of Research into New Media Technologies, (2022), available at: https://journals.sagepub.com/doi/epub/10.1177/13548565211057516

[377] Storytel, 'This is Storytel', (n.d.), available at: https://www.storytelgroup.com/en/about-us/

[378] Ibid.

[379] Ibid.

[380] Kristensen, L.-B., and Lüders, M., 'Convenient and worth the price? Identifying early users and predicting future use of book streaming services', Convergence: The International Journal of Research into New Media Technologies, (2022), available at: https://journals.sagepub.com/doi/epub/10.1177/13548565211057516

[381] Ibid.

[382] Kristensen, L.-B., and Lüders, M., 'Convenient and worth the price? Identifying early users and predicting future use of book streaming services', Convergence: The International Journal of Research into New Media Technologies, (2022), available at: https://journals.sagepub.com/doi/epub/10.1177/13548565211057516

[383] Senftleben, M., et al., 'From Books to Content Platforms – New Business Models in the Dutch Publishing Sector', (2017), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2904116

copy of a book and economic value.[384] As in other sectors, the use of streaming platforms is said to result in decreasing of the profit of authors, which can lead to asymmetrical relations and reduction of overall range of published books.[385] Additionally, most of the content provided by streaming platforms has an audiobook version.[386] This form requires publishers to make higher investments per title, as the production is more costly, but profit from the streaming platform is lower than from selling for example a hard copy of a book.[387] When it comes to the influence of the development of streaming platforms on literary content, it is reported that streaming platforms favour specific genres of books.[388] Types of titles that seem to suit the audience of streaming platforms include true crime, commercial fiction, and professional 'How to' books.[389]

E-book subscription services are a means for readers to engage with a large quantity of authors and titles without the need to physically go to a library or a bookstore.[390] These subscriptions are offered in various forms and on many platforms. This market has grown in recent years due to the convenient models of usage and the cost-effective ways to explore the various interests of readers.[391] Moreover, it is a way for readers to also discover books of self-published authors or lesser-known ones.[392] Additionally, when it comes to the newest releases, e-book platforms often grant earlier access. This allows readers to enjoy a title before the official physical release, which generates early-on marketing and spread of the book among more people.[393] Amazon's **Kindle Unlimited** is the major e-book subscription service with a selection of over a million titles.[394] It is particularly used by readers who are interested in indie and self-published authors.[395] A disadvantage for some is that Kindle does not allow access to larger publishers such as Penguin Random House, Simon & Schuster, Hachette,

[384] Kristensen, L.,, and Lüders, M., 'Convenient and worth the price? Identifying early users and predicting future use of book streaming services' (2022), https://journals.sagepub.com/doi/epub/10.1177/13548565211057516

[385] Ibid.

[386] Spjeldnæs, K., 'Platformization and Publishing: Changes in Literary Publishing' (2022), https://link.springer.com/article/10.1007/s12109-022-09912-2

[387] Ibid.

[388] Kristensen, L., and Lüders, M., 'Convenient and worth the price? Identifying early users and predicting future use of book streaming services' (2022), https://journals.sagepub.com/doi/epub/10.1177/13548565211057516

[389] Ibid.

[390] Bidilica, M., '15 Best Ebook Subscription Services [Options for Readers, Authors & Publishers]' (2024), https://publishdrive.com/best-ebook-subscription-services.htm

[391] Infinity Business Insights, 'Digital Book Subscription Service Market Expands Rapidly, Unveiling Rich Content Libraries and Seamless Reading Experiences for Subscribers 2024–2030' (2024), https://www.openpr.com/news/3488445/digital-book-subscription-service-market-expands-rapidly

[392] Bidilica, M., '15 Best Ebook Subscription Services [Options for Readers, Authors & Publishers]' (2024), https://publishdrive.com/best-ebook-subscription-services.htm

[393] Ibid.

[394] Ibid.

[395] Ibid.

HarperCollins and Macmillan. Kindle subscriptions have a rating system, allowing users to comment and base their purchasing choices on other readers' ratings.[396]

5.1.3.5. Social media

Social media is becoming an increasingly important pathway for book discoverability. Social media platforms such as TikTok, Instagram, YouTube, and Twitter have significantly transformed the books and publishing industry, introducing new experiences for readers and authors, stimulating interaction and engagement.[397] Dedicated book communities on these platforms, such as BookTok on TikTok or Bookstagram on Instagram significantly boost book sales and revitalise existing works.[398]

BookTok is a subcommunity on TikTok that focuses on books and literature, where users create videos reviewing, discussing, and recommending books they have read, which range in genre but are mainly focused on young adult fiction, young adult fantasy, and romance. BookTok emerged in early 2020, during the first stages of the COVID-19 pandemic. In a relatively short time, BookTok had become a major factor in the publishing industry, emerging as an important source of book discoveries.[399] The platform demonstrated enough power to influence overall book sales numbers while also helping some authors come out of obscurity and make them best-selling writers (*ripples*).[400] Statistics from 2023 show that in 2021, BookTok influenced the selling of around 20 million books, representing over 2.4% of the total book sale count that year worldwide. These numbers also represent nearly half of the books purchased from social media in the same year.[401] Physical bookstores also dedicate tables and sectors to books recommended on TikTok, further showcasing the significant influence that the community has.[402]

The BookTok community has gained significant influence on young booklovers in recent years. The hashtag #booktok on TikTok has been viewed almost one hundred billion times since April 2023.[403] Regarding the impact of BookTok on reading habits, a survey conducted in the UK demonstrated that almost two-thirds (59%) of 16-25-year-olds express that BookTok has helped them discover a

[396] Ibid.

[397] Nielsen BookData, 'Examining the BookTok Potential' (n.d.), available at: https://nielsenbook.co.uk/examining-the-booktok-potential/

[398] Ibid.

[399] Ibid.

[400] Ibid.

[401] Curcic, Dimitrije, 'BookTok Statistics' (2023), available at: https://wordsrated.com/booktok-statistics/

[402] Guehring, K., 'From BookTok to Bookshelf: Algorithms and Book Recommendation on TikTok' (2023), available at: https://bora.uib.no/bora-xmlui/bitstream/handle/11250/3072775/MAThesis_FinalVersion.pdf?sequence=1&isAllowed=y

[403] Rozaki, E., 'Reading between the Likes: The Influence of BookTok on Reading Culture' (2023), available at: https://studenttheses.uu.nl/bitstream/handle/20.500.12932/43888/0962619-rozaki-e-master-thesis.pdf?sequence=1&isAllowed=y

passion for reading. In addition, the same research concludes that, for two-thirds of participants, BookTok has inspired them to read a book that they would never have considered otherwise.[404]

One notable impact of BookTok on cultural diversity has been the **increased sales of English-language books across Europe**. Since most books are showcased on TikTok in their English versions, English sales have accelerated in recent years, with this trend being especially notable in Scandinavian countries, the Netherlands, and Germany. Booksellers in the Netherlands claim that many young people prefer to buy books in English (even if Dutch is their first language) because these are the books they encounter and wish to share on BookTok.[405] However, it has also been noted that BookTok has also allowed creators from various backgrounds the platform to promote and spotlight underrepresented authors and communities, showing that readers are eager for diverse books, and their engagement significantly fosters the discoverability of culturally diverse literature.[406] Numerous creators help promote diversity and inclusivity, by being part of the book community on TikTok. For instance, Kaley (@chronicallybookish) reviews and recommends books representing people with disabilities, drawing from her experience with chronic illness. Kendra (@kendrareads) promotes books featuring people of colour. Another example is the TikTok account @readwithsyll, which recommends 'unpopular books' and highlights literature with mental health themes. Finally, Azanata Thakur (@azantareads) is a Muslim woman of colour, who creates videos on TikTok supporting Muslim authors and recommending lesser-known across #BookTok.

Bookstagram is among the most popular online book communities alongside TikTok, for which the term derives from a hashtag Instagram users created for book-related posts.[407] The bookstagram trend has been growing since 2014 and has had positive effect on book publishing, having its peak during the COVID-19 pandemic, where book-related content on Instagram increased with 31%.[408] Currently, the posts on Instagram with #bookstagram mentioned are over twenty million.[409] Bookstagram has influenced authors to create their own account with the aim of enhancing the author's book sales. The most popular

[404] Publishers Association, 'The BookTok Generation: How Social Media is Transforming Gen Z Reading Habits' (2022), available at: https://www.publishers.org.uk/wp-content/uploads/2022/11/BookTok-for-WEBSITE.pdf

[405] NYT News Service, '#BookTok to blame? English-language books are filling Europe' (2024), available at: https://timesofindia.indiatimes.com/world/europe/booktok-to-blame-english-language-books-are-filling-europes-stores/articleshow/110857560.cms

[406] Ibid.

[407] Kokko, S., 'Encouraging Reading on Social Media' (2023), available at: https://gupea.ub.gu.se/bitstream/handle/2077/79256/FINAL%20THESIS%202023-082_Kokko.pdf?sequence=1&isAllowed=y

[408] Rutland, C., 'The Rise and Influence of Bookstagram' (2020), available at: https://crutland1.medium.com/the-rise-and-influence-of-bookstagram-f32321780926

[409] Kokko, S., 'Encouraging Reading on Social Media' (2023), available at: https://gupea.ub.gu.se/bitstream/handle/2077/79256/FINAL%20THESIS%202023-082_Kokko.pdf?sequence=1&isAllowed=y

Bookstagrammers can attract hundreds of thousands of followers, giving them the platform to break into traditional book publishing. In addition, they can also contribute greatly to the promotion of the book and expand its audience. In relation to the high success of Bookstagram, a report called 'The #bookstagram: distributed reading in the social media age' argues that it results in the sensual and personal way readers can share acts of reading with others.[410]

Data from the consumer survey show a mixed influence on book discovery. The largest share of respondents (34%) rated these platforms as somewhat important, while 13% considered them very important. At the same time, however, a considerable proportion remain disengaged: 31% reported that they don't use these platforms for discovering books, and 22% regarded them as not important. This indicates that while video-based social media is emerging as a significant channel for book recommendations—particularly through trends like BookTok—it is still far from universally adopted across readers.

The consumer survey also shows that these platforms play a dual role: readers both actively search for recommendations and unintentionally encounter book content through their feeds. A majority (68%) sometimes or often look for book recommendations on social media, while 32% never do so. Unintentional discovery is even more widespread: 90% sometimes or often come across relevant books in their feeds, highlighting the central role of algorithmic exposure. When examining the types of books discovered, the findings are mixed. A clear majority (64%) agreed that they discover more books in general thanks to social media, confirming its importance as a discovery channel. However, only around a third (34%) reported discovering more authors from their home country, and similar proportions felt they encounter more authors from other European countries (37%) or greater diversity in author nationality (40%), suggesting that while social media broadens book discovery overall, it contributes less to the visibility of European or locally authored works.

Language adds another layer to this pattern. A significant share of readers (43%) stated they are more likely to read books in English due to social media, compared to 29% who disagreed. This underlines **the dominance of English-language content on global platforms and suggests that social media may reinforce linguistic concentration rather than fostering multilingual diversity**.

[410] Talbot, D., 'Impact of Social Media on Book Publishing Industry' (2023), available at:https://wordsrated.com/impact-of-social-media-on-book-publishing-industry/

5.2. Trends and consumption patterns

Key Findings:

- Reader preferences indicated from the consumer survey show strong loyalty to home-country authors, while openness exists toward UK, EU, and global literature.
- At the same time, readers demonstrate broad openness to literature from other EU countries, the UK, and beyond, indicating that strong national loyalty coexists with an outward-looking orientation toward international works.
- Lower engagement with authors from other European countries is mainly linked to structural barriers such as limited visibility, weaker promotion, lack of recommendations, and gaps in translation availability, rather than to active disinterest.
- Visibility mechanisms play a key role in shaping consumption patterns: bestseller lists tend to reinforce already popular titles, while screen adaptations emerge as an important factor in increasing the prominence and discoverability of European works.
- Analysis of bestselling and most-read titles shows that non-national EU works generally account for a relatively small share compared to national and especially non-EU titles, with higher representation mainly observed in smaller or linguistically shared markets.
- Gender diversity among popular authors remains uneven, with women underrepresented across bestseller lists for national, EU, and non-EU titles, although their presence appears somewhat stronger on certain digital platforms.

5.2.1. Readers' preferences and diversity in most popular titles lists

Data from the consumer survey reveals distinct patterns in how readers approach books by authors from their home country, country of residence, within Europe, and beyond. **Strong attachment to home-country authors** stands out clearly. A substantial 70% of respondents reported being *very likely* to read books by authors from their home country, with an additional 26% saying they are *somewhat likely*. This finding underscores a strong cultural proximity effect: readers show clear loyalty to domestic authorship and local literary traditions.

When it comes to the country of residence, the picture is more mixed. While 37% said they are *very likely* and another 31% *somewhat likely* to read such works, a notable 31% indicated they are *not at all likely*. This suggests that **national identity exerts a stronger influence than geographical residence alone in shaping reading preferences**.

For international comparisons, UK authors attract considerable interest. Over half of respondents (54%) reported being *very likely* to read them, and 40% *somewhat likely*, with only a small minority (6%) not open to UK literature. This reflects the strong global influence of British publishing and the wide international reach of English-language authors.

Books from other EU countries are also well-regarded: half of respondents (50%) said they are *very likely* and 44% *somewhat likely* to read them. Similarly, literature from elsewhere in the world enjoys broad acceptance, with 57% *very likely* and *39% somewhat likely*. In both cases, only a small fraction (around 4–7%) expressed no interest.

Taken together, these findings highlight a dual orientation in readers' preferences: on the one hand, **a strong attachment to home-country authors**, and on the other, **a broad openness to international literature, particularly from the UK, other EU countries, and beyond**. The relatively lower enthusiasm for authors solely from the country of residence suggests that cultural identity and shared heritage carry more weight than geographical proximity in driving literary engagement.

Findings from the consumer survey also highlight several key reasons why respondents may be less likely to read books by authors from other European countries. The most common barrier, cited by 41%, is that they *"just don't often hear or read about such books."* This points to a lack of visibility and promotion as a potential issue.

In addition, **structural factors also potentially play** a role: 32% said that *other books are just more easily available*, and 31% noted that *such books don't get recommended* to them. **Language barriers are also evident**, with 17% reporting difficulty in finding translations. By contrast, only 12% indicated that they *don't like authors from other European countries*, suggesting that disinterest is not the main factor. Smaller shares mentioned *other reasons* (13%) or said they *don't know* (8%).

Overall, these findings suggest that the main obstacles are not rooted in unwillingness to read European authors, but rather in **limited availability, promotion, and translation**. Improving visibility and access could therefore encourage more readers to engage with European literature beyond their home countries.

Another widely used form of curation is provided by **online stores through bestseller lists**. These lists typically highlight titles that are currently performing well in terms of sales, thereby giving them additional visibility. Bestseller lists act as a commercial indicator rather than an editorial or community-driven one, yet they play a significant role in shaping what readers are exposed to, as they reinforce popularity and market momentum. Survey results show that engagement with online stores' bestseller lists is fairly common, though not universal. As the survey illustrates, a majority (54%) of respondents reported that

they *sometimes* look at such lists, while 18% said they do so *often*. A significant minority (28%) indicated that they *never* consult bestseller rankings. This suggests that while bestseller lists are a prominent visibility tool within online retail platforms, their influence on discovery varies, with many readers only engaging with them occasionally.

When looking at the bestselling lists and most popular titles across examined international and local platforms, the analysis allows to conclude that **the share of non-national EU titles ranges among less than 5% to 25%** (the latter mostly concerning data from local EU platforms). A few exceptions record higher shares of non-national EU titles in dedicated national stores of international platforms. These mostly concern smaller EU countries sharing language with other EU countries. The share of non-national EU titles is always lower than non-EU books across international and local platforms, while the share of non-EU titles is highly variable ranging from 25% (local EU platforms) to 90% (in international platforms with global target). **The share of non-EU titles often outranks EU titles across international platforms** with notable exceptions in some dedicated national stores of international platforms. **In the case of platforms targeting global audiences EU titles typically comprise below 10% of the most popular titles**. **National EU titles show around 50-60% in the examined local EU platforms**. Data from dedicated national stores of international platforms show much lower percentages. Similarly high rates have only been reached in certain dedicated stores and for a few countries.

Notably, the quantitative analysis discussed above is mostly based only on a subsample of most popular titles and thus does not represent the whole market. It is unclear what the effects would be if long tails of consumption could be included. Still, the most popular titles likely represent a large share of overall consumption and are thus highly relevant. Further data considerations, limitations and methods are discussed in Annex 5.

5.2.2. Gender diversity of bestselling and most read titles

An additional analysis considers the diversity of authors among those popular at different examined platforms. For this purpose, gender was inferred based on first names, using the World Gender Name Dictionary v.2 [WGND][411], as there is no good metadata on author genders available from the data sources used for identifying nationalities. The WGND database provides weights for specific genders whenever a name can pertain to more than one gender. For the analysis presented discussed here, an average is taken for a given country and period for an approximate share of genders among authors and across nationalities. While data missingness is not an issue in this analysis, one should remember that it constitutes approximations (e.g. some names can pertain to different genders -

[411] Raffo, J., 'WGND 2.0' (2021), Harvard Dataverse, available at: https://doi.org/10.7910/DVN/MSEGSJ

these cases are not resolved and instead weights are used for the aggregate measures).

The share of female authors seems to be **below 50% for most countries in the sample**. Importantly, **this finding persists for local, EU and non-EU authors, suggesting that this result is not connected to author nationality or Europeanness**. There are a few exceptions where the share of female authors is notably higher, in particular in the case of digital formats for some of the countries covered by the two international platforms analysed.

5.3. Curation and algorithms

Key findings:

- Community lists, editorial picks and automated recommendations are some of the tools used to boost readers engagement.
- Survey findings show that around two-thirds of respondents consult community lists at least occasionally, while about one-third never use them; similarly, engagement with editorial lists is limited, and recommendation systems are perceived as useful for discovering books in general but less effective in surfacing EU or local authors.
- Evidence from community lists, editorial picks and non-personalised recommendation systems suggests reinforcing popularity dynamics, whereby the examined global platform largely privileges bestsellers and English-language works, while analysed EU-based national platforms give greater weight to domestic authors and some space to other European titles.

5.3.1. Community-driven curation

Community-based recommendation systems offer several discoverability pathways. For one, they introduce features such as booklists, where users can create lists for specific themes and other users can then add further titles. Beyond that, all users can vote on titles within the lists, which reorders them based on vote rankings. These systems thus engage readers in editorial work based on specific themes (chosen by users), and then allow the lists to be reordered according to community preferences.

Consumer survey data show that engagement with such features is mixed. Nearly half of respondents (47%) reported that they sometimes look at lists or automated recommendations generated by other users. A further 21% do so often, while 33% said they never use these features. This highlights that while community-driven recommendations can be a valuable discovery tool, they are not universally adopted, with many readers only engaging occasionally.

5.3.2. Editorial work and interviews

Beyond community-driven services, some platforms provide **curation through their own editors**. These typically include editorial lists of varying length with specific themes or interviews with prominent authors, providing them with additional exposure. Consumer survey results, however, suggest that engagement with platform editorial picks is somewhat limited. 43% of respondents reported that they never consult such picks, while 41% do so only sometimes. Just 15% indicated that they often use platform editorial selections as a pathway for book discovery. This highlights that while editorial curation adds value and visibility for certain titles, it remains a niche discovery tool compared to community-driven recommendations or personal networks.

5.3.3. Non-personalised automated recommendations

Findings from the **consumer survey** confirm readers broadly see recommendation systems (such as *"Readers also bought"*) as useful for **discovering more books in general** (58% agree; only 6% disagree). Yet their contribution to discovering **European authors**, **home-country authors**, or **more diverse nationalities** is much more limited. Only around 28–32% of respondents agreed that such systems help them find EU authors, local authors, or greater nationality diversity, while about half remained neutral and one in five disagreed.

5.3.4. Data observations

To better understand the impact of curation and algorithmic recommendation practices, the research team has collected and analysed data on editorial work and recommendation systems in two local and one global platform. Data from community lists of a global social cataloguing platform allows us to conclude that EU **title appearances seem to reach 10% at most in community driven curation**. **Editorial work in local EU platforms leans heavily into national writers** (e.g. with editorial picks comprising mostly national writers and many non-national EU ones – app. 25%), **which seems to stand in contrast to relevant curation practices in the analysed international platform that only rarely feature European authors**. **On non personalised automated recommendations, local titles are strongly represented in nationally focused platforms**, **whereas European authors appear largely absent from the international one**. By contrast, the examined international platform consistently recommends titles from outside the EU, regardless of whether the browsed title is European or non-European. Notably, for most accurate and robust conclusions, a large-scale analysis would have to be performed that considers a larger sample of local platforms from across all the EU member states, as well as those operating at the global level. Data limitations are further explored and discussed in Annex 5.

5.4. Challenges and barriers

Key findings:

- Limited translation remains a major barrier, restricting cross-border discoverability of European works, while high costs and cheaper English editions reinforce the dominance of English.
- Readers show strong openness to English-language books (over 85%), a trend amplified by social media platforms like BookTok, often at the expense of EU-language titles.
- Whilst the book sector has strong metadata standards, poor and inconsistent application of these standards reduces visibility of many European books online, with smaller publishers particularly disadvantaged.
- Platform fragmentation and lack of interoperability create silos, making it harder for readers to discover or access books across ecosystems.
- Global platforms such as Amazon and Goodreads dominate discovery but largely favour US and anglophone titles, leaving EU authors underrepresented.
- A surge of AI-generated books is flooding digital platforms, risking cultural homogenisation and making it harder for genuine works to be found.
- Author visibility has become central to book discoverability, with personal branding and social media presence often determining reach, though minority authors face structural disadvantages.

Despite its cultural and economic importance, the European books and publishing sector faces a range of challenges that directly affect the discoverability of EU content. Linguistic diversity, high translation costs, inconsistent application of metadata standards, fragmented digital infrastructures, and the dominance of global platforms all create barriers to visibility for European works. At the same time, emerging issues such as the rise of AI-generated content and the need for authors to self-promote further complicate the landscape. These challenges risk narrowing the circulation of diverse European voices and limiting readers' access to the full richness of Europe's literary output.

5.4.1. Language and translation

Europe's linguistic diversity is a source of immense cultural richness and a core element of its shared identity. However, it can also hinder the discoverability of books across different language-speaking regions. Many European books are not translated into other EU languages, limiting their reach and accessibility to a wider

audience. The consumer survey highlights limited translation as one of the key barriers to discovering books from other EU Member States (see section 5.2). **Translation costs are a big challenge in regard to fostering the discoverability of works by diverse European authors**. Interviews with stakeholders have noted that English language books are often cheaper than those which have been translated into other European languages. In the case of some genres, many titles are not even translated into other languages, which diminishes discoverability of books in these genres.[412]

Apart from the aforementioned cost related issues, a major challenge is the fact that there is a notable **growing preference across Europe for English language books**, which is highlighted by the results of the consumer survey. When asked about their likelihood of reading books in English, respondents expressed a high degree of openness. Over half (51%) reported being very likely to do so, while another 34% said they are somewhat likely. Only 16% indicated they are not at all likely to read books in English. These results underline the strong position of English as a global reading language, reflecting both its role as the dominant language of international publishing and the widespread availability of English-language books across genres.

This phenomenon can be attributed to several factors. As English proficiency has risen across Europe, **more readers are comfortable engaging with texts in their original language, as well as books in other languages that have been translated to English**. This trend is particularly notable in countries like the Netherlands, Scandinavia, and Germany, where due to high levels of readers often choose English editions over translated versions.[413] Reading in English allows European readers to access new releases without waiting for translations, enabling them to participate in global literary conversations and trends promptly. In 2022, the European market for English-language books was valued at approximately £4.1 billion (app. €4.8 billion), marking an 8% increase from the previous year.[414] In Germany for example, sales of English-language books rose from €152 million in 2021 to €195 million in 2023, a 27% increase. Similarly, in Spain, sales grew from €76 million to €101 million, a 30% rise over the same period.[415] The BookTok trend has particularly resulted in an increase in sales of English language books as the books recommended via BookTok are mainly in English, which means that most of the readers would prefer to read the recommended book in the same language, rather than its translated version.

[412] Stakeholder Interview

[413] Stakeholder focus group

[414] Denny, N., 'London Book Fair 2024: Rise of English-Language Sales Threatens European Publishers' (2024), available at: https://www.publishersweekly.com/pw/by-topic/international/london-book-fair/article/94584-london-book-fair-2024-rise-of-english-language-sales-threatens-european-publishers.html

[415] Nawotka, E., 'Bologna 2024: TikTok Pushes English-Language Book Sales in Europe' (2024), available at: https://www.publishersweekly.com/pw/by-topic/childrens/childrens-industry-news/article/94830-bologna-2024-tiktok-pushes-english-language-book-sales-in-europe.html

These factors collectively contribute to the increasing preference for English-language books among European readers.

Findings from the consumer survey suggest that readers generally find it straightforward to access books in online stores, though ease varies by category. Books by home-country authors are the easiest to locate, with 78% describing the process as *easy* and only 4% reporting difficulties. Access to editions in the native language is similarly smooth, with *72%* saying it is *easy*. By contrast, finding books by European authors from other countries is somewhat less straightforward: while a majority (57%) still rated it as *easy*, a larger share (33%) said the process is *neither difficult nor easy*, and 9% found it *difficult*. Overall, the results suggest that domestic and native-language literature is highly accessible, while non-national European works face more barriers in visibility and discoverability within online retail environments.

When discussing the financial aspects of translation, it should be noted that **some languages are more challenging and costly to translate due to factors such as linguistic complexity, availability of professional translators, and demand.** This applies not only to minority languages but also to smaller languages with limited translation infrastructure. Furthermore, the linguistic diversity within a country can influence the discoverability of books. In multilingual markets, content availability and visibility may depend on the dominant language of the book industry, reader preferences, and the accessibility of translations. This dynamic can shape which books reach wider audiences and which remain niche. Another aspect of translation which impacts the discoverability of books is the demographics of a country.

5.4.2. Metadata and cataloguing

In a digital environment which is saturated with content, good metadata is important to make book titles visible. This involves accurately and comprehensively describing the book's content, genre, and target audience, therefore helping potential readers finding books through search engines, online bookstores, and recommendation algorithms.[416] However, **incomplete metadata leads to challenges to creating a unified and searchable database**. Often, metadata for European books is incomplete or not detailed enough, reducing the effectiveness of search engines and digital catalogues in helping users find books. Without high-quality metadata, books may not appear in search results or may be misclassified. This will create obstacles for customers to find the specific titles they seek. [417]

Book metadata can include the book title, keywords, ISBN record, images, text, genre, categories, characteristics of the author (such as nationality and gender)

[416] Kharis Publishing, 'Metadata Optimization for Books' (2023), available at: https://kharispublishing.com/kp/metadata-optimization-for-books

[417] Stakeholder Interview

and more,[418] and is important because search engines and algorithmic recommendation systems use it to differentiate, categorise, and identify books when users search for them. Essentially, book metadata acts as labels that help search engines accurately locate and present the right books to users. Therefore, **publishers need to use metadata as a tool since it can have an impact on the discoverability of a book**. The growing number of books impacts the discoverability of books (see section 5.2). Every book has a specific ISBN for identification. With the increased volume of books, the discoverability might be affected negatively, as it will be more difficult to find specific books. The use of ISBNs, while being essential for book identification, also presents a challenge. Each book has a unique ISBN, and with the increasing volume of books, discoverability may be affected as it becomes more difficult to locate specific titles.[419] Furthermore, the quality of metadata is crucial for book discoverability. Incomplete metadata can hinder book searches, as customers rely on detailed information to find the books they seek.[420] ONIX (Online Information eXchange) is an example of a dynamic, XML-based standard for detailed book metadata which has been designed for global scalability and compatibility with multiple languages and scripts.[421] It is widely used by medium and large publishers globally. Smaller publishers often rely on aggregators like Nielson (UK) and BSD, using ONIX indirectly. It is integrated with software solutions for publishers, with the metadata passed through a "supply chain" where all data should ideally remain intact.

Artist nationality remains problematic for identification for books, with inconsistent coverage and definitions applied across the multitude of different services (such as different online platforms, databases, or cataloguing systems). For example, some services might include place of birth, while others provide nationality instead. Still, as some platforms rely on community-supplied information, this data can also comprise inconsistencies (e.g. values such as "England (birth)" inputted in the nationality field). Other services might include some form of tagging for literature from different countries, but this again sometimes produces conflicting results such as two tags attached to one book ("German literature" and "British literature"). Finally, because the book market is highly fragmented, it is then difficult to extend the information from one local platform to other countries and platforms, with the sole existing link comprising the book edition ISBN numbers. However, a local book edition might not necessarily be covered by a platform from another country, leading to further challenges in data matching. This makes it particularly problematic to assess the circulation of European books beyond local markets. Contrary to the feasibility of using language as a proxy for music, books are more difficult to automatically assess in this way as they are typically read in translations in specific countries.

[418] University of British Columbia, 'Library, Archival, and Information (Metadata: Definition and Types)', available at: https://guides.library.ubc.ca/c.php?g=677995&p=5270026

[419] Stakeholder Interview

[420] Stakeholder Interview

[421] Editeur, 'Overview of EDItEUR', available at: https://www.editeur.org/83/overview/

To detect language, one would have to be able to identify the original book edition and then to hope the title is enough for an unambiguous language detection.

Thus, issues of author metadata constituted some of the main challenges in the design and conduct of the quantitative book research in this project. As the data is far from perfect, it is easy to see that any policies targeting specifically the recognition of EU authors will encounter similar issues. Services do not have access to any one determined source of knowledge on artist gender or nationality. When sources exist that cover such information, they typically include better coverage for established writers with international recognition. This in turn means that a bias exists within the metadata coverage itself.

5.4.3. Digital infrastructure and platform fragmentation

The book market is characterised by strong importance of offline channels, and large numbers of local players across different countries. Recommender Platforms play an important role in online discovery but they, again, comprise of singular large players catering predominantly to the US, and several large local platforms distributed seemingly at random across the EU.

European books are available for purchase, and in some cases through subscription or rental models, on numerous digital platforms, each with its own search and recommendation algorithms. This fragmentation could, in theory, make it challenging for users to discover books that are not on their preferred platforms. At the same time, the sheer volume of available titles — often numbering in the millions — has the potential to overwhelm readers, making it difficult to discover new or niche works.

However, it is important to note that this study has not undertaken a systematic comparison of catalogues across platforms, and therefore cannot confirm whether differences in catalogue composition represent a significant issue for stakeholders. Unlike music, where streaming dominates and catalogues are broadly similar across services, book catalogues may vary more substantially, though the extent of this variation remains unclear. A distinct challenge in the book sector, different from music, is the issue of out-of-print works, which can limit availability regardless of platform.

This fundamental difference means that while algorithmic recommenders may play a role in shaping consumption, their impact cannot be directly compared with the music sector. Further research into catalogue composition and availability would be needed to assess whether fragmentation is indeed a major barrier to discoverability in the European book market.

Additionally, there is **a lack of interoperability among digital libraries and bookstores**.[422] This fragmentation results in silos of content that are not easily

[422] Suleman, H., 'Interoperability in Digital Libraries' (2010), in E-Publishing and Digital Libraries: Legal and Organizational Issues (IGI Global), pp. 31–47, available at: https://www.researchgate.net/publication/267954448_Interoperability_in_Digital_Libraries

searchable across platforms, hindering discoverability and access for readers. For instance, a reader might have accounts with multiple services like Amazon Kindle, Apple Books, and Google Play Books, but the lack of a unified search capability means they must search each platform individually to find or purchase a book. This not only inconveniences readers but also limits the potential market reach for authors and publishers, who miss out on opportunities to be discovered by a wider audience.

Moreover, the **absence of interoperability complicates the management of personal digital libraries**. Readers who purchase books from multiple platforms face challenges in organising and accessing their collections seamlessly. Unlike physical books that can be stored together on a single shelf, digital books are often tied to the specific apps and ecosystems where they were purchased. This restriction forces readers to juggle different apps and interfaces, detracting from a cohesive reading experience. It also makes it harder to synchronise reading progress, annotations, and bookmarks across different devices and platforms, further fragmenting the user experience.

Public digital libraries have some challenges such as the lack of uniform organisation, which causes difficulties for users and collaborations between various libraries across countries and across Europe.[423] There are limitations of access to certain books based on consumers location and individual agreements between digital libraries and digital publishers.

For authors and publishers, these silos can mean uneven distribution and visibility. A book that is available on one major platform but not another might lose potential readers who prefer a different ecosystem. This can be particularly detrimental for independent authors who rely on wide distribution to build their audience.[424] Additionally, platform-specific exclusivity deals, like Amazon's Kindle Unlimited, can exacerbate this issue by locking content into one ecosystem and preventing its availability elsewhere. While these deals can offer short-term financial benefits, they can also limit long-term growth by reducing exposure across diverse readership bases.

The industry’s lack of interoperability also stifles innovation in book discovery and recommendation technologies. Cross-platform search engines could leverage data from multiple sources to provide more accurate and personalised recommendations. However, such comprehensive solutions are difficult to develop and implement.

5.4.4. Dominance of global online platforms

As referred to in the previous section, large global giants like Amazon have fundamentally transformed the online book market, creating both opportunities and challenges for authors worldwide. Their vast reach, and significant market

[423] Stakeholder interview

[424] Stakeholder interview

influence have reshaped how books are discovered, purchased, and read. However, this dominance also brings about unique issues, particularly for European authors striving for visibility in a highly competitive space. For instance, the **platform's overwhelming volume of available titles makes it difficult for individual books to stand out, especially those from smaller European publishers or less well-known authors**. Some studies show that recommendation systems disproportionately favour popular books, primarily authored by U.S. writers, while sidelining more culturally specific or experimental works.[425] This algorithmic bias, combined with the overarching influence of international digital platforms, may lead to a "filter bubble" effect, limiting exposure to diverse literary voices and potentially undermining cultural diversity and creativity in the sector. The dominance of global giants can also lead to **cultural homogenisation in the book market** as algorithms and marketing strategies used by these platforms often prioritise mainstream, widely marketable content, which can sideline more culturally specific or experimental works. European authors whose works might reflect unique cultural contexts, languages, and storytelling traditions, may find it difficult to compete with the more universally appealing titles promoted by these platforms. This can result in a loss of cultural diversity in the global literary landscape, as readers are continually exposed to a narrower range of voices and perspectives.

Of particular importance is the growing influence of non-EU market social cataloguing platforms which are growing in popularity across different EU countries, including those with a strong presence of local book recommendation platforms. If these platforms influence book choices across the EU, it may do so through steering the readers towards non-EU titles. The hugely popular TikTok platform has been discussed - in the context of book-related communities such as BookTok (with similar ones existing on Instagram or YouTube - Bookstagram and BookTube, respectively). However, music trending **at the analysed short-form** video platform appears to be heavily skewed towards non-EU music, raising concerns on how **such online communities** may steer European users from EU titles. Similar concerns thus arise for the book sector.

Future policy research should consider not only the current state of the markets as they exist today, but also how they evolve under the influence of platforms operating outside the EU and those targeting primarily non-EU audiences. While the current state of the markets does, in principle, include these platforms, the point here is that their impact may be structurally different from that of EU-based or locally oriented services. For example, algorithms trained specifically for local audiences tend to promote local content more effectively, whereas algorithms designed without distinguishing between audience subgroups may be biased toward non-EU titles. This distinction highlights the importance of examining not just the overall market composition, but also the mechanisms by which content is

[425] Daniil, S., Cuper, M., Liem, C.C.S., van Ossenbruggen, J.R., & Hollink, L., 'Hidden Author Bias in Book Recommendation' (2022), Tech Report, Centrum Wiskunde & Informatica, available at: https://ir.cwi.nl/pub/32644/32644D.pdf.

recommended and consumed. Such analysis could help explain why European titles sometimes remain underrepresented in recommendation environments, despite their presence in the broader market. Further expansion of global platforms could skew the discoverability of EU titles, especially with only few countries having local prominent alternatives.

5.4.5. Generative AI and the discoverability of European literature in the digital age

The rise of generative AI has led to a boom in AI-generated books flooding major digital platforms. On Amazon's Kindle store alone, hundreds of titles have already credited AI tools like ChatGPT as author or co-author – over 200 such e-books were listed by early 2023, with the number "rising daily".[426] This unprecedented volume of **machine-generated content** is raising alarms in the publishing sector. Many of these works are produced in a matter of hours using AI, often **short, low-quality texts** created to capitalise on popular topics or keywords. Industry observers warn that the market is being deluged by these synthetic books, making it harder for readers to discover authentic literature amid the noise.

Digital book platforms like Amazon, Kobo, and self-publishing services are struggling to **stem the tide** of AI-generated material. For example, **Amazon's marketplace has been inundated** with AI-created titles in various genres – from **sports biographies** to recipes – sometimes appearing *days* after a newsworthy event. In one case, multiple 50-page "autobiographies" of English football stars were listed on Amazon immediately after their Euro championship wins, complete with mismatched covers (one even showed an American football).[427] The supposed author had no online footprint yet had over 45 books published in a month. Such rapid proliferation crowds the online shelves with dubious content, potentially **burying legitimate works**. In fact, at peak times in 2023, AI-generated titles reportedly dominated Kindle Unlimited rankings – **80 of the top 100** bestsellers were AI-produced "bogus books" pushed by click-farms to the top of the charts.[428] Publishers note this kind of *information saturation* means genuine titles struggle to gain visibility. Consumers searching for a topic or author may now encounter a dozen AI-written knockoffs before finding the real book, creating confusion and undermining trust.

This flood of synthetic content poses particular challenges for **European literature** and cultural diversity. Europe's literary landscape is rich with many languages, regional voices, and underrepresented authors – all of which could be further marginalised if discovery algorithms are hijacked by mass-produced AI

[426] Reuters, "ChatGPT launches boom in AI-written e-books on Amazon" (2023), available at: https://www.reuters.com/technology/chatgpt-launches-boom-ai-written-e-books-amazon-2023-02-21/

[427] Sky News, "Publishers issue warning on AI-created books imitating sports autobiographies" (2025), available at: https://news.sky.com/story/publishers-issue-warning-on-ai-created-books-imitating-sports-autobiographies-13413325

[428] European Writers Council, "GAI is based on theft" (n.d.), available at: https://europeanwriterscouncil.eu/gai-is-based-on-theft

content. Observers warn of a possible homogenisation of available literature online. If generative AI content "streamlines" creative output to mirror the most common denominators (often English-language or American-centric patterns), distinctive European narratives might be **pushed out of view**. Moreover, AI text generators trained predominantly on mainstream data may struggle to accurately reflect Europe's cultural nuances – leading to **misleading or culturally irrelevant content** being presented to European readers. This raises concerns that important works (especially from smaller languages or minority communities) will become even less discoverable in the digital environment, drowned out by the sheer volume of algorithmically generated books. In short, the **diversity of Europe's literary heritage** – a core value for European culture and a representation of human creativity– could be eroded by a glut of generic AI publications holding little cultural value.

A key issue is the **lack of clear labelling** and resulting consumer confusion. Readers often cannot tell when a book is AI-generated, since platforms do not visibly mark them as such. This has already led to instances of deception and disappointment. In searches for popular titles, customers have unwittingly bought AI-written summaries, imitations or translations, mistaking them for genuine works. Amazon recently had to remove **fake books falsely attributed to real authors**.[429] European publishers worry that readers, overwhelmed by synthetic content of dubious accuracy, will lose confidence in digital book platforms as sources of reliable literature.

European publishers, authors, and cultural organisations are urging policymakers to address these challenges. They stress that human-created literature is a cultural good that needs safeguarding in the digital era. In a joint statement on World Book Day 2025, the European Writers' Council, Federation of European Publishers, and literary translators' federation issued a **call for transparency**: they implore EU Member States and the European Commission to **"protect human-created books" by requiring clear labelling of AI-generated products**.[430] The statement decries the "seemingly uncontrollable influx of fully AI-generated books" and warns that these *"fakes"* are not merely an artistic concern but an economic and societal threat. According to Europe's creative sector, the proliferation of AI-made books is already **taking revenue** from legitimate writers, translators, publishers and booksellers, "endangering the whole European cultural ecosystem".[431] Publishing associations have echoed these worries, with calls for retailers to **clearly warn consumers** when a book is AI-created. Notably, with the use of AI-assisted proofreading and editing tools, the boundary between AI- and human-generated content has become less

[429] The Guardian, "Amazon restricts authors from self-publishing more than three books a day after AI concerns" (2023), available at: https://www.theguardian.com/books/2023/sep/20/amazon-restricts-authors-from-self-publishing-more-than-three-books-a-day-after-ai-concerns

[430] European Writers' Council, European Council of Literary Translators' Association & Federation of European Publishers, "A Call for Transparency Regarding AI-Generated Books" (2025), available at: https://www.ceatl.eu/wp-content/uploads/2025/04/Joint-statement-EWC-CEATL-FEP_final-250422.pdf

[431] Ibid.

distinct, making content labelling difficult. Nonetheless, the consensus is that stronger oversight is needed to prevent synthetic content from overwhelming Europe's literary landscape.

Policymakers are beginning to respond. Major platforms have started taking modest steps – for instance, Amazon updated its policies to limit self-published uploads to 3 books per day and now asks authors to disclose AI-generated material.[432]

5.4.6. Author discoverability

Another challenge pertaining to the discoverability of books is the **discoverability of their authors**. In today's digital environment, where recommendation systems and targeted marketing dominate, readers are rarely exposed to books through organic browsing alone. Instead, it is common for books to be discovered through the visibility of the author or publishing house rather than through the book itself. This shifts the burden of discoverability onto authors and publishers, who must actively promote their profile and brand across social media, interviews, and book tours. In practice, the visibility of the author often becomes the gateway to the visibility of the book.[433] Given that there are so many books on the market, it is difficult to discover books. This is also because more people are discovering books on social media than in bookstores. Lastly, author discoverability also impacts book discoverability because readers find it important to purchase books from authors with whom they share similar views, backgrounds and origins.

[432] The Guardian, "Amazon restricts authors from self-publishing more than three books a day after AI concerns" (2023), available at: https://www.theguardian.com/books/2023/sep/20/amazon-restricts-authors-from-self-publishing-more-than-three-books-a-day-after-ai-concerns

[433] Stakeholder interview

5.5. Opportunities

Key Findings:

- Human translation remains essential for literary works, ensuring nuance, cultural context, and stylistic integrity; EU funding programmes like Creative Europe already support this, but further investment could strengthen translator networks, fair pay, and cross-border circulation.
- Expanding production in e-books and audiobooks in multiple languages increases discoverability across borders, benefiting both native speakers and language learners, while also lowering costs for independent authors and small publishers.
- New technologies make large-scale multilingual audiobook production possible, but they raise concerns about fair remuneration for authors and voice actors, requiring careful policy balance between innovation and sustainability.
- Inclusive collections withing digital libraries and archives can spotlight regional, niche, and marginalised voices, countering dominance of mainstream titles.
- AI-powered search and recommendation tools in digital libraries can highlight overlooked works, improve accessibility, and strengthen representation of diverse European literature.

In addition to the challenges facing the European books and publishing sector, there are also significant opportunities to improve the discoverability of EU content. Emerging technologies, new publishing formats, and the development of digital infrastructures are creating avenues to reach broader audiences, promote linguistic and cultural diversity, and give greater visibility to European authors. By leveraging these opportunities, the sector can strengthen its role in fostering cultural exchange and ensuring that Europe's literary heritage and contemporary creativity are more widely accessible.

5.5.1. Investments in translation

Investing in translation is pivotal for making European literature accessible across Member States and fostering cross-cultural appreciation. Translation is not only a technical exercise but also a cultural investment, ensuring that diverse voices and traditions circulate across linguistic boundaries. Strengthening opportunities for human translation is particularly important in the literary sector, where nuance, cultural context, and stylistic integrity are essential.

EU funding programmes already provide support for translation projects, for example through initiatives under *Creative Europe*, which finances literary translation and cross-border circulation of works. Expanding and reinforcing such opportunities would help sustain professional translators, safeguard cultural

diversity, and ensure that European authors reach audiences beyond their national language communities. Greater investment could also support **training programmes, residencies, and networks for translators**, thereby strengthening the profession and ensuring fair working conditions.

While advanced machine translation technologies offer complementary tools for processing large volumes of text quickly and at lower cost, their role in literary translation remains limited and controversial. Literary works are rich in idioms, humour, and cultural references that machines often misinterpret, meaning human expertise is indispensable. Machine translation can support practical tasks—such as draft translations or accessibility for readers in less-resourced languages—but final versions of literary works require the cultural competence of professional translators.

Future policy efforts should therefore focus on a balanced approach: investing in human translation as the cornerstone of literary exchange, while exploring how technology can responsibly complement this work. Strengthening EU-level funding opportunities, expanding support for translator networks, and ensuring fair remuneration are key steps to guarantee that European literature continues to thrive across languages and borders.

5.5.2. (Multilingual) Audiobooks and e-books as a means to foster discoverability of works

The production of e-books and audiobooks in multiple European languages holds transformative potential for the discoverability of European literature and is becoming an increasing phenomenon. By making content available in various languages, publishers can effectively cater to a broader audience, including both native speakers and those learning new languages. This multilingual approach **significantly expands the reach of European books beyond geographical and linguistic boundaries**. For native speakers, accessing literature in their own language allows for a deeper and more nuanced engagement with the material. This dual benefit helps to bridge cultural gaps and encourages a wider audience to explore and engage with diverse European content. Spotify's collaboration with ElevenLabs has streamlined the creation of AI-narrated audiobooks in 29 languages, making audiobook production more accessible and cost-effective for authors and publishers.[434] Additionally, partnerships like that between Legible and CAMB.AI leverage AI to convert e-books into high-quality audiobooks in over 160 languages, breaking down language barriers and expanding global accessibility.[435] At the same time, while these AI-driven tools hold clear potential to increase the availability of multilingual e-books and audiobooks and to broaden access to European literature across borders, they also raise important questions

[434] Weatherbed, J., “Spotify Is Making It Easier to Release Audiobooks Narrated by AI” (2025), available at: https://www.theverge.com/news/616355/spotify-audiobooks-elevenlabs-ai-narration?

[435] ShareWise, “Legible & CAMB.AI Unlock New Revenue Streams with Global Multilingual Audiobook Access” (2025), available at: https://www.sharewise.com/us/news_articles/Legible_CAMBAI_Unlock_New_Revenue_Streams_with_Global_Multilingual_Audiobook_Access_Legible_Inc_irwpresseen_20250213_1828?

for the cultural ecosystem. In particular, the use of synthetic voices may undercut an important source of income for authors and professional voice actors, highlighting the need to balance technological innovation with fair remuneration and sustainable opportunities for creative workers.

Audiobooks can be a more cost-effective alternative to physical publishing, particularly for independent authors and small publishers, as they eliminate printing and distribution costs. However, audiobook production still involves expenses such as narration and translation, editing, and distribution fees. With the support of several of the platforms previously mentioned, can increase the discoverability of works. E-books reduce the production costs, as printing and assembling books is no longer necessary. This is similar for transport costs, as the retailers can provide consumers with e-books directly through websites or for example via email, straight after purchase, which also eliminates the waiting time. The growing use of e-books also resolves the problem of storage and limited space on bookshelves in physical stores. Additionally, due to digitalisation and development of e-books readers such as Kindle, it has become possible to sell books which would not be published in physical form, which resulted in development of self-publishing. Because production costs can be limited, authors are able to publish their books in digital form. The development of self-publishing results also in the growing number of intermediaries who support authors in transporting manuscript into a book and providing necessary software.

5.5.3. Digital libraries and archives

The creation and expansion of digital libraries and archives offers an important opportunity to **strengthen the visibility of works by European authors**. While some large digital libraries already exist, their scope is rarely truly comprehensive, as collections depend heavily on available resources and on digital licensing agreements, which are themselves often constrained by territoriality. The establishment of broad and inclusive digital collections that encompass a wide spectrum of European literary contributions can significantly enhance the discoverability and accessibility of these works to the public.

Digital libraries and archives also have the potential to **spotlight lesser-known and niche European works** that might not receive attention through traditional distribution channels. However, it is important to distinguish between digital libraries and archives: while the former rely on licences and acquisitions to build their catalogues, the latter may depend on institutional records or specific collection mandates, which can lead to differences in scope and availability. By curating collections that highlight regional authors, experimental genres, and marginalised voices, these platforms can provide a more inclusive representation of European literature. This approach helps ensure that a diverse array of literary voices is represented and discovered, countering the dominance of mainstream or commercially-driven titles.

Advancements in digital technology, such as AI-driven search capabilities and natural language processing, can further enhance the discoverability of European

literature within digital libraries. By incorporating these technologies, **libraries can offer advanced search features, personalised recommendations, and interactive reading experiences** that make it easier for users to find and engage with European works. These innovations can help highlight diverse and previously overlooked texts, increasing their visibility in a crowded digital landscape.

6. Discoverability in other cultural and creative sectors

Key Findings:

- Outside music and books, discoverability analysis across cultural heritage, visual arts, and performing arts remains partial and uneven, due to fragmented data, lower digital maturity, and less established indicators.
- Discoverability is shaped by a combination of digital and analogue routes; online visibility complements rather than replaces physical access, local presence, and word-of-mouth.
- Search engines function as a primary entry point for discovery across sectors, making SEO, indexing, and documentation practices increasingly influential in shaping what cultural content is found.
- What is discoverable online is strongly conditioned by whether and how content is digitised, with disparities in resources and capacity translating into geographic and institutional imbalances in visibility.
- Discoverability pathways often remain language-bound, limiting cross-border circulation and contributing to the concentration of attention on content from dominant linguistic and cultural contexts.
- Inconsistent, incomplete, or poorly embedded metadata reduces discoverability, limits interoperability, and weakens attribution and remuneration across sectors.
- Digital environments tend to favour already-visible institutions and creators, producing long-tail dynamics where a small number of actors capture disproportionate attention.
- While digital platforms can lower access barriers, they also shift responsibility for visibility onto institutions and creators, increasing demands for continuous promotion and digital skills.
- Generative AI both depends on and intensifies existing inequalities in digitisation, language coverage, and metadata quality, while also offering potential gains in translation, enrichment, and preservation if governed responsibly.
- Cross-sector progress in discoverability depends on interoperable data frameworks, multilingual access, skills development, and collective platforms that allow smaller actors to participate on more equal terms.

While the objective of this study is to provide in-depth analysis for the music and book sectors, it complementary **provides a snapshot of the discoverability pathways, drivers and barriers across other cultural sectors**. Where more comprehensive data collection, established indicators, and clearer market dynamics allowed for rigorous assessment in the field of music and books, the evidence base for other cultural and creative sectors is far more limited. As such, the sections that follow on cultural heritage, performing arts, and visual arts should be considered exploratory in scope. These sectors exhibit diverse structures and practices, varying levels of digital maturity, and fragmented data ecosystems, which make systematic analysis challenging within the parameters of this study. Nevertheless, important insights emerge regarding how European works, institutions, and creators are found, accessed, and promoted in digital environments.

6.1. Cultural heritage sector

6.1.1. Introduction to the sector and main discoverability pathways in the sector

As compared to the book and music sectors, the field of cultural heritage has several key differences with important implications for discoverability online. First, the **digitalisation of cultural heritage is not nearly as ubiquitous as in other cultural sectors**: many museum collections remain to be digitised, and monuments or historic sites drive in-person tourism. Further, digitalisation efforts are often applied to different ends. Cultural heritage is largely publicly owned or managed and thus requires a different approach than music or books, where commercial platforms are involved with clear economic interests. Digitalisation in the heritage sector often aims towards heritage preservation, rather than producing heritage objects solely in the digital space.

This is further complicated by the field's definitional boundaries. Tangible cultural heritage is the most well documented and easily identified category, including (but not limited to) "…architectural monuments and sites, museums, libraries and archives".[546] Intangible cultural heritage refers to "…traditions, transmitted knowledge, and expressions of human creativity."[547] Each of these forms of heritage requires different approaches to digitalisation and discoverability. Although great strides have been made through the efforts of policymakers, digital archivists, and heritage institutions, opportunities for growth in this area remain.

While there is an acknowledgment in the literature of a need to increase access,[436] a knowledge gap remains as to the pathways that users take to discover cultural heritage content. This report identifies two important categories from published literature and interviews with experts: digital and analogue paths,

[436] European Expert Network on Culture and Audiovisual (EENCA), 'Platforms on the Future of Cultural Heritage: A Problem-Solving Approach – Report on the Prague Platform on "Cultural Heritage in the Digital Age"' (2019), available at: https://eenc.eu/uploads/eenc-eu/2021/04/21/75dd26b125d0e6ed6896dc3cf43e9b5f.pdf

both avenues for future research and intervention. It is important to note that these paths are not mutually exclusive; stakeholders working in the field emphasise the continued interaction (and mutually reinforcing links) between the digital and analogue in cultural heritage. Further, analogue pathways are still a relevant means for many to discover cultural heritage. This is evidenced in academic literature that notes the wealth of cultural heritage that has yet to be digitised. These can be through word-of-mouth, participation in preservation efforts, collaborations with traditional heritage institutions, local media, events, and conferences.

Compared to analogue (in-person) methods of discovering cultural heritage, such as physical museums and archives, **digital pathways for discoverability in the cultural heritage sector are a relatively recent development**. Efforts to digitise culture in the European Union stretch back to the late 1990s with the Fifth Framework Programme for Research and Technological Development, but accelerated in 2005 with several member states requesting European Union support for the development of a European digital library. **Europeana**[437] emerged from these efforts in late 2008 as a publicly held, open-access digital platform serving the mission of European integration.[438] Through this platform, individual institutions (galleries, museums, archives, and libraries) across Europe can make their digital collections available to the broader public. At present, Europeana provides access to over 60 million digitised cultural heritage records from over 3600 cultural heritage institutions and organisations.[439]

While the strength of the platform is in connecting institutions across national borders, a significant amount of digital cultural heritage assets in Europe are not yet accessible through the platform ([440]).Nevertheless, Europeana has placed an emphasis upon accessibility, encouraging educators, developers, and the general public to engage with its collections.

Multiple stakeholder interviews indicate that **major search engines like Google are the primary pathway that laypeople take to discover cultural heritage**. One interviewee explained that the majority of traffic to Europeana came via Google, especially for specific or niche topics.[441] However, there is a dearth of studies examining how cultural heritage institutions are represented in search

[437] Europeana, 'Europeana', (n.d.), available at: https://www.europeana.eu/en

[438] Manikowska, E., 'Digitization: Towards a European Cultural Heritage', in Cultural Heritage in the European Union: A Critical Inquiry into Law and Policy, pp. 417–444 (2019), Brill Nijhoff, available at: https://brill.com/edcollbook/title/3

[439] European Commission, 'The Europeana platform', available at: https://digital-strategy.ec.europa.eu/en/policies/europeana

[440] The future of Europe's past - Why Member States must do more to advance digitisation of our cultural heritage - Implementation of the 2021 Commission recommendation on a common European Data Space for Cultural Heritage - progress report 2021-2023 https://op.europa.eu/publication-detail/-/publication/8d2435d7-31fe-11f0-8a44-01aa75ed71a1

[441] Stakeholder interview.

engine results and in the outputs of generative AI models, which are increasingly used as search tools.

Whilst Europeana remains a crucial repository of digitised European cultural heritage, more ubiquitous sources also provide pathways to discovery. Along with stakeholder perceptions, research on Wikipedia suggests some interesting discoverability pathways. An analysis of user interaction with 8000 paintings within 10000 articles on Wikipedia suggests that **many forms of cultural heritage are being discovered not through direct searches, but while searching for other topics.** Along with art related contexts, many paintings are also used in non-art contexts such as history, geography, and science articles. Compared to art context articles, these non-art contexts generate a higher number of views of digitised paintings.

Surprisingly, a greater percentage of digitised paintings are consumed via non-art related articles, suggesting the importance of what the authors refer to as "accidental consumption". They argue that traditional cultural institutions like museums could increase their user base by engaging with Wikipedia, facilitating more forms of accidental discoverability.[442] In an experimental pilot project on Wikipedia, researchers found that half of the most highly visited cultural heritage pages are about sites found within the EU. But when disaggregated by language (English, Spanish, French, and Italian), there are clear differences: the Top 5 World Heritage Sites page views were closely linked to language in the case of Spanish (Historic Centre of Mexico City), French (Paris, Banks of the Seine) and Italian (Historic Centre of Rome), where English language views listed global heritage sites (Paris and Rome but also Taj Mahal, The Great Wall, and the Statue of Liberty. This suggests that searches remain within language "silos", where discoverability paths are to some degree dependent upon user language.[443]

6.1.2. Challenges and barriers

While technological developments have increased the possibilities for preservation and interactivity, limitations and barriers remain, complicating digital discoverability potential. These include the digitisation process, difficulties with metadata and open data, network effects, and the use of Artificial Intelligence (AI). It is important to note that these barriers are not distributed evenly across different Member States. Resource availability—whether that be funding or technical knowledge—is highly disparate across and even within countries. [444]

[442] Navarrete, T., and Villaespesa, E., 'Digital Heritage Consumption: The Case of the Metropolitan Museum of Art', magazén, 1(2): 223–248 (2020), available at: https://edizionicafoscari.unive.it/media/pdf/journals/magazen/2020/2/iss-1-2-2020_3AUKRGj.pdf#page=94

[443] European Commission, 'Pilot Project on Big Data: Use of Wikipedia Page Views on World Heritage Sites' (2016), available at: https://ec.europa.eu/eurostat/web/experimental-statistics/world-heritage-sites

[444] Vuijlsteke, C., De Voldere, I., Siongers, J., Lievens, J., De Corte, F., Willekens, M., and Morreel, K., 'Digitale transformatie van de culturele en creatieve sectoren ter voorbereiding van het Belgisch EU-voorzitterschap 2024' (2023), Departement Cultuur, Jeugd en Media, available at:

One stakeholder interviewee noted that while rural areas can be rich in heritage sites, enhancing the online discoverability of these areas is often deprioritised in favour of more urgent issues.[445] Furthermore, such regions may lack economic or human capital to accomplish these projects. A similar dynamic is observed when comparing Eastern and Western Europe – the interviewee noted that fewer resources are often allotted to Eastern European projects. [446] Having greater disparity in geographic representation (due to differences in resource allocation towards digitisation) may create a skewed European digital cultural environment.[447]

6.1.2.1. Digitisation and human barriers

The digitisation process itself is more than a technical exercise; it requires considerable human and financial resources and the cooperation of multiple stakeholders and the navigation of bureaucratic processes at different levels (local, national, European).[448]

While techniques to digitise tangible cultural heritage continue to develop, the field of intangible cultural heritage lags behind.[449] The ephemeral quality of this kind of heritage poses a challenge for practitioners to capture the live and embodied elements in an appropriate form. Advancements in technology such as data sculpting—wherein complex data is transformed into a physical artefact or immersive digital form—have made some headway, but overall a lack of digitisation complicates discoverability.[450]

6.1.2.2. Difficulties with metadata and open data

Once materials are digitised and ready to be included in an online repository, they need to include relevant metadata to be discoverable by users. Metadata is crucial for cultural heritage curation and searchability. **While the field has made significant progress in developing metadata standards and open-data practices, disparities persist in uptake and data quality.** The question of

https://www.vlaanderen.be/publicaties/digitale-transformatie-van-de-culturele-en-creatieve-sectoren-ter-voorbereiding-van-het-belgisch-eu-voorzitterschap-2024

[445] Stakeholder interview.

[446] Ibid.

[447] Russo, A., Jusypenko, S., and Navarrete, T., 'Who Participates and Why in Digital Museums: Capitals and Attitudes for Generation Z' (2024), Lisbon, AIMAC Conference Proceedings, available at: https://www.aimaclisbon2024.org/program/program-detail

[448] For example, a project on making 3D models of medieval fortified churches in Romania did not only need proper equipment but also the approval from church officials, legal approval from local governments, proper coordination with research staff, and for practical issues like whether to cooperate. Because of this, only a small number of digital tools have been implemented, relative to the number of sites. Stakeholder interview.

[449] European Expert Network on Culture and Audiovisual (EENCA), 'Platforms on the Future of Cultural Heritage: A Problem-Solving Approach – Report on the Prague Platform on "Cultural Heritage in the Digital Age"' (2019), available at: https://eenc.eu/uploads/eenc-eu/2021/04/21/75dd26b125d0e6ed6896dc3cf43e9b5f.pdf

[450] Hou et al, 'Digitizing Intangible Cultural Heritage Embodied: State of the Art', Journal on Computing and Cultural Heritage 15(3): 1-20 (2022), available at: https://doi.org/10.1145/3494837

metadata relevance and applicability of audience discoverability, as opposed to internal use, also remains.

Despite the existence of industry standards such as CIDOC CRM, uptake of these remains patchy, leading to uneven metadata quality (stakeholder interview.[451] Key barriers identified by Member States in terms of improving metadata quality include uncertainty or a lack of knowledge about these frameworks, especially for smaller cultural institutions.[452] This resource gap produces varying degrees of data quality. Combined with lower-quality legacy records and the fact that some data still sits in inaccessible private or internal repositories, cultural heritage metadata remains uneven, creating discoverability disparities. Furthermore, inconsistent vocabularies and translation challenges amplify this effect. Europeana has identified multilingualism as a key issue in improving discoverability.[453]

Even with technical standards, academic literature identifies a "semantic gap" between metadata aimed at machine versus human readability.[454] Especially for intangible cultural heritage, which contains information difficult to flatten into controlled fields and categories, metadata standardisation poses challenges in capturing the object in a comprehensible way.

Besides their metadata quality, organisations' open data policy also impacts the discoverability of cultural heritage. A qualitative analysis of three open data ecosystems in art museums found that museum decision-making on open data lacks audience input. The authors argue that these ecosystems could be improved by taking user perspectives into account.[455] The Europeana project DE-BIAS also addressed this issue.[456] Greater emphasis on co-creation and community participation are shifting the emphasis away from a solely top-down approach, including the generation of metadata.[457]

6.1.2.3. Network effects

Related to matters of digital access and metadata availability, another significant challenge to discoverability relates to network effects: particularly those of long-tail and superstar distributions. Evidence from research on Wikipedia shows that

[451] Stakeholder interview.

[452] European Commission: Directorate-General for Communications Networks, Content and Technology, 'The future of Europe's past – Why Member States must do more to advance digitisation of our cultural heritage – Implementation of the 2021 Commission recommendation on a common European Data Space for Cultural Heritage – Progress report 2021-2023', Publications Office of the European Union, (2024), available at : https://data.europa.eu/doi/10.2759/5921820

[453] Europeana, 'Common European data space for cultural heritage – annual report 2024-2025', (2025), available at: https://pro.europeana.eu/post/common-european-data-space-for-cultural-heritage-annual-report-2024-2025

[454] Spurina, M., 'Digitization of Museum Objects and the Semantic Gap.' Heritage, 8(9) p. 369 (2025). Available at: https://doi.org/10.3390/heritage8090369

[455] Booth et al., 'Museum open data ecosystems: a comparative study' Journal of Documentation 78(4), pp. 761-779 (2022). Available at: https://doi.org/10.1108/JD-05-2021-0102

[456] 'DE-BIAS – detecting and cu(at)ing harmful language in cultural heritage collections', (2025), available at: https://pro.europeana.eu/project/de-bias

[457] Stakeholder interview.

most museums have a minimal percentage of their total collection available online. A few "superstar" museums generate the greatest number of views, leading to a distribution which is highly skewed. Part of the reason for this is that unlike music or books users do not seek out cultural heritage sites for the purposes of leisure; they still do so for primarily educational purposes (and completing tasks like homework).[458]. Art UK has proposed a possible solution to this, developing an online portal for public art collections in the UK, currently including over 300,000 works (of which 25% are published under a Creative Commons license) from over 3,400 institutions, visited by 5.3 million users in 2023. With a budget of 1.57 million pounds, they aim to support learning, creativity, and innovation when engaging with collections. Their online services provide a page for discovering based on artist, artwork, people, stories, curations, topics, and art terms.[459]

6.1.2.4. Impact of AI

The challenges above are exacerbated due to the rise of generative AI, which impacts the digital discoverability of cultural heritage. First, there are technical challenges. Of course, what is not digitised cannot be found by AI, so the previously described disparities apply, even with this new technology. **Moreover, AI struggles with multimodal artifacts, symbolism, cultural nuance, oral traditions, and languages with limited datasets, leading to biases in what AI finds**.[460] [461]

Second, AI systems rely heavily on metadata for search, recommendation, and classification. Hence, **as a result of incomplete or inconsistent metadata AI may fail to surface relevant items, suffering from a popularity bias** i.e. amplifying frequently accessed or highly digitised objects, overshadowing lesser-known heritage.[462] Moreover, objects from well-documented cultures dominate search results. In relation to this, AI systems are often trained on dominant languages, and cultural contexts often fail to understand or fairly represent marginalised or non-Western heritage.

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[458] Russo, A., Jusypenko, S., and Navarrete, T., 'Who Participates and Why in Digital Museums: Capitals and Attitudes for Generation Z' (2024), Lisbon, AIMAC Conference Proceedings, available at: https://www.aimaclisbon2024.org/program/program-detail

[459] Art UK, 'Our Impact', (n.d.), available at: https://artuk.org/about/our-impact; Russo, A., Jusypenko, S., and Navarrete, T., 'Who Participates and Why in Digital Museums: Capitals and Attitudes for Generation Z' (2024), Lisbon, AIMAC Conference Proceedings, available at: https://www.aimaclisbon2024.org/program/program-detail

[460] Foka, A., and Griffin, G., "AI, Cultural Heritage, and Bias: Some Key Queries That Arise from the Use of GenAI" *Heritage* 7, no. 11: 6125-6136. (2024), available at: https://doi.org/10.3390/heritage7110287

[461] UNESCO, 'Report of the Independent Expert Group on Artificial Intelligence and Culture' (2025), available at: https://www.unesco.org/sites/default/files/medias/fichiers/2025/09/CULTAI_Report%20of%20the%20Independent%20Expert%20Group%20on%20Artificial%20Intelligence%20and%20Culture%20%28final%20online%20version%29%201.pdf

[462] University of Cambridge, 'From Fragments to Findings: How AI is Transforming Access to Collections' (2025), available at: https://www.ai.cam.ac.uk/blog/from-fragments-to-findings-how-ai-is-transforming-access-to-collections

Interestingly, digitised cultural heritage content is likely used as a training source for generative AI models, given that it is part of the relatively small genre of content that is open-license or public domain. The impact of how this impacts affects the representation of European cultural heritage by AI model output remains to be seen, and is an important avenue for future research.

6.1.3. Trends and opportunities

6.1.3.1. New developments in linked (open) data

As data sharing and collaboration become increasingly important to the cultural heritage sector, efforts to develop linked data solutions have also intensified.[463] Linking data is an effort to make connections between data such that it is legible to machines. The aim is for data to be linked, shared, and reused across systems. Combined with open data principles (making data free to use and distribute), Linked Open Data (LOD) is crucial to increasing discoverability.

But challenges to accomplishing this arise due to institutional differences in generating metadata and a lack of capacity (particularly for smaller organisations). Authors propose a method to overcome this challenge by automating the enrichment of metadata via open knowledge bases. Ontological models have also been used to overcome this challenge, such as the CIDOC Conceptual Reference Model (CIDOC-CRM) which enables the interoperability of diverse metadata schemes.

One solution to this issue is the Europeana Data Model, (EDM) an interoperable framework that accommodates domain-specific metadata standards such as EAD (archives), CIDOC (cultural heritage) or LIDO (museums) but transcends them in more meaningfully linking and enriching diverse European cultural heritage data.[464] EDM helps improve discoverability for users looking for Europeana resources. EDM is the bedrock schema for Europeana's data aggregation and discovery infrastructure – cultural institutions must map their own schema onto EDM before uploading their collections to Europeana. This allows for greater discoverability across institutions, geographies, and collections.

Further, the common European data space for cultural heritage was developed as a flagship initiative of the European Union in 2022.[465] Building on the work of Europeana, it addresses several of the key challenges identified in the field. First, the data space expands and maintains the existing aggregation infrastructure, as

[463] Davis, E., and Heravi, B., "Linked Data and Cultural Heritage: A Systematic Review of Participation, Collaboration, and Motivation", Journal on Computing and Cultural Heritage (JOCCH), 14(2): 1–18 (2021), available at: https://dl.acm.org/doi/pdf/10.1145/3429458

[464] Europeana, 'The Europeana Data Model for Cultural Heritage Factsheet', (n.d.), accessible at: https://pro.europeana.eu/files/Europeana_Professional/Share_your_data/Technical_requirements/EDM_Documentation/EDM_Factsheet.pdf

[465] European Commission, 'The deployment of a common European data space for cultural heritage' (2022), available at: https://digital-strategy.ec.europa.eu/en/news/deployment-common-european-data-space-cultural-heritage

well as supports capacity building among cultural heritage professionals to improve metadata quality. On the audience side, it further develops the API suite to support diverse user needs and expands digital services for the public through communication campaigns and translation actions. This work has and will continue to enhance discoverability of European cultural heritage content online.

6.1.3.2. New techniques to capture cultural heritage

The digitisation of cultural heritage is moved forward by new techniques to capture cultural heritage, often including combinations of 3D modelling and virtual reality.[466] Efforts to increase access to digitised cultural heritage objects using 3D imaging are growing, and alongside these are repositories of said objects. This adds to the challenges posed by metadata generation earlier discussed, including what should be collected and how it should be organised. Several projects funded under the Digital Europe programme innovate in this area.

The project 5Dculture worked on 3D digitisation and VR/AR of cultural heritage. The project aggregated 3D models into a shared data space and made them publicly available for creative reuse in education, tourism, and the cultural and creative sectors.[467] Use cases developed included virtual exhibitions (e.g. historical costumes you could "virtually try on"), interactive 3D city-scapes / 4D city modelling (supporting virtual cultural tourism), and even low-cost holographic souvenirs for tourists.

Another leading example is EUreka3D, which aimed to address the resource gap by supporting capacity building in small cultural heritage institutions for digital transformation.[468] This project ran from 2023-2024, while its successor EUreka3D-XR (2025-2026) offers a toolbox and framework for cultural institutions to create immersive XR experiences.[469] Some of its showcase scenarios include: a virtual visualisation of medieval city walls (in Girona), an XR narrative of ongoing archaeological excavations (at the Bibracte site), and 3D reconstructions used for "on-site XR experiences" (e.g. at historical sites).

In the European Commission Recommendation of 2021 establishing the common European data space for cultural heritage[470], an ambitious target was set for Member States to digitise in 3D all at-risk monuments and sites, as well as half of the most physically visited landmarks by 2030. To accelerate this project, The Twin it! Call to action was launched in 2023, inviting Member States to submit at

[466] Economou, M., 'Heritage in the Digital Age', in A Companion to Heritage Studies, pp. 215–228 (2015), available at: https://www.researchgate.net/profile/Maria-Economou-3/publication/299924369_Heritage_in_the_Digital_Age/links/59c28b48458515af3060ba35/Heritage-in-the-Digital-Age.pdf

[467] For more information, please see: https://5dculture.eu/about

[468] For more information, please see: https://eureka3d.eu/eureka3d-initiative/

[469] Ibid.

[470] Official Journal of the European Union, 'Commission Recommendation (EU) 2021/1970 of 10 November 2021 on a Common European Data Space for Cultural Heritage' (2021), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021H1970&from=EN

least one 3D-digitsed heritage asset to the common data space.[471] The second phase of the project is now beginning after the development of a digital exhibition in mid-2024.

6.1.3.3. Artificial Intelligence (AI) use cases: metadata generation and preservation

Developments in artificial intelligence have impacted both data and preservation practices for cultural heritage. Though not without challenges and considerations – as earlier discussed – this technology can be a crucial tool in advancing discoverability of European heritage content online.

The above mentioned Recommendation developing the data space positioned AI as a means of democratising access to cultural heritage data, including improving discoverability. The AI4Culture platform, funded by the Digital Europe programme, provides a centralised capacity building space to share good practices around AI integration in the European cultural heritage sector. It offers heritage professionals access to a pool of software, datasets, and educational material.[472] Several of these tools, including MINT and SAGE, are meant to assist semantic enrichment and standardisation of metadata for upload to Europeana. This platform helps redress knowledge and skill disparities across cultural institutions, as well as provide crucial support to smaller teams in improving metadata quality.

To address translation challenges, AI is also increasingly being implemented. The Europeana Translate project aimed to use machine translation to increase the multilingual availability of metadata for over 25 million records in Europeana.[473] The tools used in this project were developed under an open license, in order to enable further use by cultural heritage institutions and other interested parties.[474]

AI technologies are also being used to accelerate digital preservation. As part of its ApplyAI strategy, the European Commission plans to support the scale up of AI use in creating realistic and accurate 3D digital twins of cultural sites and artifacts.[475] Building on the earlier work of the Twin it! Campaign earlier described, this action is planned to be implemented in Q3 2026. Additionally, the 5DCulture project incorporates AI and machine learning tools in its effort to generate 3D assets.

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[471] Europeana Pro, 'Twin it! Call to action: Boosting 3D for Europe's culture by 2030', (2024), available at: https://pro.europeana.eu/post/twin-it-call-to-action-boosting-3d-for-europe-s-culture-by-2030

[472] For more information, please see: https://ai4culture.eu/

[473] Europeana Pro, 'Europeana Translate' (2023). Available at: https://pro.europeana.eu/project/europeana-translate

[474] Beeld & Geluid, 'Europeana Translate' (2023), available at: https://www.beeldengeluid.nl/en/research/projects/europeana-translate

[475] European Commission, 'Apply AI Strategy Annex 3' (2025), available at: https://digital-strategy.ec.europa.eu/en/policies/apply-ai

However, a survey of European cultural heritage professionals[476] and stakeholder interviews carried out for this study both noted the **continuous need for human intervention in and monitoring of these tools**. It is clear that the sector wants to be actively involved in setting the boundaries and conditions of AI use, and develop technologies in line with community values.

6.1.3.4. Pan-European Platforms: Europeana and the Cloud for Cultural Heritage

As earlier discussed, the Europeana platform remains the most comprehensive and well supported repository for cultural heritage in the European Union. The European Commission continues to call for greater digitisation of cultural heritage, and participation in Europeana, suggesting a lasting commitment to the programme.[477] Present activities include the expansion of the common European data space for cultural heritage, expanding advanced digitisation and preservation through 3D and XR, and supporting skill building for cultural heritage professionals and organisations. Indicative targets for 2030 include 82 million digital records in Europeana and the data space, as well as 16 million 3D digital assets.

Research on the economic benefits and impacts of Europeana found that the platform decreased the risks of digitising heritage objects for cultural organisations.[478] While much work has been done to increase the digital offerings on the Europeana platform, stakeholder interviewees suggest that it largely remains a researcher-facing platform. One interviewee suggests that there is opportunity to increase discoverability by developing a more user-friendly component to Europeana.[479] With a wealth of discoverable content, there is ample room to further encourage a sense of play on the platform, to draw in the more casual consumer.[480]

[476] Common European data space for cultural heritage, 'Alignment paper on AI and the data space for cultural heritage' (2025), available at: https://publications.beeldengeluid.nl/pub/2542/CNECT_LUX_2021_OP_0070_Alignment-paper-on-AI_2025.pdf

[477] European Commission, Directorate-General for Communications Networks, Content and Technology, 'Cultural Heritage: Digitization, Online Accessibility and Digital Preservation, Consolidated Progress Report on the Implementation of Commission Recommendation (2011/711/EU) 2015–2017' (2018), available at: https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60045

[478] Borin, E., and Donateo, F., 'Financial Sustainability of Digitizing Cultural Heritage: The International Platform Europeana', Journal of Risk and Financial Management, 16: 421–438 (2023), available at: https://doi.org/10.3390/jrfm16100421

[479] Machidon, O. M., Tavčar, A., Gams, M., and Duguleană, M., 'CulturalERICA: A Conversational Agent Improving the Exploration of European Cultural Heritage', Journal of Cultural Heritage, 41: 152–165 (2020), available at: https://doi.org/10.1016/j.culher.2019.07.010

[480] Stakeholder interview.

In addition, the European Commission is currently building a Cultural Heritage Cloud.[481] The **European Collaborative Cloud for Cultural Heritage (ECCCH)** is a Horizon Europe-funded project to create a pan-European digital infrastructure- intended to bring together heritage institutions, researchers, conservators, archivists, museums, libraries, and other stakeholders across Europe. The core idea is a shared, collaborative environment for dealing with cultural heritage data: bringing digitised objects, metadata, research outputs, digital reconstructions, and more under a unified, interoperable framework. The cloud enhances the ability of cultural heritage actors to interact across disciplinary, institutional, sectorial and political boundaries and cooperate effectively in advancing research on cultural heritage and in developing innovative solutions for the discovery, recovery, conservation, digitalisation and valorisation of digital, digitised and digitisable cultural heritage objects. In order to support the digital transition of heritage as a sector and further enhance research and innovation collaboration and activities in the field, shared tools, sophisticated digital instruments and infrastructure are being developed so that institutions from all sizes (and with varying resources) can manage and enhance their digital collections. While still under construction (at the time of writing, a new ECCCH call for 2025 remains open to select more projects) the cloud strives to create greater unity and collaboration among cultural heritage researchers working in Europe. The ECCCH will increase the discoverability of European cultural heritage,[482] for several reasons: by offering a unified digital environment where all participating institutions can store, share, and access their heritage assets, by following the FAIR principles, and by funding new, shared 3D/XR/AI tools.

[481] European Commission, Directorate-General for Research and Innovation, 'European Collaborative Cloud for Cultural Heritage' (2022), Publications Office of the European Union, available at: https://data.europa.eu/doi/10.2777/83783

[482] European Commission, 'Cultural Heritage Cloud', available at: https://research-and-innovation.ec.europa.eu/research-area/social-sciences-and-humanities/cultural-heritage-and-cultural-and-creative-industries-ccis/cultural-heritage-cloud_en

6.2. Visual arts sector

6.2.1. Introduction to the sector and the main discoverability pathways

The visual arts sector encompasses a broad spectrum of artistic disciplines, ranging from fine arts (painting, drawing, print, installation, design, sculpture, craft, etc.) to photography, including press, stock and advertising photography. To reflect this diversity of artistic practices, actors and organisations, the UNESCO Framework for Cultural Statistics defines "visual arts" as "art forms that focus on the creation of works, which are visual in nature; they are intended to appeal to the visual sense and can take many forms".[483] As another way of approaching the visual arts, the European Statistical System Network on Culture proposes to define them as "activities of creating, producing and distributing works of plastic arts, photography and design" considering that the plastic arts encompass all non-literary and non-musical fine arts.[484]

The term "visual art" become even more complex when digital arts are included, as they do not involve a physical medium.[485] Over the last decade, cultural and creative works, particularly in the visual arts, have been at the forefront of integrating new technologies (virtual/augmented reality, blockchain, artificial intelligence),[486] creating new opportunities as well as growing concerns for organisations and artists.[487] Consequently, and regardless of artistic practice, the use of digital tools along the visual arts value chain (from creation to dissemination and reception, including trade and exhibition) and other digital-related topics have become central issues in the visual arts sector. The impact of digital on the visual arts can also be seen in the emergence of new actors at the distribution/trade stage, especially platforms (e.g. online auction houses), but also in terms of promotion and marketing, with the pivotal role played by social

[483] UNESCO, 'Framework for Cultural Statistics' (2009), p. 26, available at: https://uis.unesco.org/sites/default/files/documents/unesco-framework-for-cultural-statistics-2009-en_0.pdf

[484] European Statistical Systems Network on Culture (ESSnet-Culture), 'Final Report' (2009), p. 306, available at: https://ec.europa.eu/assets/eac/culture/library/reports/ess-net-report_en.pdf

[485] Contrary to the UNESCO FCS 2009 or the ESSnet-Culture definitions of visual arts, more recent studies have included digital arts in their definition of 'visual arts', e.g. EY, Creating growth. Measuring cultural and creative markets in the EU (2014), available at: http://www.creatingeurope.eu/; IDEA Consult, KEA, and imec-SMIT-VUB, Mapping the Creative Value Chains. A study on the economy of culture in the digital age (2017), p. 40, available at: https://op.europa.eu/en/publication-detail/-/publication/4737f41d-45ac-11e7-aea8-01aa75ed71a1

[486] European Commission, Directorate-General for Communications Networks, Content and Technology, Izsak, K., Terrier, A., Kreutzer, S., Strähle, T., et al., 'Opportunities and Challenges of Artificial Intelligence Technologies for the Cultural and Creative Sectors' (2022), Publications Office of the European Union, available at: https://data.europa.eu/doi/10.2759/144212; EY, 'Rebuilding Europe: The Cultural and Creative Economy Before and After the COVID-19 Crisis' (2021), available at: https://www.rebuilding-europe.eu/

[487] For example, see the 1 February 2024 Joint statement from European creators and rightsholders, available at: https://www.evartists.org/wp-content/uploads/2024/02/Creators-and-Rightsholders-Statement-on-EU-AI-ACT-1-February-2024.pdf; EVA, Legal Paper the Artificial Intelligence Act and related union legislation (2023), available at: https://www.evartists.org/wp-content/uploads/2023/07/EVA-legal-paper-July-2023.pdf; CEPIC, At Ethical Guidelines for the Re-Use and Production of Visual content (2023), available at: https://cepic.org//app/uploads/2023/12/CEPIC-AI-Ethical-Guidelines-for-Responsible-Re-Use-and-Production-of-Visual-Content-1023.pdf

media (Instagram, Pinterest, Tumblr, X, etc.) and search engines, starting with Google Images in the discovery process. This broad definition raises a number of issues:

- Statistical – difficulties to effectively represent reality at an aggregate level.[488]
- Strategic – difficulties to implement policies that consider all the specificities of each of the value chains.
- In terms of discoverability – each of the artistic disciplines mentioned has its own discoverability pathways and their relationships with the different components of the discovery ecosystem do not necessarily overlap.

Artists, institutions, intermediaries and other stakeholders in the visual arts sector in Europe are highly diverse, depending on the type of visual artwork and the economic weight of their activities. This sector [489] includes public institutions managed by the State or local authorities, fully private galleries and art spaces, non-profit organisations and various intermediaries such as auction houses and online platforms. In addition, visual artists themselves have various special characteristics on the labour markets, for example multiple jobholding, short and temporary contract. The visual arts sector is also characterised by one-time events, such as art fairs or temporary exhibitions which, as mentioned above, are emerging in the digital environment.

The visual arts are a major asset for the European Union and its Member States, in terms of employment, international trade and growth, but also because these industries promote innovation, social cohesion and Europe's attractiveness.

Various policy documents highlight **the experiential nature of the visual arts sector when it comes to issues of discoverability of cultural content online**, as it is a sector where the encounter between users and artworks takes place mainly in the physical world – with the notable exception of digital arts. In other words, for the visual arts, "the main issue of discoverability is about their visibility in online catalogues [...] and their ability to feature prominently in the answers to questions asked to search engines".[490] While the link between the sector's growth potential and its ability to fully integrate the digital transition is therefore less decisive, digital remains an essential vector for the discoverability of the visual arts. Given these specificities, the discovery pathways in the visual arts sector

[488] For example, the "statistical classification of economic activities", abbreviated as NACE and used by Eurostat includes as visual artists sculptors, painters, cartoonists, calligraphers, engravers, etchers, creation of art featuring light installation, but excludes the manufacture of statues or photographic activities.

[489] See for example Towse, R., and Hernández, T., N., Handbook of Cultural Economics, Third Edition (2020), p. 51, and Mathieu, C., Careers in Creative Industries, (2012)

[490] Ministère de la Culture de France and Ministère de la Culture et des Communications du Québec, 'Mission franco-québécoise sur la découvrabilité en ligne des contenus culturels francophones' (2020), p. 17, available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones

are different from those in the music or audiovisual sectors, for example, but are closely related to those in the museum and cultural heritage sectors.[491]

On the other hand, there is some level of cross-sectorial intertwining between the CCS, so that the discoverability of some works catalyses the visibility of the others. Indeed, works of visual arts may appear within other cultural works (e.g., films, television, multimedia, video games, art books, etc.) or even in the "paratext"[492] of musical and literary works, such as the cover of an album or of a book. Conversely, and in the latter case, the quality of a visual work can increase the discoverability of non-visual works– especially in a digital environment where visual information is the main experience conveyed to the potential consumer, who cannot physically interact with the book to develop its own experience (e.g., read through a few pages).

Although traditional channels such as word of mouth, printed promotional material or reviews in magazines, along with traditional intermediaries such as galleries, fairs, or temporary exhibitions, continue to play an important role in the discoverability of visual arts works, the digital transition has profoundly altered traditional pathways of discoverability.

The challenges of discoverability for the visual arts sector (and for museum and cultural heritage) relate to the **online visibility of exhibitions, fairs or physical cultural events**[493]. As a result, the issue of search engines and optimising the referencing of websites (institutional and artists' personal websites), in other words, search engine optimisation (SEO), is becoming central (*Facilitators*, *Interpreters*). Thus, in addition to online promotion strategies, cultural organisation in the visual arts sector have had to implement "complementary practices for indexing and documenting their content"[494] in order to become more discoverable. This also implies keeping up with the latest developments in SEO across different platforms, monitoring key success metrics and updating SEO practices regularly to improve content discoverability.

On the other hand, the **disintermediation of the visual arts sector is becoming more pronounced in its dissemination and promotion phases**, with the

[491] For example, the French-Quebec mission on discoverability's strategy gathers visual arts, museum and cultural heritage sector, see *Ibid*. p. 6.

[492] According to G. Genette, a text or, in this case, also a music album, "rarely appears in its naked state, without the reinforcement and accompaniment of a certain number of productions, themselves verbal or not, like an author's name, a title, a preface, illustration" in Genette, G. Maclean M., *Introduction to the Paratext* (1991). More precisely, G. Genette uses the term "editorial paratext" to refer to the spatial and material elements, such as the title, the front cover, the typography, etc., see Genette, G., *Seuil* (1987).

[493] Ministère de la Culture de France and Ministère de la Culture et des Communications du Québec, 'Mission franco-québécoise sur la découvrabilité en ligne des contenus culturels francophones' (2020), p. 17, available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones

[494] Coalition pour la diversité des expressions culturelles (CDEC), 'Le défi de la découvrabilité. L'urgence d'agir pour défendre la diversité des expressions culturelles' (2020), p. 15, available at: https://cdec-cdce.org/fr/publications/le-defi-de-la-decouvrabilite-lurgence-dagir-pour-defendre-la-diversite-des-expressions-culturelles/

affirmation of the figure of the artist or creator as the first ambassador of their creation. Whether on their personal websites or on their social media, artists promote their artworks directly, while offering consumers/users a unique experience that makes artworks part of a design process and of the artist's personal journey. In addition, in this context, artists themselves are initiating the first curation of their works, giving them back control over their works and room for manoeuvre. In this respect, the line between discovering an artist and discovering a work of art is becoming blurred and their interdependencies are increasing.[495]

The development and the success of advertising and distribution campaigns online highly depend on "perfecting profiling algorithms" and "collecting data on the behaviour and interest of users"[496] in order to better target potential audiences and reach them effectively in the digital environment. The use of these algorithms is the basis on which social medias and major online platforms operate. As the Coalition for the Diversity of Cultural Expression (CDEC) rightly observes, by taking the principle of word of mouth and amplifying it, "social media have become powerful and unavoidable players in discoverability".[497] Although the rise of social media in the discoverability of content can be perceived as a threat, since control is largely out of the hands of the creators and cultural intermediaries, it can also be considered as an opportunity for the visual arts sector and its artists, insofar as it allows greater accessibility and democratisation of visual arts works whose entry costs are sometimes high.

On the other hand, the influencers, particularly on Instagram, and to a lesser extent on Tumblr, Pinterest, X and TikTok, play a decisive role in the sharing of information, experiences, opinions and even works of visual art, whether digitised or natively digital arts.[498]

The **digitisation of visual works is another way of making them available and "discoverability-ready"**. It notably enables the use of various tools that may be mobilised to strengthen content discoverability (e.g. search engines with taste profiling, dedicated smartphone applications, push marketing strategies, etc.). This is the case, for example of the Louvre Museum and its project in partnership with the digital agency Kernix, supported by the discoverability fund of the Ministries of Culture of Quebec and France.[499] As part of this project, Kernix is

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[495] Ibid.

[496] L'Heureux, I., 'Les leviers de la découvrabilité' (2020), available at: http://www.arca.art/fr/ressources/les-leviers-de-la-decouvrabilite/

[497] Coalition pour la diversité des expressions culturelles (CDEC), 'Le défi de la découvrabilité. L'urgence d'agir pour défendre la diversité des expressions culturelles' (2020), p. 14, available at: https://cdec-cdce.org/fr/publications/le-defi-de-la-decouvrabilite-lurgence-dagir-pour-defendre-la-diversite-des-expressions-culturelles/

[498] For example see Théry, É., Les influenceurs, nouveaux chouchous du monde de l'art, (2021), available at: https://www.lequotidiendelart.com/articles/20034-les-influenceurs-nouveaux-chouchous-du-monde-de-l-art.html

[499] Louvre, 'Moteur de recommandation expérimental', available at: https://collections.louvre.fr/page/moteur_de_recommandation_experimental

developing an innovative recommendation engine technology that combines various criteria, including the exploitation of textual data through the use of a language model, the definition of rules that take into account the diversity and heterogeneity of the Louvre's nine departments, the Louvre's history department and the Eugène-Delacroix National Museum. Overall, this new algorithm aims to facilitate the discoverability of its entire catalogue (i.e. not only the world-famous masterpieces) on the basis of similarity criteria and to encourage the discovery of remarkable works that are less well known to the general public. One other example of how digitisation can promote discoverability is the emergence of numerous smartphone applications that make use of this data, such as Artly[500], DailyArt[501] or AMO.[502]

On the other hand, virtual art fairs have developed in recent years, such as CADAF (Crypto and Digital Art Fair),[503] thanks to the affirmation of digital art, but also in the context of Covid-19.

Similarly, **virtual auction rooms emerged in the wake of the Covid-19 crisis**. The online market represented $13.3 billion (EUR 15.76 billion) in 2021, representing a 20% share of total art market sales, down 5% from the previous year but still more than double the pre-crisis level.[504] In this respect, the emergence of virtual auction rooms in the visual arts landscape represents a reconfiguration of several components of the 'discovery ecosystem', including 'presentations', 'facilitators' and 'interpreters'. With new interfaces, the use of algorithms inspired by other online auction models, and a focus on the path taken by potential buyers, virtual auction rooms make it possible to reach new audiences and renew the discoverability of contemporary creations and heritage works.

Licensable images badge also boost discoverability in the picture industry. According to the Centre of the Picture Industry (CEPIC), Google Images is a key player in the picture industry and, despite the existence of big platforms such as Getty or the British Association of Picture Libraries and Agencies (BAPLA), it is through this search engine that most Picture Libraries and Agencies clients find images. In this respect, CEPIC, IPTC (International Press Telecommunications Council) and the US-based DMLA (Digital Media Licensing Association) have arm-wrestled a collaboration with Google to highlight the value of pictures on the internet, following a complaint for abuse of dominant position. Since 2020, Google supports the IPTC metadata standard and uses the licensable badge on Google

[500] Google Play Store, 'Artly App', available at: https://play.google.com/store/search?q=artly&c=apps&hl=en_US

[501] Google Play Store, 'DailyArt App', available at: https://play.google.com/store/apps/details?id=com.moiseum.dailyart2&hl=en_US&gl=US

[502] Apple App Store, 'Daily Arts and Culture – AMO', available at: https://apps.apple.com/us/app/daily-arts-and-culture-amo/id1505325932

[503] CADAF, 'Contemporary & Digital Art Fair', available at: https://www.cadaf.art/

[504] Art Basel and UBS, 'The Art Market 2022' (2023), available at: https://www.artbasel.com/stories/the-art-basel-and-ubs-global-art-market-report-2022?lang=en

Images, indicating images with known licences and providing links to image owners' websites to increase business for image suppliers. In other words, the issue of discoverability is closely linked to copyright, credit and licensing information. To effectively discover artists, they must first be accurately identified. As a result, improving attribution through robust copyright, credit, and licensing frameworks ultimately promotes the discoverability of artworks.

6.2.2. Challenges and barriers

6.2.2.1. Licensing and monetisation

Within the visual arts sector, there is a nexus between issues of discoverability, copyright and licensing information. In this respect, artists who share and distribute their work on their personal websites or social networks are sometimes unaware of the consequences this may have, as most social media require users to grant a non-exclusive license to the platform and allow the content to be taken up by the community via Sharing or Repost functionalities.[505] This may have important consequences in terms of distribution of their work, especially in the case of digital arts. In the latter case, the problem is also that some digital versions of visual works are "consumed" at the same time as they are discovered (e.g., high-quality pictures online), which then hampers any further monetisation.[506]

On the other hand, when images are adequately protected and monetised online, pricing strategies of digital platforms (often targeting other professionals such as media outlets) may be quite high to ensure adequate remuneration and reflect the professional uses of such images.[507] This may however hamper the accessibility of such content for other uses. For this reason, the France-Quebec mission believes that "a better distribution of the value derived from the exploitation of these images"[508] is essential to improve the discoverability of visual material.

6.2.2.2. Algorithm, SEO & social media

As mentioned above, algorithms, search engines and social media are central to the online discoverability of the visual arts sector. However, given the small number of industrial players, there is a "discoverability oligopoly", where "only a

[505] European Commission: European Innovation Council and SMEs Executive Agency, European IP Helpdesk – Intellectual property on social media platforms – From a company's perspective, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2826/128798

[506] Stakeholder interview.

[507] Zhang, M., Zhao, H., and Chen, H. (Allan), 'How Much Is a Picture Worth? Online Review Picture Background and Its Impact on Purchase Intention', Journal of Business Research, 139 (2022), available at: https://doi.org/10.1016/j.jbusres.2021.09.050

[508] Ministère de la Culture de France and Ministère de la Culture et des Communications du Québec, 'Mission franco-québécoise sur la découvrabilité en ligne des contenus culturels francophones' (2020), p. 32, available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones

few entities control each stage in the user journey, from access to discovery to consumption of content".[509] For example, according to interviewees, most copyright-protected images on Google Images are from the market leaders, e.g., Getty and to some extent BAPLA or Alamy.[510] As a result, smaller image agencies are under-represented, making their content less discoverable. The risk in the medium to long term is that this type of images will disappear, leading to a standardisation of works available, harmful to the discoverability of more diverse content.[511] Appraising the scale of this risk would benefit from a more targeted analysis on the actual visibility of European visual art in image search engine results, on platforms like Pinterest, art-focused tiktok channels, or on auction websites (akin to the work performed on music and books in this study). More broadly, the risk of this "discoverability oligopoly" is that, in the long term, the diversity of creation in the visual arts sector will decline.

6.2.2.3. Artist self-promotion

While disintermediation and the creation of a more direct and sometimes stronger bond with the public helps to diversify and stimulate discoverability within the visual arts sector, it also has more negatives consequences, such as digital fatigue, a reduction in the time devoted to creation and the disappearance of the boundary between public and private life.

6.2.2.4. Metadata

According to stakeholders interviewed, there is an under-use of metadata in the visual arts sector online. For instance, many social media platforms do not embed metadata correctly when users upload their content online.[512] Visual artists themselves may also not embed metadata systematically across the different platforms used. However, metadata is now more systematically used on web search engines.[513] While preventing greater discoverability of the diversity of visual arts works, this may also impact artists attribution and remuneration.[514]

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[509] Coalition pour la diversité des expressions culturelles (CDEC), 'Le défi de la découvrabilité. L'urgence d'agir pour défendre la diversité des expressions culturelles' (2020), p. 10, available at: https://cdec-cdce.org/fr/publications/le-defi-de-la-decouvrabilite-lurgence-dagir-pour-defendre-la-diversite-des-expressions-culturelles/

[510] Stakeholder interview.

[511] This concentration might come under scrutiny as part of the merger between Getty Images and Shutterstock, under investigation by the UK Competition and Market Authority (at time of writing) : https://www.gov.uk/cma-cases/getty-images-slash-shutterstock-merger-inquiry

[512] The IPTC Photo Metadata Working Group tested in 2019, 2016 and 2013 how Social Media sites manage metadata, and present the results for all the main platforms: https://www.embeddedmetadata.org/social-media-test-results.php

[513] IPTC, Google and CEPIC (2018). Google Images now displays image credits based on IPTC Photo Metadata: https://iptc.org/news/google-images-now-displays-image-credits-based-on-iptc-photo-metadata/

[514] Bisaillon, J.-R., 'Être ou ne pas être découvrable ? Une revue de littérature' (2022), p. 4, available at: https://zenodo.org/record/6973451/files/Bisaillon_LATICCE_De%CC%81couvrabilite%CC%81_Une_revue_de_litte%CC%81rature%20%2820220808%29.pdf

6.2.3. Trends and opportunities

During the interviews conducted for this study, the professionals representing the visual arts sector considered that European legislation was moving in the right direction, ensuring a balance along the value chain. However, forecasting future developments is limited by the unpredictability of technological change. For example, players in the imaging industry did not anticipate the emergence of generative AI. The rapid development of AI is seen both as an opportunity (e.g., for creative work, for optimising search engine and social media algorithms, etc.) and as a threat (e.g. content piracy, job destruction, reduction of cultural diversity, etc.). In this respect, the timely adoption of the AI Act and its ability to become a standard for other markets around the world is a good signal, even if it will take more time to evaluate its actual impacts.

Given the importance of new technologies in making works of the visual arts sector discoverable, there is a need for artists to develop their skills in these issues. In a fast-evolving market, more emphasis needs to be placed on developing skills, making SEO interfaces more accessible and ultimately increasing the digital literacy of the sector as a whole. This is particularly important in the visual arts sector, which is highly fragmented and where artists are not often supported by a producer or other similar intermediary company or organisation. New digital opportunities are thus somewhat constrained by the creators' capacity to invest time or resources in these activities.

The digitalisation of the distribution of artworks also allows artists to monitor the discoverability of their creations in greater detail. Thanks to the data generated by social media and websites, artists can better understand their audiences and their reactions, and potentially tailor their artistic production, curation or dissemination according to audience preferences.

6.3. Performing arts sector

6.3.1. Introduction to the sector and the main discoverability pathways

The performing arts sector includes a wide range of diverse disciplines ranging from what is traditionally conceived as 'high' arts, 'folk' art, or 'popular' arts, including theatre, opera and music theatre dance, performance, puppetry, etc., as well as increasingly diverse hybrid and interdisciplinary artistic practices. This range of artistic practices is often referred to as 'live arts' due to their essence of being presented to be experienced by people in the same physical space as the creative process occurs (e.g. in a theatre, arts venue or centre, outdoor arena, etc.).[515] The performing arts sector in Europe is highly diverse and includes public organisations managed by the state or local authorities, private organisations funded by public money, and fully private, commercially driven theatre venues that primarily depend on box office income. Differences exist as well in the programming systems under which theatres operate, which can be repertoire-based or production-based.

Although the performing arts sector is in essence about 'live arts', **digitalisation and digital tools have profoundly changed the way in which the performing arts sector is organised** and have provided theatre-makers and performers with opportunities to augment their creative practice and offer new and unique experiences for audiences. A mapping and analysis carried out by Perform Europe in 2022 was the first attempt to map these tools in all the 40 Creative Europe countries and the UK. The study shows that in recent decades, and accelerated by the Covid-19 pandemic, the use of digital technologies in performing arts productions has grown not only in popularity but also in the diversity of technologies being integrated.[516] The research results show that the digital transformation has had a big impact on both creative aspects of developing, creating, and producing performing arts, as well as on the processes of management, communication, (digital) distribution, presentation, and other processes within value chains, such as contract negotiation, networking, etc.[517] Online streaming and on-demand viewing of performances offered a crucial lifeline for theatres and audiences to remain connected and engaged during the Covid-19 pandemic.[518] However, the UK 'Digital Access to Arts and Culture' report also described a 'pull back' by artists later on from regular streaming of content, due to factors including low revenue, limited funding, a public funding

[515] AEA Consulting, 'From Live-to-Digital: Understanding the Impact of Digital Developments in Theatre on Audiences, Production and Distribution' (2016), available at: https://www.artscouncil.org.uk/sites/default/files/download-file/From_Live_to_Digital_OCT2016.pdf

[516] Janssens, J., and Fraioli, M., 'Research Results of Perform Europe' (2022), available at: https://www.ietm.org/system/files/publications/Perform%20Europe_Results%20of%20the%20Mapping%20and%20Analysis.pdf

[517] Ibid.

[518] E.g. a study by the European Theatre Convention (ETC), collecting data from 19 European theatres found that 77.7% of tickets sold between 2019 and 2021 were for digitally distributed productions, while regular ticket sales fell by over two-thirds during the same period (Hawthorne 8,17).

structure that favours one-off projects, the absence of a digital rights framework, and uncertainty about what content works best.[519] Nonetheless digital solutions have become essential elements facilitating and supplementing the process of designing and piloting new, more sustainable, and inclusive distribution practices.[520]

Audiences need to find performing arts works to attend and enjoy. Performing arts professionals – such as programmers and curators of venues and festivals – are looking for work to present. Both cultural participants (B2C) and professionals in the performing arts value chain (B2B) discover and engage in performing arts productions through various ways, using both analogue and digital means of discovery. **These analogue/physical and digital processes of discovering and accessing work are very intertwined**.

From audiences' point of view, as with other forms of art**, the communication and marketing of performing arts content has evolved significantly with the use of digital technology**. While traditional "offline" pathways such as word of mouth (recommendations from friends, family, colleagues…), printed promotional material (posters, flyers, programme brochures) of theatre companies and venues, reviews in newspapers and magazines, and printed event listings are still very present, these are supplemented and/or increasingly replaced by online (curated) pathways, such as social media platforms, online advertising, digital newsletters and online agendas / ticketing services.

In terms of mediums to present (information on) performing arts content, a survey carried out by Perform Europe shows that 74% of creators and producers use digital tools (social media, website) for promotion and communication of their work. Digital communication and marketing strategies are becoming more and more important for theatre companies and venues, next to traditional communication formats. This also includes publishing event data on online commercial platforms and social media (e.g., Facebook events), since these might offer ways to offer data in a structured way thus increasing the discoverability of the content (*Facilitators*). Dedicated platforms exist across different sectors, with music playing a more prominent role with platforms such as Songkick, Bandsintown etc.

Other online mediums include several major **ticketing platforms** in the market such as Eventbrite, Ticketmaster and TicketSwap, each of which bring together cultural offerings on its own platform with the aim of selling or reselling tickets. In addition to commercial offerings, public institutions and public-private partnerships are also offering **online cultural agendas**. For instance, several major cities in Europe have leisure agendas focused on culture and tourism. These are often linked to or supported by city governments (e.g., visit.brussels,

[519] Misek et al., 'Digital Access to Arts and Culture' (2022), available at: https://digiaccessarts.org/wp-content/uploads/2022/06/DigitalAccessFINALREPORT-1.pdf

[520] Polivtseva, E., 'Live Arts in the Virtualising World' (2020), available at: https://www.ietm.org/system/files/publications/live_arts_in_the_virtualising_world.pdf

visitBerlin and VisitCopenhagen). There are also several commercial digital initiatives that offer selective communication of what is on offer in a particular city or region. For example, the French website agendaculturel.fr offers fee-based tools for cultural professionals and organisers to unlock their offerings digitally in a leisure calendar via widgets and a centralised website (integrating direct ticket sales). “We Are Public” (organised by the Nieuwe Cultuur Stichting), is a Dutch platform where a group of curators select interesting (urban) offerings of performances, concerts, films, exhibitions and festivals. Through membership, people get discounted or free admission to a curated selection of cultural programmes in 12 cities in the Netherlands.

There are also calendars for specific cultural sectors that bundle international offerings. An example is Music-Opera.com, offering tickets for opera, classical concerts and ballet all over the world. In Europe and across several EU member states there are also non-profit collective platforms communicating about the aggregated cultural offer. FestivalFinder.eu is an online search tool for audiences to discover all (performing) arts festival in 45 countries in Europe. In Flanders, Belgium over 28,000 organisers enter more than 215,000 activities into the “UiTdatabase[521]” free of charge. The platform is supported by the Flemish government and helps to widely broadcast cultural offerings on a whole range of information sources, online and offline.

In terms of Facilitators (tools and methods to maximise engagement), some of these platforms are curated, and automated recommendations that are personalised for specific target groups are being developed. As an example, both in the Flemish and the Francophone part of Belgium projects funded by the EU Recovery and Resilience Facility are deployed to develop a more automated approach, with a so called digital cultural exchange platform[522] in Flanders and the “Dcouvr”-project[523] in Wallonia, a research and innovation project (from January 2023 to January 2026), with the aim of developing digital tools to improve the discoverability of content from cultural and media operators in the Wallonia-Brussels Federation.

The use of digital ticketing tools in the cultural sector is generating an **increasing amount of data that can be used for audience development**. By using a more data driven approach, leveraging digital tools and data analytics capabilities as *Interpreters*, organisations are innovating in ways to build meaningful and interactive relationships with their target audiences. This evolution is reflected in the 2024 Council Conclusions on empowering the cultural and creative sectors through data-driven audience development, and the Ghent Manifesto, adopted under the Belgian EU Presidency, which established the European Policy Forum

[521] publiq, ‘UiTdatabase: the Bedrock of a Platform for Leisure Activities’ (2025), available at: https://www.publiq.be/en/projects/uitdatabase

[522] publiq (Dutch), ‘UiT wisselingsplatform’, (n.d.), available at: https://www.publiq.be/nl/projecten/uitwisselingsplatform

[523] Université catholique de Louvain (French), ‘Découvrabilité’, (n.d.), available at: https://www.uclouvain.be/fr/instituts-recherche/ilc/miil/dcouvr

on Data-Driven Audience Development. These developments aim to promote shared data frameworks, interoperability, ethical data use, and cross-border collaboration to strengthen audience engagement across the European CCS.[524]

In the UK, Audience Spectrum, a tool developed by The Audience Agency, segments the UK population by their attitudes towards culture, and by what they like to see and do. This is done by combining insights from different data sets with information on consumption behaviour. Geo-demographic profiling (based on address data) allows estimating the segment to which the resident of a specific address belongs. In this way, this allows cultural organisations that have address data (e.g., through their ticket sales) to estimate the segments they currently appeal to. Several organisations within the EU are working on similar initiatives on a more data driven audience development and engagement approach:

- Cultuurconnect guides theatre venues in Flanders (Belgium) on digital challenges with a focus on collaborations in the field of public engagement. In the "**Digitaal Podium**" (digital stage) project 21 theatre venues work together on a shared digital infrastructure. Initially, a shared ticketing system is being worked out that can also generate CRM applications in a later phase. The shared infrastructure offers a participating venue easy to use tools to analyse, cluster and benchmark audience data with other participating venues in the same region. The project is part of the digital transformation program for the cultural sector in Flanders, coordinated by the Flemish government. Together with other partners in the program the next step is to develop audience segmentation tools enabling presenters and venues to broaden and deepen their audiences.
- The Dutch Digital Information Platform for Performing Arts (**Stichting Digitaal Informatieplatform Podiumkunsten**) connects 341 members to bring together all industry information on audiences, productions and financial arrangements in one digital platform. The goal is to work more efficiently together, share audience insights and reach a larger audience. An "Audience Monitor", one of the modules in the platform, enables venues to analyse audience and sales data and adjust their communication and marketing campaigns accordingly.
- **Applaus** (Denmark) offers cultural institutions targeted and strategic tools to work with audience development.

A range of popular performing arts content (musicals, comedy, major operas) is available online on global streaming platforms like YouTube, Netflix, Disney+, Amazon Prime. The way audiences can discover content on these platforms is heavily influenced by the tools developed by the companies

[524] Council of the European Union, 'Council Conclusions on Empowering the Cultural and Creative Sectors through Data-Driven Audience Development' (2024), available at: https://eur-lex.europa.eu/eli/C/2024/3542/oj; European Policy Forum on Data-Driven Audience Development, 'The Ghent Manifesto' (2024), available at: https://www.vlaanderen.be/cjm/en/ghent-manifesto

operating the platforms, primarily to meet economic objectives[525]. **Over the years some specifically dedicated platforms for performing arts content have been developed in Europe**. Examples are:

- **OperaVision[526]**: an opera streaming platform, supported by the European Union's Creative Europe programme.
- **Medici.tv[527]**, owned by French company Museec, is one of the larger platforms on performing arts and music. It focuses on classical music but has more recently expanded its catalogue to include ballets, documentaries, and masterclasses as well. With a catalogue of 3.000 programs, of which 96% are European, and 150 live events per year, the platform claims it reaches audiences in 192 countries.
- **Prospero – Extended Theatre[528]:** gathers ten partners (nine theatres and one media outlet, ARTE) from nine countries of the Union. In this project (running from 2020 to 2025) the partners, their respective teams and audience, as well as the involved artists, collaborate to redesign the production and distribution processes of plays, notably via the project's streaming platform www.prospero-theatre.tv.
- **Numeridanse[529]**: a platform by the French Centre National de la Danse, offering access to a unique video collection of filmed performances, documentaries, interviews, fiction and dance videos.

Interviewed stakeholders state that **most performing arts companies and some venues set up their own digital distribution channels**. Some bigger players (such as the Vienna Opera House[530]) host their own streaming platforms, but the majority of performing arts organisations use (because of a lack of resources) popular streaming services like YouTube or Vimeo to showcase content, although primarily for B2B purposes. The downside for audiences is a fragmented and limited offer, since the online content is either not accessible to a larger audience, or difficult to find, since it is dispersed over a number of more general or specific platforms (the difficulty to find performing arts works on more general platforms such as YouTube or Vimeo, the difficulty to have an overview when producers and venues have their own channels...). Performing arts organisations have little control of how visible their content is and also little insight in the type of audiences they reach.

[525] Coalition for the Diversity of Cultural Expressions, 'The Challenge of Discoverability: The Urgency to Act to Defend the Diversity of Cultural Expressions' (2020), available at: https://cdec-cdce.org/en/publications/the-challenge-of-discoverability-the-urgency-to-act-to-defend-the-diversity-of-cultural-expressions

[526] OperaVision, 'OperaVision Streaming Platform', available at: https://operavision.eu

[527] Medici.tv, 'Classical Music Channel', available at: https://www.medici.tv/en

[528] Prospero Theatre, 'Prospero – Digital Theatre Platform', available at: https://www.prospero-theatre.tv

[529] Centre national de la danse, 'Numeridanse.tv', available at: https://www.cnd.fr/fr/page/2051-numeridanse

[530] Staatsoper, W., 'Streaming Service', available at: https://play.wiener-staatsoper.at

Constantly evolving technologies provide theatre-makers and performers with new opportunities to augment their creative practice and provide new and unique experiences for audiences. This evolution was accelerated during the COVID-19 pandemic, as the performing arts were particularly badly affected as a mostly live and in-person art form. At that time, there were many experiments and experiences, with many performing arts venues and producing organisations and companies launching digital ways to create and distribute performing arts pieces.[531] They play with liveness, in the sense of 'real time' and forms of online interaction. They were either conceived digitally, or prepared as digital 'reworkings' of physical source material. While being a niche genre, it opened up possibilities to attract new audiences for whom live theatre was not accessible because of a disability or financial reasons. Some of these plays would also be kept online for a certain period (after the live-streaming), but in terms of discoverability they would often have a low lifespan.

In the 2022 report "Re-engaging digital audiences in the cultural sectors: improving audience data", experts across Europe stated **a lack of insights and data on what these evolving pathways entail to engage audiences**. The report noted that key questions remain unresolved, such as whether digital audiences or comparable to live audiences in interests and composition, whether they experience the same content in similar ways, and how best to involve and sustain them. It also raised concerns about whether organisations go digital to reach new audiences or to retain existing ones, and whether formats successful for live audiences can simply be transferred online or need to be adapted specifically for digital contexts.[532]

Some studies have found that **livestreamed performances are popular with older participants, while younger participants tend to favour on-demand and more technologically innovative content**. Other studies show a trend that active audiences (people who attend physical, cultural events more than once a month) become more active online, while passive audiences (people who visit an event or cultural institution physically less than once a month) are even less engaged with digital culture. These findings raise the question of inequality in cultural participation and the dangers of it being replicated in the digital environment.[533]

Not only have B2C discovery pathways evolved over time and under influence of digitalisation, but also the **pathways through which professionals in the performing arts sector discover and engage with performances.** Examples

[531] Kunstenpunt, 'Kunaco' (October 2021)

[532] Voices of Culture, Re-engaging digital audiences in the cultural sectors: improving audience data (2022). Available at: https://ec.europa.eu/assets/eac/culture/docs/voices-of-culture/voices-of-culture-brainstorming-report-re-engaging-digital-audiences-2022_en.pdf

[533] CultuurConnect, 'CultuurConnect – Digital Innovation for Public Libraries and Cultural Centres', available at: https://www.cultuurconnect.be/en

of digital matchmaking platforms are the Aerowaves platform[534] for dance across Europe and the Perform Europe platform.

Depending on the specific socio-economic, institutional and political context, programmers and producers have more or less access to resources allowing them to travel cross borders for prospective activities and to attend to showcasing or networking events. Together with the imbalance in resources for creation, production, presentation, this leads into an imbalance with regards to international flows in touring. This imbalance in touring and mobility flows obviously hinders the possibility of audiences to actually see and discover works from other performing arts contexts. Here, the digital shift can have a positive impact, offering advantages of digital prospecting and online portfolio viewings and matchmaking, online events for knowledge exchange and international partnerships with less travel, especially for artists and presenters with less resources to travel.

As research within the Perform Europe-project found that programmers experience an increased difficulty to take artistic risks in programmes, because of decreasing programme budgets, a downside may be that programmers play it even more safe by betting on performances that these types of digital matchmaking tools predict will have large audiences interested in them.

6.3.2. Challenges and barriers

6.3.2.1. Use and awareness of infrastructure for digital discoverability of live performing arts

During the interviews conducted for this study, the professionals representing the performing arts highlight the desire expressed by performing arts producers to grow, maintain, and engage their audiences in person, speaking of the greatly diminished focus on the streaming of performing arts. Rather, the interviewees speak of the digital opportunities for connecting with their audiences, unveiling the mystery of artistic work, and encouraging first time goers to visit the productions. As noted by one of the interviewees of the study – audiences are unlikely to seek out or search for performing arts content online, they are more likely to encounter it in the local context of where they live, or have it recommended by search and recommendation engines.[535]

Producers of performing arts oftentimes lack awareness or familiarity with digital tools, platforms, and resources, to optimise the discoverability of their content, making it easier to locate and in turn develop meaningful digital pathways and

[534] Aerowaves, 'Aerowaves – Dance across Europe', available at: https://aerowaves.org

[535] This is also confirmed in these reports: Canadian Arts Presenting Association, A linked digital future for the performing arts: leveraging synergies along the value chain, (2019), available at https://linkeddigitalfuture.ca/research/initial-research; Ministère de la Culture, Mission Franco-Québécoise sur la découvrabilité en ligne des contenus culturels francophones, (2024), available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones.

community engagements.[536] Additionally, the low awareness is accompanied by a lack of resources, infrastructure, and a persisting relatively low level of knowledge of digital tools among cultural actors that inhibits the sector's full commitment to the digital transition. [537]

6.3.2.2. Skills, knowledge, and technical barriers to digitisation in performing arts

Not all cultural organisations have the same level of knowledge concerning digital audience management. The research carried out for Perform Europe illustrates the fact that while digital tools are extensively used in various aspects of performing arts touring, distribution and presentation, the distribution of digital resources and tools developed explicitly for the performing arts sector is uneven across the region (see Figure 3 below).[538] Even more so, the mapping shows that despite the majority of creators and programmers utilising digital tools primarily for communication and promotion, or matchmaking and networking, there are few tools available to perform those functions, with most tools being geared towards digital distribution.[539] The Voices of Culture report describes the current phase in the digital development of CCS as a 'transition period', where a number of actors are aware of the importance of providing digital services and managing online audiences, and are making use of heterogeneous digital strategies, while the sector as a whole is yet to adopt these practices, highlighting the overall digital divide among organisations.[540]

Another complex challenge faced by actors in the performing arts is the **management of rights and navigation of policies**. Several of the interviewees highlighted the difficulties that arise with the distribution of performing arts content online and internationally – artists and organisations often lack both the knowledge, and the large financial resources required to navigate questions of ownership and co-ownership, copyright management, privacy issues, national and international policies, rights of various stakeholders, distribution regulations, dependent on audience sizes, etc.[541]

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[536] Voices of Culture, Re-engaging digital audiences in the cultural sectors: improving audience data, (2022), Available at: https://voicesofculture.eu/2021/10/04/re-engaging-digital-audiences-in-the-cultural-sectors-improving-audience-data/; IETM, Live Arts in the Virtualizing World, (2020), available at https://www.ietm.org/system/files/publications/live_arts_in_the_virtualising_world.pdf.

[537] Ibid.

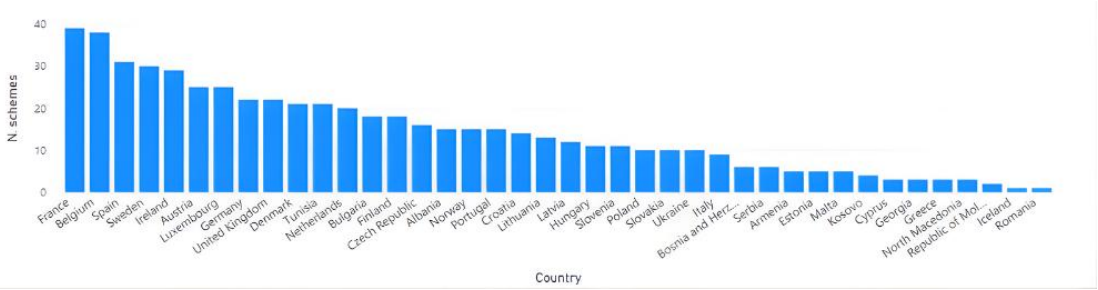
[538] Janssens, J., and Fraioli, M., Research Results of Perform Europe (2022), available at: https://www.ietm.org/system/files/publications/Perform%20Europe_Results%20of%20the%20Mapping%20and%20Analysis.pdf.

[539] Ibid.

[540] Voices of Culture, Re-engaging digital audiences in the cultural sectors: improving audience data (2022), available at: https://voicesofculture.eu/2021/10/04/re-engaging-digital-audiences-in-the-cultural-sectors-improving-audience-data/.

[541] This is also confirmed in this report: Prospero, European Theatre Convention, Performing Arts Recordings and Broadcasts: A practical manual on author's and related rights, (2022).

Figure 3 Number of digital tools for performing arts by country



Source: Janssens, Joris and Martina Fraioli, Research Results of Perform Europe, (2022), available online at: https://www.ietm.org/system/files/publications/Perform%20Europe_Results%20of%20the%20Mapping%20and%20Analysis.pdf

Better discoverability of performing arts content online must be accompanied by an **improved understanding of the digital environment from the 'supply' side**.[542] This fact was also stressed by one of the CCS professionals interviewed for this study, who noted the existence of a big gap in skills, which hinders the producers and promoters from utilising digital tools to their benefit. The European Coalitions for Cultural Diversity (ECCD) Act for Discoverability suggests the need for developing training policies to learn how to better use metadata, master digital marketing, understand how algorithms function, and the overall logic of promotion on social networks.[543] Cultural actors are unable and perhaps unwilling to maximise the potential of digital technologies because of a lack of know-how on digital audience management, search engine optimisation, data mining and analysis of the profiles, needs, and expectations of audiences, and the ability to diversify and provide content for different platforms.[544]

Achieving genuine discoverability of local and national content on digital platforms is crucial for promoting cultural diversity, and with players that operate outside the CCS having a significant effect on the cultural ecosystem, factors such as digital skills and the embrace of technological innovation from the side of cultural actors will have a relevant impact on discoverability. The metadata that accompanies digital content and cultural events must be sufficiently detailed and accurate to ensure that cultural actors are discovered by a potential audience.[545] However, here the lack of knowledge on this subject, along with the lack of

[542] ECCD, Coalition Francaise pour la Divrsite Culturelle, Act for Discoverability, (2022), available at: https://usercontent.one/wp/ukccd.org/wp-content/uploads/2022/07/01.06_Act-for-Discoverability.pdf?media=1674655090.

[543] Ibid.

[544] Voices of Culture, Re-engaging digital audiences in the cultural sectors: improving audience data (2022), available at: https://voicesofculture.eu/2021/10/04/re-engaging-digital-audiences-in-the-cultural-sectors-improving-audience-data/; Ministère de la Culture, Mission Franco-Québécoise sur la découvrabilité en ligne des contenus culturels francophones, (2024), available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones.

[545] Ministère de la Culture, Mission Franco-Québécoise sur la découvrabilité en ligne des contenus culturels francophones, (2024), available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones.

coordination and common frames of reference, is very apparent.[546] Unfortunately, as of yet, there are not many initiatives addressing the value chains of the performing arts sector and involving production companies, professionals, organisations, operators of facilities, distribution platforms, and audiences.[547]

While metadata frameworks are being developed within the performing arts field, they remain primarily oriented towards documentation, historiography, and archiving, with the use of metadata to enhance visibility and support audience development still in its early stages. Within the Digital Research Infrastructure for the Arts and Humanities (DARIAH-EU), recent projects have focused on creating descriptive models, controlled vocabularies, and thesauri specific to the performing arts to improve metadata consistency and interoperability. Their potential to support discoverability and audience development across the performing arts sector remains limited at this stage.

Ultimately, for the suppliers of performing arts content, these structural, technical, and knowledge barriers translate into a reality where on-demand presentation remains largely unviable financially and presents too many technical obstacles.

6.3.2.3. Audiences engagement with digitally available content

Producing and filming in-person shows for on-demand performing arts is costly, and in terms of experiences audiences prefer digital performances specifically designed for online viewing, which require extensive adaptation and resources for minimal financial return.[548] While it is popularly believed that the digitisation and availability of cultural content online necessarily entails the democratisation of culture, that is not necessarily the case – digital engagement with culture entails complex topographies of cultural democratisation, social change, economic capacities, generational gaps, economic divisions, and uneven access to the Internet.[549]

In performing arts, **the majority of people who engage with digital cultural experiences are those who are already engaged with 'in situ' culture;** for others, the digitisation of culture might serve as a factor of further exclusion, especially for people who lack proper access to internet or insufficient digital skills.[550] Fostering deeper audience involvement with digital performing arts

[546]Ministère de la Culture, Mission Franco-Québécoise sur la découvrabilité en ligne des contenus culturels francophones, (2024), available at: https://www.culture.gouv.fr/Thematiques/europe-et-international/Publications/Decouvrabilite-en-ligne-des-contenus-culturels-francophones.

[547]Canadian Arts Presenting Association, A linked digital future for the performing arts: leveraging synergies along the value chain (2019), available at https://linkeddigitalfuture.ca/research/initial-research.

[548] Crittenden, Elizabeth, Guidelines For Using Aggregate Streaming Platforms For Performing Arts Content, (2021), available at: https://amt-lab.org/blog/2021/1/guidelines-for-using-aggregate-streaming-platforms-performing-arts-content.

[549] Voices of Culture, Re-engaging Digital audiences in the Cultural Sectors: Improving Audience Data (2022), Available at: https://voicesofculture.eu/2021/10/04/re-engaging-digital-audiences-in-the-cultural-sectors-improving-audience-data/; IETM, Live Arts in the Virtualizing World (2020), available at https://www.ietm.org/system/files/publications/live_arts_in_the_virtualising_world.pdf.

[550] Ibid.

content, especially among individuals with diverse interests and varied social, economic, linguistic, and regional backgrounds, requires effective management through ensuring that the content is easily findable and accessible to prospective audiences.[551] That is especially the case considering digitisation is unlikely to halt in the current globalised world.[552] The lack of awareness of digital performances has been confirmed in a 2016 study performed for Arts Council England, UK Theatre and Society of London Theatre, which found that 43% of respondents were unaware of the availability of theatre content online, and 34% were uncertain about how to locate it.[553]

Another major challenge regarding the 'demand' of digital performing arts content is the lack of interest from the audiences. As mentioned, the current digital performing arts audiences are primarily a subset of committed theatregoers.[554] Even for those audiences digital performing arts content complements in-person performances, rather than being a substitute for them.[555] Theatregoers feel that digitally distributed theatre does not provide the same multi-sensory experience as in-person performances, dislike the informal setting of digital viewing, and would rather opt for watching a film or television.[556] This has also been highlighted by interviewees, who note that audiences want to experience performing arts in person, to be in the same space with both the artists and other members of the audience. Simultaneously, as the 2022 Voices of Culture report suggests, cultural audiences have continued to experiment with digital formats, indicating that the potential remains — though it requires new approaches, formats, and audience relationships yet to be fully developed.[557]

6.3.3. Trends and opportunities

Initiatives in **data driven audience development**, where multiple venues and organisations work together to share and learn from their audience data, **hold a promise for opportunities to reach and engage (new) audiences**. A more data driven approach can create added value by developing a better understanding of who participants are and what their motivations, needs and interests are. This may lead to insights into 'promising segments' that theatre venues reach less today but where they can grow, help develop a more targeted

[551] Ibid.

[552] Ibid.

[553] AEA Consulting, From Live-to-Digital, Understanding the Impact of Digital Developments in Theatre on Audiences, Production and Distribution (2016), available at: https://www.artscouncil.org.uk/sites/default/files/download-file/From_Live_to_Digital_ OCT2016.pdf

[554] Creative Australia, The digital Front row: understanding digital theatre audiences (2023), available at: https://creative.gov.au/advocacy-and-research/the-digital-front-row-understanding-online-and-digital-theatre-audiences

[555] Ibid.

[556] Ibid.

[557] Voices of Culture, Re-engaging digital audiences in the cultural sectors: improving audience data, (2022), Available at: https://voicesofculture.eu/2021/10/04/re-engaging-digital-audiences-in-the-cultural-sectors-improving-audience-data/; IETM, Live Arts in the Virtualizing World, (2020), available at https://www.ietm.org/system/files/publications/live_arts_in_the_virtualising_world.pdf.

cultural offer, a more efficient and impactful promotional strategy and collaborations with other organisations on their respective audience objectives. Towards policy makers, aggregated audience data can give insight into the participation of different population groups and help chart their evolution over the years.

At the same time, theatres report **digital theatre and digitally distributed theatre in particular to be a means of reaching audiences who may not otherwise be able to attend the theatre in person**. This includes educational groups, international audiences and audiences who are prevented from visiting the theatre due to financial or health reasons, as well as new demographics.[558] With digital means, organisations have the potential to reach audiences beyond their physical reach. To capitalise on this potential, organisations need to consider what values they can provide to the public outside their region by supplying content and services in several languages and ensuring that any digital user can find them easily.

To enhance the exploration of these opportunities related to fostering discoverability, sectoral organisations[559] and interviewed stakeholders call for **support to build awareness about the opportunities – and risks – of the digital environment in terms of audience and community building, and to strengthen (cross-)sectoral collaboration and peer-to-peer learning on audience engagement and development in a digital environment**. They also highlight the need to develop (new) distribution platforms owned by civil society, to provide resources for producing high quality digital content and ensuring copyright clearances, and to invest in resources for performing arts professionals and organisations to develop their digital and data skills. Finally, the call IP rights frameworks that guarantee the largest dissemination of online cultural content and make it accessible to all EU citizens, but at the same time guarantee the legal protection of artists' digital work.

These support measures also resonate with the Conclusions of the Council of the European Union on empowering the cultural and creative sectors through data-driven audience development[560] (2024), which provide several recommendations on initiatives the European Commission and/or members states can take to

[558] European Theatre Convention, Digital Theatre – Strategies and Business Models in European Theatre, (2023), available at https://www.europeantheatre.eu/download-attached/9Sy6k3DXuysmSwzcZcj1EYcMIxv6EnM2qAQszYd6IqoKeskLNw.

[559] See e.g. The Opole Recommendations by the European Theatre Forum (2023), available at https://www.europeantheatre.eu/page/resources/online-library#94; the research carried out in the Perform Europe-project (Janssens, Joris and Martina Fraioli, Research Results of Perform Europe, (2022), available at: https://www.ietm.org/system/files/publications/Perform%20Europe_Results%20of%20the%20Mapping%20and%20Analysis.pdf) and the recommendations from the Voices of Culture-group on Re-engaging digital audiences in the cultural sectors (Voices of Culture, Re-engaging digital audiences in the cultural sectors: improving audience data, (2022), available at: https://voicesofculture.eu/2021/10/04/re-engaging-digital-audiences-in-the-cultural-sectors-improving-audience-data)

[560] European Union, C/2024/03542 — Digital Transformation Policies in Cultural Heritage Context (2024), Official Journal of the European Union, Series C, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C_202403542

support audience engagement and development in a digital environment. The conclusions call for supporting cultural organisations in developing **data-driven strategies for audience development, promoting cooperation between member states, enhancing digital skills, promoting ethical and transparent use of audience data, and stimulating the use of open data principles for data sharing and protection**.

7. Conclusions and recommendations

7.1. Key conclusions

The research carried out in the context of this study has found that **discoverability of European content is becoming a distinct policy concern**, shifting focus from mere production and availability of cultural works to their **visibility, prominence, and actual consumption** online. In examining the music and book sectors, clear patterns emerged.

Music sector

In the **music sector**, digital platforms have enabled **unprecedented access to songs across borders**, with streaming services now the dominant channels for discovery and revenue. The sheer scale of availability — an estimated 184 million tracks in 2023 — has opened a window for European artists to reach global audiences.

One clear trend is the **increasing popularity of European national tracks**. In many EU countries, domestic artists now make up a greater share of the top charts than in the pre-streaming era, with 38% of the examined MSS top charts entries being European songs. However, this share is driven by national songs, which account for an average of 24% of all chart entries. This reflects a "glocalisation" effect: streaming has amplified local stars while also exposing audiences to global genres. Alongside this, **linguistic diversity is rising**, with local-language rap and hip-hop surging in popularity and often displacing English-language hits at the top of charts. Global genres such as Afrobeats, EDM, and K-pop also break into specific markets, creating a blend of strong domestic scenes with international trends.

At the same time, **superstar artists continue to dominate**, capturing a large share of streams. However, their dominance has declined somewhat over time, with mid-level and emerging artists gaining more visibility. Still**, intra-EU circulation remains limited**: non-national European music struggles to travel across borders, with consistently small shares in national charts compared to Anglo-American or domestic content.

Gender representation remains uneven. Male performers and songwriters outnumber female artists across most charts analysed, though modest gains have been observed in certain genres and in recent years. Metadata gaps complicate this analysis, but the imbalance is clear. The rapid rise of AI-generated tracks may further challenge smaller creators, adding pressure to already limited visibility for niche or non-dominant artists.

Recommender systems and curated playlists play a central role in shaping discoverability. Different platforms strike different balances between algorithmic and human curation, with hybrid "algotorial" approaches mixing personalisation and editorial input. Placement in top playlists can yield millions of streams, but

algorithms often privilege U.S. and English-language content. While female artists and non-English songs are underrepresented in algorithmic playlists, some editorial teams have consciously boosted independent and women artists, promoting diversity that pure algorithms might overlook. Algorithms optimised mainly for engagement tend to reinforce existing tastes, though some services are experimenting with features to broaden exposure.

Survey data confirms that users credit streaming services with helping them discover new music, but far fewer feel these services help them discover diverse origins — whether local, European, or non-English. Alternative social and interactive channels such as short-form videos, music recognition tools and user-driven sharing provide additional pathways for discovery, though their impact on European diversity is mixed.

Overall, the digital music market shows **both opportunities and challenges**:

- Local-language and national tracks are rising strongly, reshaping charts.
- Superstar artists still dominate, but their share is declining as mid-level acts gain ground.
- Intra-EU circulation remains weak, limiting cross-border exposure for European artists.
- Gender imbalances persist, with modest improvements.
- Algorithms and playlists are powerful gatekeepers, with biases but also potential for diversity when editorial choices intervene.
- Younger generations are highly engaged, open to new genres and global artists, and represent a key driver of diversity in listening habits.

Book sector

The **European books and publishing sector** plays a pivotal role in the continent's cultural and economic landscape, encompassing a vast array of languages, genres, and literary traditions. Data analysis carried out in the context of this study shows that local and EU titles constitute varying shares of the top book sellers across EU countries. The share of non-national EU books among the top sellers remains mostly between 10–20% in EU countries, while beyond the EU, European titles rarely appear among the bestsellers. This highlights a persistent challenge: **cross-border discoverability of European works remains limited**, with national markets strongly favouring domestic authors and global bestsellers.

A headline finding is that **language and translation are major barriers to discoverability**. Unlike music, where language can be less of a barrier to enjoyment, reading requires comprehension. Many European works are never translated out of their original language, or if they are, often only into English. High costs and market dynamics reinforce this imbalance, leading to an abundance of English editions but a scarcity of translations into smaller European

languages. Reliance on English as a lingua franca in publishing further narrows diversity, as readers converge on internationally marketed English-language bestsellers while local works remain confined to their language markets.

Digital channels — including e-book and audiobook platforms, online bookstores, and reading communities — have expanded access to literature across Europe. Yet readers still predominantly discover works from their own country or a handful of global authors. Data examined in this study shows that **national platforms tend to give strong prominence to domestic writers, while works from other European countries remain a small fraction of what users encounter**. In fact, non-national EU titles often have less visibility than non-EU global titles, underscoring persistent language silos. **Global platforms, meanwhile, reinforce already dominant international bestsellers**, with European books outside the Anglosphere struggling for attention.

Cross-media adaptation has emerged as a catalyst for broader book discovery. When European books are adapted into films or series, or trend on social media (e.g., via #BookTok), their visibility spikes across platforms. However, this phenomenon also reinforces the dominance of English-language titles, which tend to benefit disproportionately from such adaptations, leaving non-English European works less likely to achieve similar global reach.

The study also highlighted imbalances in whose stories get attention. **Female authors remain underrepresented in bestseller exposure**, comprising less than half of top-selling authors in most countries. Examined data on digital formats such as audiobooks and e-books points to slightly more balanced gender representation than traditional bestseller lists, but gaps remain.

Metadata quality is another barrier: incomplete or inconsistent information on language, author origin, or genre makes it harder for diverse titles to surface in recommendation systems. Smaller publishers are particularly affected, as they often lack resources to ensure high-quality metadata.

Survey findings suggest that while readers find digital recommendation systems useful for discovering more books in general, **only a small fraction feel these algorithms help them discover new EU or local authors**. Community-curated tools are appreciated by some readers, but not universally adopted. Physical bookstores remain crucial discovery spaces, with curated selections and staff recommendations introducing readers to titles they might not otherwise encounter. Libraries also continue to play a vital role in ensuring access to diverse works and supporting inclusion. Word-of-mouth remains the most trusted discovery pathway, underlining the continuing strength of social and community networks.

Finally, the growing presence of **AI-generated books** poses new challenges for discoverability. As synthetic works flood digital catalogues, they risk homogenising what is available and making it harder for readers to find genuine,

diverse titles. Small publishers and debut novelists may struggle even more to gain visibility without significant marketing support.

Data limitations

It should be noted that **these findings are constrained by data limitations** inherent in the study's methodology. The quantitative analyses relied in part on publicly available top-chart data and observable platform metrics. These sources capture mainstream trends but do not reflect the full spectrum of content available, meaning that niche or less visible works may be underrepresented in the findings. By definition, top 100/200 charts exclude the long tail of niche, independent, or emerging creators; thus, many culturally diverse works remain "invisible" in such data.

The absence of comprehensive metadata was another hurdle – for instance, **inconsistent tagging of artist nationality or language and missing gender/pronoun information** made it challenging to precisely measure diversity in some cases. The research team used proxies (like matching artists to countries via external databases, and analysing lyrics language or ISRC codes) to approximate the origin of music tracks, but these are imperfect measures.

Similarly, the **consumer survey**, while providing valuable insights on user preferences and behaviours, had limitations in sample size and country coverage, meaning results serve to provide hints on general patterns rather than exact nation-by-nation behaviour. These constraints imply that the quantitative findings should be interpreted as **indicative, not exhaustive** – they paint a broad picture of discoverability challenges in the music and book sectors, but the true diversity of Europe's cultural content online is undoubtedly richer and more complex than what current data fully capture. A key outcome of the study, therefore, is identifying these knowledge gaps: **better data and transparency are needed to continuously monitor and understand the evolving digital cultural ecosystem.**

Transversal factors shaping discoverability

Beyond the sector-specific observations, the study identified a set of **transversal factors** that shape the discoverability of diverse cultural content across the board.

Language influence and user engagement

Language remains a decisive filter of discovery. European audiences often stay within their linguistic comfort zones, which creates **"language silos" in digital consumption**. Content in major languages (English, French, Spanish, etc.) enjoys far wider circulation online than works in smaller or minority languages, which may be virtually invisible to those not speaking them. The availability of translations and localisation of interfaces heavily influence whether a user even encounters foreign-language works. The findings show that even when ample content exists, **users gravitate toward what is readily presented in their own language and cultural context**, especially given the vast choice online. This

underscores that **user engagement patterns are partly culturally and linguistically determined**: without proactive measures (like translation support, or multilingual recommendation features), the rich diversity of European content doesn't automatically translate into cross-border discovery. Generational dynamics play a role here. Younger users are more linguistically adventurous, often consuming content in English. This expands access to global works and genres, but also reinforces the dominance of English-language content. As a result, diversity broadens internationally yet narrows within Europe, where smaller language works remain less visible. Translation and multilingual availability are therefore crucial to ensure curiosity leads to genuine cultural diversity rather than convergence on English alone. Strategies to boost discoverability must account for varying user capacities (including **digital literacy levels** and language skills) and **motivation to explore** beyond the algorithmic comfort zone.

Cultural interests, trends, and generational behaviours

The study observed that cultural tastes and discovery habits are evolving, with notable **generation-driven shifts in discovery**. Younger generations not only use digital services more intensively, but also engage with culture through social media and peer communities in ways that older cohorts do not. BookTok has strongly shaped Gen Z reading habits — in 2021, viral recommendations drove sales of around 20 million books (over 2% of all sales), often reviving backlist or niche titles. Yet much of this surge centres on English-language works, reinforcing their dominance. While BookTok broadens genre diversity and boosts older titles, it narrows linguistic diversity by sidelining books in smaller European languages. Translation and multilingual promotion are key to ensuring these viral trends benefit a wider range of European authors. Likewise, in music, teens and young adults are avid users of features like algorithmic playlists and discovery modes, treating music discovery as an active pursuit and a social experience. This generational energy is a double-edged sword: it **drives up the diversity of content being sampled** (as young users seek novel and global content), but it also can create fast-moving fads and algorithmic **"pile-ons" around a few trending pieces**, which platforms then amplify. Meanwhile, older generations tend to rely on more traditional or passive discovery channels (radio, bestseller lists, familiar authors/artists) and thus display **more stable, but narrower, consumption patterns**. **Promoting cultural diversity online may require age-targeted approaches** – e.g. leveraging youth enthusiasm through creative challenges and social media campaigns, while also nudging older audiences to sample new content (perhaps via curated recommendations or educational prompts). Cultural interests are not static; they respond to what's made visible. Thus, sustaining a diverse discovery ecosystem might also involve cultivating curiosity and openness as cultural values across all age groups.

Hyper-abundance of content and platformisation

A defining feature of the digital environment is the **"paradox of choice"** – an overwhelming abundance of cultural content available at one's fingertips, which in theory should allow any European artist or author to find an audience, yet in practice makes discoverability a major challenge. Millions of songs, books, and media are now accessible, **far more than any user can navigate**, putting **platforms and their algorithms in a powerful gatekeeping role**. This **platformisation** of cultural discovery means that a small number of global tech companies (music streaming services, e-book and audiobook platforms, social media and video-sharing sites, online stores) mediate a large share of cultural consumption. They use recommendation engines, search rankings, and curated interfaces to help users find content – but these same mechanisms inevitably **prioritise certain works over others**, creating a new kind of bottleneck. The study's cross-sector analysis found that **attention economy dynamics** often favour content that is already popular. In a hyper-abundant environment, visibility itself becomes a scarce resource. This leads to a feedback loop where highly visible content gets more engagement, which in turn keeps it visible – while vast swaths of other content languish in the long tail with minimal exposure. The sheer volume of new releases every day (songs uploaded to MSS, books self-published or added to catalogues, etc.) exacerbates this. From an artist's perspective, **being discovered is as much a challenge now as getting produced was in the pre-digital era** – the barrier has shifted from access to distribution, to **access to attention**. This structural issue is at the heart of why **policy attention is turning to discoverability** as a complement to traditional cultural policies on production.

Algorithmic biases and data limitations

The algorithms that power content recommendations and search results – while hugely influential in shaping user choices – come with inherent **limitations and biases**. They often operate as **"black boxes" with opaque criteria**, trained on engagement data that itself reflects existing popularity and majority tastes. This can result in **self-reinforcing bias**: the algorithm learns that mainstream content yields more clicks and thus keeps promoting mainstream content, potentially at the expense of diversity. The study noted several such issues: for instance, music recommender systems heavily rely on listening histories and collaborative filtering, which means niche genres or artists with less initial traction rarely get surfaced to new listeners. In the book sector, examined recommendations in global platforms tend to push titles that are already bestsellers or internationally famous, with far fewer suggestions for translated literature or European authors, unless a user has explicitly shown interest in those categories. Furthermore, **training data bias** plays a role: if a platform's training data under-represents certain languages or communities, the algorithm will likewise under-recommend that content. A related challenge is **metadata quality** – incomplete or inconsistent metadata (e.g. missing info on an artist's country or a book's genre) can lead algorithms to make suboptimal choices or simply overlook relevant content. The

study found that **metadata gaps are widespread** (for example, in the music data, many artists lacked gender/pronoun data or clear country attribution) and this obscures the true picture of diversity. Without robust metadata, even a well-intentioned algorithm cannot identify a "diverse" range of content to recommend. Moreover, **algorithmic opacity** leaves creators and users with little insight into why certain content is shown or hidden. This opacity can make it difficult for cultural operators to optimise their content's visibility. Overall, the interplay of biased training data, patchy metadata, and closed algorithms constitutes a significant barrier to equitable discoverability of Europe's cultural richness.

Transparency and data access for creators and cultural operators: A recurring theme in stakeholder interviews and literature is the **information asymmetry between platforms and content creators**. Major platforms hold lots of data on audience behaviour and content performance, but access to this data (and to the inner workings of recommendation systems) is very limited for creators, publishers, or cultural institutions. As a result, those seeking to promote diverse content frequently find themselves operating with limited guidance and insufficient insight into the mechanisms that determine visibility. For example, European publishers or music labels often **cannot tell how their content is being recommended or why it might be less visible** than expected, because platforms rarely share detailed analytics beyond basic metrics. **Transparency is thus a critical enabler** for diversity: without understanding content performance, recommendation biases or search ranking criteria, public authorities and independent creators alike struggle to identify how they should act for better promotion. The **Digital Services Act (DSA)** at the EU level imposes some transparency requirements on online platforms falling within its scope. However, data access remains limited, which constrains the ability of creators and operators to optimise how their content is promoted. For example, artists often rely on guesswork and external tools to figure out how to get featured in algorithmic playlists. The study highlights a need for greater **data-sharing and transparency initiatives** –that allow better sectoral insights. Without improved transparency and data access, creators (especially small and independent ones) remain at a disadvantage in the platform-driven market, hindering the diversity of what gets promoted and sustained.

Marketing, promotion, and curatorial strategies

In an online world of infinite shelf space, effective promotion and curatorial presence become essential for content to stand out. The research found that **human curation and editorial efforts are just as important as algorithms in influencing discoverability**. For instance, on music services, editorial playlists can significantly boost an artist's visibility if they are included. Similarly, in the book sector, editorial features such as book reviews, staff picks, or author interviews provide exposure that purely algorithmic lists might not. These tools, however, are often gatekept by platform operators or large publishers/labels – it's a competitive space where those with marketing knowledge or industry connections secure the premium slots. **The platformisation of promotion**

means that traditional marketing (posters, bookstore displays, radio plugs) has shifted to digital marketing techniques: search engine optimisation (SEO) for content metadata, social media engagement, hashtag campaigns, influencer partnerships, and even paying for promoted placements. Large publishers and music labels are quickly adapting to use data-driven marketing and algorithmic tools to position their content prominently, whereas smaller players frequently lack the skills or budgets to do so. This creates a new divide in visibility. The study notes that book editorial curation may tend to favour domestic content on national platforms which helps local diversity, but on global platforms, editorial spotlight seems to overwhelmingly go to Anglo-American content. Meanwhile, automated promotional tools, such as recommendation widgets or sponsored content slots, often operate on a pay-to-play or popularity basis, which can sideline less-commercial content. Overall, the challenge for creators and cultural operators is twofold: mastering new digital promotion tactics (from SEO to analytics) and gaining fair access to promotional channels on platforms. Those who succeed in these areas can break the cycle of invisibility; those who cannot are at risk of remaining unseen.

Challenges for creators and operators

Building on the above, a fundamental issue is the capacity gap facing many European creators, publishers, and cultural institutions. It is not enough to create diverse content – one must also actively work to make it discoverable. **This requires certain skills (data analysis, digital marketing, cross-platform engagement) that are relatively new to the cultural sector**. A small independent book publisher or an emerging band might not have a dedicated team to optimise metadata or strategise about MSS algorithms. Interview feedback in the study highlighted that many creators feel overwhelmed by the need to constantly promote themselves online, which detracts from their creative time and often still yields limited visibility in return. Additionally, **access to audience data is limited**, as mentioned, which makes it harder to even know what strategy would work. There is also a resource disparity: larger organisations can invest in discoverability (through advertisements, hiring social media managers, commissioning data-driven market research), whereas small cultural operators often operate on small budgets. This tends to reinforce an “attention oligopoly” where big players with big marketing budgets capture outsized audience share, echoing traditional market concentration but now in the digital attention sphere. Moreover, **creators from smaller markets or less-spoken languages face intrinsic hurdles** – the potential audience pool is smaller, and they may need translation or special efforts to reach beyond their core community. The study’s sector analyses showed that in many European markets, only the top tier of content (often backed by major labels/publishers) achieves significant algorithmic visibility, while the mid-tier of European talent struggles for recognition. This imbalance not only affects individual careers but also risks narrowing the visibility of diverse voices within an otherwise wide cultural offering, meaning that consumers are often steered toward a limited set of dominant works

despite the breadth of content available. Addressing these challenges will require capacity-building (training artists and institutions in digital skills), ensuring fair access to promotion, and possibly policy measures that support the visibility of underrepresented creators.

User awareness and digital literacy

Finally, the role of the **audience** cannot be overlooked. The concept of discoverability inherently involves a user actively or passively finding content, which means user behaviour and knowledge are part of the equation. The study suggests that increasing **user awareness about the diversity of content available and how to find it** is a transversal challenge. Many users are **not fully aware of how algorithmic feeds are curated** – for example, a reader might assume the "recommended for you" list is neutral or exhaustive, not realising it might be filtered by popularity or past clicks. Similarly, a music listener might stick to default playlists without knowing about settings or features that could broaden their exposure (like switching off personalised mode, exploring international charts, etc.). **Digital literacy initiatives** can empower users to take more control of their discovery process – teaching, for instance, how to use advanced search filters, how to seek out diverse creators, or simply raising awareness that algorithms may tend to show more of the same. The survey results indicate that a segment of consumers **desire more diversity in their recommendations** but feel that this is not easily facilitated. This is where **user education and interface transparency** intersect: if platforms give clearer options and if users are educated to utilise such tools, the outcome could be a more **open-minded consumption pattern**. Crucially, **digital literacy also spans understanding the value of cultural diversity** – instilling appreciation for exploring beyond mainstream offerings. In policy terms, this could involve campaigns or integration into media and cultural literacy programs, highlighting that discovering Europe's diverse cultural expressions is enriching and within the user's power. Essentially, an engaged, aware user base is an important ally to any policy measures: when users actively seek variety, **platforms will be pressured to respond to that demand**, creating a virtuous cycle for diversity.

Policy frameworks

The research underscores that these **discoverability challenges are not occurring in a vacuum** – policy frameworks at EU, international, and national levels are starting to respond, albeit unevenly. Cultural diversity in the digital space is now firmly on the policy agenda, as evidenced by multiple developments. At the European level, cultural diversity has long been a core principle (enshrined in Article 167 of the Treaty on the Functioning of the EU and international instruments like the 2005 UNESCO Convention on Diversity of Cultural Expressions). However, the digital shift has added new urgency and dimensions to this principle. Traditionally, EU policies focused on supporting cultural production and ensuring content availability (for example through subsidies or quotas for European works), but visibility and findability are the new frontiers that existing tools only partially address. The Audiovisual Media Services Directive

(AVMSD) is one binding instrument that does tackle discoverability to a degree by offering a 30% of European content in their catalogues and ensuring their prominence, yet – there is no equivalent framework for other cultural content like music or books.

Transversal regulatory frameworks like the new Digital Services Act (DSA) and Digital Markets Act (DMA) set important contextual foundations for a fairer online environment. The DSA will enforce greater transparency in how content is recommended and give users some control (e.g. the right to opt out of personalised algorithms) on a number of services which shape the digital environment. While these laws are not culture-specific, their provisions on transparency, accountability, and contestability can indirectly support online discoverability goals. Additionally, Creative Europe, the EU's flagship cultural funding program, has started to back projects on digital audience development and discoverability (for example, supporting collaboration on metadata standards, or transnational promotion of music). Digital Europe and Horizon Europe research funding are likewise investing in cultural data spaces and research and innovation to support the CCS digital transformation. The European Collaborative Cloud for Cultural Heritage (ECCCH) and the Data Space for Cultural Heritage are flagship initiatives aiming to improve the digital infrastructure. This reflects a growing policy consensus that improving discoverability is essential for a vibrant cultural sector, and it requires action on data, technology, skills, and cooperation.

Internationally, there is **converging momentum on safeguarding diverse cultural expressions online**. UNESCO has been vocal – the 2025 MONDIACULT Declaration reaffirmed culture as a human right and called for its recognition as a standalone Sustainable Development Goal in the post-2030 framework. Ministers of culture highlighted the need to integrate culture into sustainable development strategies, while also addressing challenges posed by digital transformation and artificial intelligence. The Declaration urges stronger protection of cultural diversity and cultural rights in digital contexts, emphasising that technological innovation must be aligned with equity, inclusion, and the promotion of diverse voices. UNESCO's 2021 Recommendation on the Ethics of AI also embeds cultural diversity as a principle, highlighting that AI systems (like recommendation algorithms) should be designed and evaluated with diversity in mind. Forums like the G7, G20, and the Francophonie have echoed these concerns.

At the national level within Europe, various initiatives focus on access and digitisation. These improve availability of local content online, but again, **discoverability often remains limited by lack of promotion or integration with where the users actually search.** In some countries, localised platforms thrive alongside global ones, showing that localised approaches can effectively champion domestic authors and cater to local tastes. Such models hint at emerging opportunities: a pluralistic digital ecosystem where diverse platforms (global and local, commercial and public) coexist, giving users multiple pathways

to discover European content. EU policy can consider ways to support these alternatives as part of a strategy to reduce the current platform concentration and rebalance online cultural discovery in favour of diversity.

Concluding remarks

Structural challenges remain evident: the market power of large platforms, persistent language silos, algorithmic opacity, and unequal resources continue to shape the online cultural landscape. At the same time, **the study highlights that some segments of the market are relatively competitive, and opportunities exist to strengthen diversity if these dynamics are better understood**. Promoting cultural diversity online is not only about addressing barriers but also about grasping opportunities — for example, improving metadata quality, enhancing recommendation systems, and supporting innovative digital formats that broaden access.

User interests and attitudes are equally important. Survey evidence shows that younger audiences are more open to exploring new genres and global content, while older audiences often remain attached to familiar national works. These generational differences influence how diversity is experienced and point to the need for policies and platform practices that respond to varied user expectations.

The findings suggest a more nuanced picture: diversity online is shaped by linguistic accessibility, technological design, and user behaviour. Ensuring that smaller voices and minority cultures are visible requires both addressing structural imbalances and harnessing technological tools to expand discoverability. The landscape is therefore characterised by both challenges and opportunities, with growing recognition that cultural diversity online is central to Europe's cultural sustainability and creative economy.

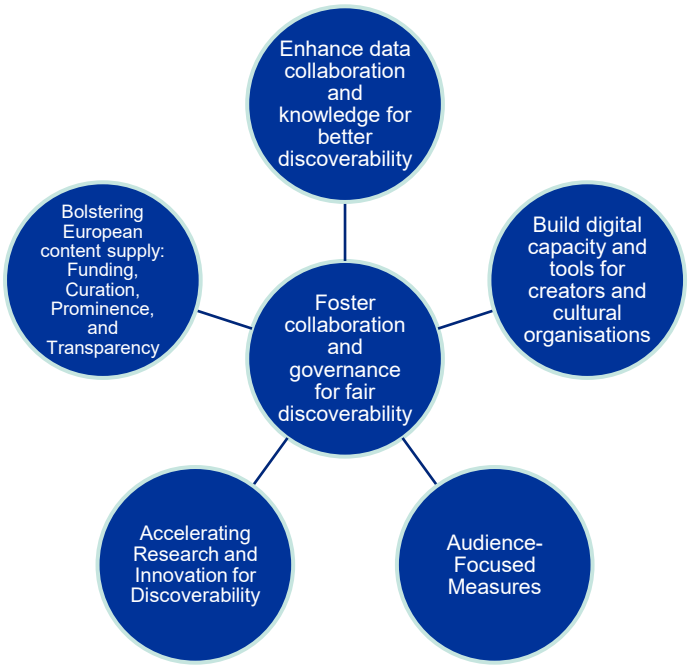
7.2. Recommendations

The below recommendations present a number of approaches to improve the discoverability of diverse European cultural content in the digital environment. Some are aimed at actors in cultural sectors; others at policymakers at European and/or national level.

The recommendations developed in this study are **organised around six interconnected strategic areas that together aim to strengthen the fair and effective discoverability of European cultural content**. These domains reflect the key challenges identified across sectors, as well as the opportunities for coordinated action at EU, national, and industry level. The figure below presents the overarching framework that structures the recommendations, centred on the **need to foster collaboration and governance for fair discoverability**, supported by five complementary action areas:

- Enhancing data collaboration and knowledge for better discoverability
- Building digital capacity and tools for creators and cultural organisations
- Implementing audience-focused measures
- Accelerating research and innovation for discoverability
- Bolstering European content supply through funding, curation, prominence, and transparency

Together, these categories provide a **roadmap for strengthening Europe's capacity to ensure that its diverse cultural works can be found, accessed, and promoted** in a rapidly evolving digital environment.



The recommendations listed below target the cultural and creative sectors covered by the study and therefore do not concern the audiovisual sectors, which as discussed earlier have a specific policy and legal framework.

Foster collaboration and governance for fair discoverability

The complex challenges of online discoverability – spanning algorithm design, market dynamics, and cultural policy – cannot be solved by any single actor. There is a need for structured, ongoing collaboration among all stakeholders: digital platforms, artists/creators, publishers, cultural institutions, policymakers, and researchers. The study underlines this by recommending structured dialogue to address algorithmic transparency, fair revenue, and discoverability improvements. Additionally, policy alignment and exchange of best practices across EU countries would help – currently, approaches to discoverability (and even understanding of the problem) differ across sectors and Member States. Without a formal forum, issues like algorithmic bias or data access for diversity

monitoring may not be adequately addressed, as platforms and creators seldom sit at the same table.

The report emphasises that online discoverability of diverse cultural content should not be treated as an isolated technical challenge but as an **objective in European cultural policy and funding frameworks**. This requires weaving discoverability into EU strategies and support programmes for culture. High-level strategic policy initiatives, such as the recently adopted *Culture Compass for Europe*[561], powerfully assert the critical importance of discoverability and cultural diversity in the digital age. Integrating this focus into the overarching EU strategy for culture will help ensure coherence between policies and encourage downstream policies to evaluate how they impact the visibility of European works online.

Integrating discoverability into funding programmes means **earmarking resources and incentives** for projects that enhance the visibility of European cultural content. Beyond the EU's borders, the practice of international cultural relations could also integrate discoverability goals, promoting European content globally through showcases, partnerships, and digital cultural exchanges.

Recommendations

- **1. Convey an EU multi-Stakeholder forum on discoverability:** The European Commission should convene a structured, multi-stakeholder forum dedicated to the discoverability of European cultural content online with a clear mandate to produce *guidelines, good practices and recommendations*. The forum could bring together platforms, publishers, music labels, authors and artists, national regulators, and academia. Topics could include best-practice guidance on transparency, metadata, prominence and curation, cultural and digital policy (see below recommendations 6, 20 and 21).
- **2. Integrate discoverability in EU cultural policy actions and in the future EU Work Plan for Culture post-2026:** In line with its ambitions in the new *Culture Compass* for Europe and the future *AI strategy for the cultural and creative sectors*, the European Commission should strive for consistency within future EU policy and funding actions with an impact on discoverability. Acknowledging that promoting Europe's cultural and linguistic diversity in the digital environment is as important as traditional cultural preservation, and based on the findings of this study, Member States are encouraged to strengthen their EU cooperation on discoverability, for example, via a dedicated *Open Method of Coordination group*.
- **3. Discoverability in national cultural strategies**: At the Member State level, governments should include digital *discoverability goals* in their

[561] See https://culture.ec.europa.eu/policies/culture-compass

national cultural strategies – for example, setting targets for increasing the visibility of national content on global platforms, or committing to support local digital cultural platforms. By doing so, policy-makers at all levels signal to platforms and cultural industries that this is a priority for the next decade.

- **4. Cross-sector partnerships and agreements:** Member states should encourage public-private partnerships (PPPs) to address discoverability issues, particularly those linked to data availability, quality, and interoperability. For example, cooperation with platforms and cultural organisations for the announced Culture Compass EU Cultural Data Hub could help close existing data gaps by enabling structured collaboration with data providers, metadata aggregators, and other intermediaries. Member State governments can also foster *national roundtables* (bringing local publishers and tech companies together) to mirror the EU-level forum and implement solutions domestically.

Enhance data collaboration and knowledge for better discoverability

The study demonstrates that **data and definitional gaps** continue to hinder a full understanding of how European cultural works are discovered, accessed, and promoted online. Current data limitations, uneven monitoring capacity across sectors, and current metadata practices make it difficult to fully measure exposure diversity or assess the visibility of European content compared to non-European works. While the audiovisual field benefits from structured observation through the European Audiovisual Observatory, other sectors lack equivalent mechanisms, leaving policymakers without systematic indicators. At the same time, rapid technological shifts – from evolving platform algorithms to the growing influence of generative AI – underline the urgency of creating a more resilient and transparent evidence base.

Incomplete or inconsistent metadata is a barrier across many cultural and creative sectors. In music and books alike, missing or unreliable metadata on elements such as language, creator nationality, or genre prevents accurate identification of European works and impacts discoverability. **Further developing metadata and interoperability** therefore is an important recommendation for supporting discoverability. This would enhance transparency and allow creators, researchers, and policymakers alike to understand how European content circulates online.

Recommendations

- **5. Strengthen monitoring and data collection:** Efforts could focus on building a coherent and sustainable framework for cultural data at EU level, including through improving existing frameworks for cultural statistics. The Culture Compass has announced a new EU cultural data hub that could bring together and coordinate data collection across sectors. Such an initiative could regularly monitor *key cultural diversity*

indicators while also supporting data collection in the book sector through existing bodies. The goal would be to improve understanding of how Europeans discover and access cultural content online, including via algorithms, search engines, and social media platforms. It is also important to improve access to platform data on consumption and discovery. To monitor cultural diversity, the EU Cultural Data Hub could track indicators such as:

  - **Share of European repertoire/works** in consumption.
  - **Playlist and curation diversity**, including representation of smaller markets and minority languages.
  - **Cross-border circulation** of European works across platforms.
  - **Linguistic diversity of content offered and consumed**, including multilingual metadata availability.
  - **Diversity in recommendation systems**, e.g., the share of recommended content from different EU regions.
  - Representation of **independent and under-represented creators**, including gender and minority groups.
  - **Metadata completeness and quality**, supporting better discoverability of diverse works.

- **6. Develop coherent and operational definitions of "European works" across the cultural and creative sectors:** Developing coherent and operational definitions of "European works" across cultural and creative sectors is essential for measuring discoverability and improving data collection. While the AVMSD provides a precedent in the audiovisual field, similar clarity is lacking in music, literature, and other sectors, making comparisons and benchmarks difficult. The European Commission, in coordination with Member States and relevant stakeholders, should establish a *common framework* that defines Europeanness based on origin of creation, language, and creator affiliation. This would enable consistent monitoring of cultural diversity and visibility across European markets, and, paired with effective data collection based on clear indicators, allow the *evaluation of possible needs for prominence requirements* to other sectors beyond audio visual (see below Recommendation 20).
- **7. Regular consumer surveys on cultural consumption and discoverability:** Institutionalise regular audience research at EU-level to track changes in cultural consumption and discoverability. The study's one-time consumer survey yielded some invaluable insights (e.g., on perceived ease of finding local vs. EU-content). Making such surveys a recurring effort (biennially, for instance) would help measure the impact of policies and identify new issues. National arts councils and statistical offices can complement this by *collecting data on cultural participation and*

online discovery in their countries (aligning with the Council of EU's Conclusions on empowering the cultural and creative sectors through data-driven audience development).

- **8. Strengthen and harmonise metadata practices across cultural sectors:** Improving metadata quality and interoperability remains one of the most persistent challenges for cultural discoverability. Fragmented standards, incomplete records, and inconsistent practices across sectors continue to limit the visibility of European works online — an issue likely to intensify with the rise of AI-generated content, which will require new forms of metadata to distinguish provenance and authorship. The European Commission could support and coordinate ongoing sector-led efforts to define and align metadata standards through collaboration with existing initiatives such as DDEX for music and ONIX for Books. A pragmatic approach would be to encourage technical working groups within each sector to agree on essential metadata fields (e.g. creator nationality, language, genre, AI-generated content flag) and ensure these standards are interoperable across platforms and Member States. This process should be industry-driven, with EU institutions providing facilitation, guidance, and possible funding (see below recommendation 9).

Build digital capacity and tools for creators and cultural organisations

A theme in the research is the **digital divide within the cultural sector** – not in terms of access to the internet per se, but of the skills, tools, and other resources needed for creators and cultural organisations to effectively promote themselves online. Many smaller creators, artists, independent publishers, local museums, and performing arts groups lack the digital capacity to make their content discoverable in an increasingly crowded online space. The issue is twofold: awareness and expertise on one hand, and financial/human resources on the other. These stakeholders are often **unfamiliar with the very tools and techniques** (from search engine optimisation to using platform analytics) that could amplify their content's visibility. This low level of digital know-how is compounded by insufficient funding to invest in dedicated staff or services for online promotion. The result is that many cultural actors are unable – and sometimes understandably hesitant – to fully embrace digital channels, leaving a vast amount of European cultural content under-promoted and hard to find beyond loyal local audiences. The research identifies this capacity gap as a major limiter of discoverability and calls for targeted measures to **build digital capacity among creators and organisations**.

Recommendations

- **9. Training and Education Programs:** Launch targeted *digital capacity-building initiatives* for the cultural and creative sectors, ensuring that creators, publishers, and cultural professionals have the tools and knowledge to make their works discoverable online. EU institutions and relevant national and regional policymakers could support structured training schemes. In the case of the EU these could be co-funded by

Creative Europe, the upcoming AgoraEU, or Erasmus+. Training programmes could cover metadata best practices, SEO and audience development for cultural content, use of audience data and analytics, as well as basic understanding or recommender systems. Existing initiatives such as CLIP[562], which provides training and tools to help artists manage their metadata and rights, are excellent models that should be supported and scaled at EU level. Furthermore, funding to test practical solutions could be provided, including AI-assisted tagging tools (see below recommendation 16). Supporting smaller publishers, labels, and cultural institutions in adopting these standards—through training, shared infrastructure, or subsidies—would ensure that Europe's cultural diversity is both identifiable and discoverable in the evolving digital environment.

- **10. Mentorship and knowledge sharing:** Establish peer learning networks and mentorship schemes. For instance, connect tech-savvy cultural entrepreneurs with traditional arts organisations to share strategies on audience engagement online. The study calls for sectoral collaboration and peer-to-peer learning in a digital environment – this could be facilitated by the Commission setting up a *Discoverability Mentorship Network* where successful digital content creators mentor smaller peers. EU and sector bodies can also create best-practice guides (e.g., a checklist for optimising a music release for streaming discovery, a guide for authors on leveraging social media). By spreading practical knowledge, this ensures good techniques are adopted widely.

Audience-Focused Measures

The success of discoverability initiatives are also dependent on **audience engagement and capabilities**. The study shows that user behaviour and knowledge are a critical part of the equation: many users are simply unaware of the breadth of European content available, how algorithms curate what they see, and how cultural content is produced. Varying **digital literacy levels and linguistic needs** among audiences are often overlooked in platform design, meaning certain groups (youth, minorities, older generations) may need targeted support. Strengthening audience cultural awareness, digital skills, and inclusive outreach will empower Europeans to actively seek out diverse cultural content online rather than passively consuming what algorithms serve by default.

Recommendations

- **11. Boost digital and AI literacy for content discovery:** Digital and AI literacy programmes should teach users how to take control of their content discovery online and have awareness on algorithmic curation across platforms. Governments and educational bodies (schools, libraries, digital learning hubs) could design and integrate modules on navigating streaming platforms, using advanced search filters, and recognising algorithmic biases in media literacy curricula. By equipping users with skills

[562] See https://goclip.org/en/about

to actively seek out diverse creators and genres, these initiatives empower the public to broaden their cultural consumption.

- **12. Launch awareness campaigns on Europe's diverse content:** EU and national cultural agencies, together with public broadcasters and museums, could run high-visibility digital campaigns to showcase the rich variety of European music, literature, film, and art. These campaigns can highlight lesser-known creators from different countries and explain how recommendation systems work, dispelling the notion that automated "for you" suggestions are neutral or comprehensive. By partnering with popular influencers and media outlets, authorities can raise public consciousness about Europe's cultural diversity online, inspiring audiences to explore beyond the algorithmic status quo.
- **13. Engage young audiences as European cultural diversity ambassadors:** Youth-oriented initiatives can leverage the fact that younger generations are generally more open to new and global content. Ministries of culture and youth organisations should co-create campaigns, challenges, or platform features that encourage young users to discover and share European works.
- **14. Bridge language gaps and include minority communities:** To ensure truly pan-European discoverability, platforms and cultural institutions must better serve linguistic minorities and smaller language markets. This means incorporating more translated and local-language works into recommendation engines and catalogues. EU and national authorities can facilitate *collaborations between distributors, translation initiatives, and platforms* to achieve this. As illustrated in Australia and New Zealand—where partnerships between music export offices and major streaming platforms led to curated local playlists and dedicated promotional initiatives—similar cross-sector collaborations in Europe could help surface content from smaller linguistic markets. Community media and diaspora cultural organisations should also be involved in curating and promoting content relevant to ethnic or regional minorities. These tailored efforts directly address the study's finding that smaller linguistic markets are under-represented online, by actively surfacing content beyond Europe's dominant languages. In practice, this could include funding for *multilingual discovery portals or playlists*, support for subtitling/dubbing projects, and featuring culturally specific content on mainstream homepages.
- **15. Improve digital inclusion for older audiences:** Older Europeans often have lower digital confidence and may stick to familiar content, missing out on the benefits of online cultural offerings. Targeted measures are needed to bring these users into the fold of digital discoverability. Public libraries, community centres and senior organisations (with support from national digital inclusion programs) should provide *training and easy-to-use interfaces* tailored for seniors – for example, tutorial sessions on

using music and e-book apps, or simplified discovery portals highlighting classic and local content. Such initiatives can be paired with *intergenerational learning*, youth volunteers or librarians coach older adults on finding new cultural content online. The goal is to reduce the intimidation factor of digital platforms and demonstrate the value of their vast catalogues.

Accelerating Research and Innovation for Discoverability

Keeping diverse cultural content visible in the digital age requires constant **innovation and foresight**. The online landscape is evolving rapidly – new platforms emerge, algorithms shift, and consumption patterns change – so policies must be continuously updated and *future-proofed*. The study highlights critical gaps that research and experimentation can help fill, from data limitations to the unknown impact of emerging technologies like generative AI. In particular, stakeholders are concerned that without proactive efforts, advances in AI could inadvertently reinforce existing biases, further sidelining niche or local content.

Recommendations

- **16. Boost innovation for better discoverability:** Boost funding opportunities for innovative projects addressing discoverability under dedicated topics and calls in existing EU programmes, such as Horizon Europe or Creative Europe, and the upcoming programmes within the next multiannual financial framework, such as Horizon Europe successor and AgoraEU. These instruments could invite proposals developing innovative discovery tools, cross-border recommendation platforms, or collaborative marketing initiatives for European works. Encouraging a stronger focus on discoverability within these frameworks would support innovation aligned with EU cultural objectives. In particular, Horizon Europe could fund R&D on fair algorithms and AI solutions promoting cultural and linguistic diversity. This could include funding for “sandbox” environments where platforms, cultural institutions, and developers can experiment with new discovery mechanisms in a controlled setting. In such sandboxes, novel recommendation algorithms or interface tweaks can be tested for their impact on exposure diversity without risking unintended fallout on live audiences. Horizon Europe could sponsor trials of alternative recommendation models that explicitly promote a wider range of content. This would be aligned with the EU’s Apply AI strategy announced investments for the development and deployment of European AI models focused on the discoverability of online media, music and literary content.
- **17. Support further research to support adaptive policy review and anticipate the impact of AI generated content:** The EU should strengthen research and evidence-building on the dynamics of cultural discoverability in the digital environment, including issues such as algorithmic bias, filter bubbles, and the growing influence of AI. The rapid spread of AI-generated content risks further marginalising European creators by crowding human-made works out of recommendation systems

and digital catalogues, potentially reducing exposure diversity. Targeted research and pilot projects should be supported—through Horizon Europe, Creative Europe, and cooperation with the EU cultural data hub and sectoral bodies—to analyse how recommendation systems and AI content affect the visibility of European works. Findings could feed into the policy tools used as an evidence base for policy making in the cultural field including, for example, future publications of the planned periodic *State of Culture in the EU* reports. This would enable the EU and Member States to adopt discoverability strategies in line with evolving technologies and evidence-based insights. The European Commission and sectoral organisations could commission focused research and horizon-scanning studies on how generative AI might affect cultural diversity, content discoverability and consumption.

- **18. Invest in tools for better metadata and transparency:** Both the public sector and industry should collaborate to develop technical tools that make diverse content easier to find and algorithmic curation more transparent. At the same time, innovation should focus on tools that audit and explain recommendation outcomes. Stakeholders can create *user-friendly transparency dashboards or diversity audit algorithms* that let creators and regulators monitor how well different content is being recommended. Such tools – potentially supported through Horizon Europe – would enable ongoing, data-driven tuning of platforms to favour inclusion. By funding and widely deploying these technologies, Europe would empower smaller content producers to manage their discoverability, leading to a more level playing field for culturally diverse content.

Bolstering European content supply: Funding, Curation, Prominence, and Transparency

Europe's cultural diversity can only thrive online if the **supply side** of content creation and distribution is nurtured and directed towards diversity. This means investing in the production and translation of content, encouraging that platforms and curators actively **promote a wide range of European works**, and improving **transparency and accountability** on how content is recommended and labelled to users. Recent discussions highlighted several supply-side challenges: for example, generative AI–written books are flooding marketplaces (especially self-publishing platforms) and making it harder to discover genuine works. Additionally, artists and publishers lack insight into algorithms that decide which songs or books get recommended. Cross-border circulation sometimes remains limited by language barriers and market practices. Addressing these issues requires policy and industry action to empower creators, curators, and consumers alike.

Recommendations

- **19. Increase funding for translation and localisation of European works:** The EU and national governments should boost support for literary translation projects, especially for works from smaller languages into more widely spoken ones. By expanding programs like Creative Europe (and

the upcoming Agora) to fund more book translations, Europe can ensure that literary works from any Member State become accessible across the continent. Increased translation funding would help smaller linguistic markets gain presence in digital catalogues and recommendation feeds. Promotion is also crucial: policymakers could expand *distribution and marketing support with a reinforced focus on discoverability* or even introduce a voluntary *"European Translation" label* for bookshops and platforms that showcase a high share of translated titles, incentivising retailers to stock and feature diverse translations. Together, these steps would broaden the pool of content available in each language and bolster cross-border discoverability.

- **20. Strengthen cultural curation and explore content prominence mechanisms:** Digital platforms should be encouraged to actively curate and highlight diverse European content, rather than relying solely on automated popularity-based feeds. To this end, digital platforms should be encouraged to expand their presence in local and under-served markets by opening or designating country and/or regional offices and experts. This would help human editorial curation bring more local and niche works to the forefront with dedicated playlists covering all EU countries. In addition, e-book platforms and online bookstores could feature rotating spotlights on authors from different European regions. To fill the gap, the EU, Member States and the sectors themselves can support *sector-led curation initiatives*. Where commercial platforms under-invest in curation for local culture, public institutions (or public-private partnerships) could step in with dedicated projects. *Prominence guidelines* to foster the visibility of European works could be considered, for example, by encouraging platforms to voluntarily ensure and report on certain European content benchmarks in recommendations management, search results or key discovery surfaces. Any such measures and metrics should be designed in collaboration with industry and tested carefully (for example in the context of the activities of the Multi stakeholder forum, see above Recommendation 1), but the principle is to make European diversity more discoverable by design in the digital age.

- **21. Encourage transparency in recommendation algorithms:** Greater algorithmic transparency would help both creators and consumers. Artists, authors, and other creators currently have little insight into how algorithms decide what content is recommended. Providing more *transparency, including user control*, over these systems can demystify the path to discovery. Concretely, platforms should be encouraged to share data and information about how their recommendation engines rank or curate cultural content with regulators, researchers, and creators (e.g. via creator dashboards). Increased transparency would also let creators adjust their strategies to better reach audiences. For consumers, transparency can be paired with meaningful choice allowing for better understanding of why a given song/book was recommended. For example, users should be

informed about the main parameters used in cultural content recommender systems, notified when content suggestions are algorithmically generated versus human created, be allowed to adjust or opt out for personalised feeds, as well as be given the option to opt into a “local discovery” mode that surfaces more domestic and European works. This recommendation could be facilitated in the context of the proposed EU multi-Stakeholder forum on discoverability (see above recommendation 1).

- **22. Ensure accountability and authenticity in a generative AI era:** The rise of AI-generated content in music and books poses a new challenge for discoverability and content quality. Generative AI books and songs are proliferating rapidly, often flooding platforms with low-quality or unvetted material that can crowd out human creators. The EU’s AI Act sets out transparency requirements for providers and deployers of generative AI systems. To assist with compliance, the AI Office has kick started the process of drawing up a code of practice on transparency of AI-generated content expected to be adopted mid-2026. It is important to ensure that concerns in terms of effective consumer awareness in situations of exposure to entirely synthetic cultural products are exhaustively addressed.

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Annex 2: Further elaboration on the conceptual framework for discoverability

The following sections explain the elements of the conceptual framework in more detail (see Section 2.2).

Engagements

This component encompasses the cultural factors that shape a user's decision to engage in discovery. Before users can embark on a journey of discovery, a variety of forces shape their desire, ability, and opportunity to do so. These factors exist at a number of scales, which are not fully independent of one another. They range from the smallest scale (cultural forms) to the largest (intergovernmental policy) and points in between. Three key points emerge from academic research, policy briefs, white papers, and conference proceedings.

Key Point 1: User demographics and individual practices shape openness, ability and willingness to discover new content.

User factors which shape openness and ability to discover different kinds of culture include socioeconomic status,[563] age, gender, origin, community size of residence,[564] language,[565] and neurodiversity.[566] Related to these are individual influences which include factors like personal motivations,[567] mindsets,[568] everyday practices[569], and levels of technological literacy.[570] For example, a wealth of sociological literature demonstrates a link between socioeconomic

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[570] Johnson, Catherine, Matt Hills, and Laurie Dempsey. "An Audience Studies' Contribution to the Discoverability and Prominence Debate: Seeking UK TV Audiences' 'Routes to Content.'" *Convergence* 0, no. 0 (n.d.): 13548565231222605. https://doi.org/10.1177/13548565231222605.

factors (like parental education) and openness to consuming a diverse range of cultural content[571] - with a research that started in the musical field.[572] In addition, recent work on user interactions with Spotify suggests that effort level and definitions of a successful search for new music shape the kinds of discovery practices that listeners engage in.

Key Point 2: Cultural forms and technological developments are intertwined, shaping what can be discovered

Cultural forms themselves can present different kinds of challenges and affordances when it comes to discoverability. This differs by sector, but is most evident in the case of intangible cultural heritage,[573] for example with dance.[574] Here, the form itself presents a number of challenges that practitioners in the field are working to overcome. For users to discover digital content, technology must be in place which aids them in this quest. In the case of music and audiovisual content, this includes the development of streaming services[575], and social media platforms which encourage user-generated content.[576] But it also includes the technology used to capture more analogue forms of culture like dance, historic sites, and visual arts. Artificial intelligence[577], virtual reality,[578] geographic information systems (GIS), 3D modelling, and gaming[579] are useful examples of this technology. Here access and ability to harness technology at the user and organisational level influence what and how culture can be discovered. The example of dance again is informative. As a form of cultural expression inseparable from music, it is nonetheless more difficult to capture for posterity, and so new techniques for doing so and cataloguing these practices are required. By doing so, future users will be able to discover the dance practices of their own and other communities.

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[571] O. Sullivan et T. Katz-Gerro, « The Omnivore Thesis Revisited: Voracious Cultural Consumers », *European Sociological Review* 23, no 2 (13 décembre 2006): 123-37, https://doi.org/10.1093/esr/jcl024.

[572] Richard A. Peterson, « Understanding audience segmentation: From elite and mass to omnivore and univore », *Poetics* 21, no 4 (1992): 243-58, https://doi.org/10.1016/0304-422X(92)90008-Q.

[573] European Expert Network on Culture and Audiovisual (EENCA) (2019). Platforms on the future of Cultural Heritage: A problem-solving approach – Report on the Prague Platform on 'Cultural Heritage in the Digital Age'.

[574] Doulamis, Anastasios, Athanasios Voulodimos, Nikolaos Doulamis, Sofia Soile, and Anastasios Lampropoulos. "Transforming Intangible Folkloric Performing Arts into Tangible Choreographic Digital Objects: The Terpsichore Approach," 451–60, 2017. https://doi.org/10.5220/0006347304510460.

[575] Datta, Hannes, George Knox, and Bart Bronnenberg. *Changing Their Tune: How Consumers' Adoption of Online Streaming Affects Music Consumption and Discovery*. *SSRN Electronic Journal*, 2017. https://doi.org/10.2139/ssrn.2782911.

[576] Coulter, A. (2022). Marketing agile artists: How music labels can leverage TikTok's virality. *Journal of the Music & Entertainment Industry Educators Association*, *22*(1), 135-156.

[577] Das, Dr-Bishwa, Hima Maringanti, and Niladri Dash. "Role of Artificial Intelligence in Preservation of Culture and Heritage," 92–97, 2022. https://doi.org/10.4324/9781003332183-16

[578] Dechaene, Saskia. "Virtual Reality as an Accessibility Tool to Cultural Heritage Sites for People with Autism Spectrum Disorder," 2023. http://hdl.handle.net/2105/71669.

[579] Economou, Maria. "Heritage in the Digital Age," 215–28, 2015. https://doi.org/10.1002/9781118486634.ch15.

Key Point 3: Policy shapes what kinds of culture are prioritised for digitisation and discovery

Governmental, intergovernmental, and institutional policies can powerfully shape what kinds of culture are prioritised and available for discovery.[580] This is particularly relevant in the realm of cultural heritage, where sites, items, and practices can be particularly challenging to digitise (unlike music and books). Here, policies can shape public support for digitisation,[581] best practices for digitisation,[582] and platform development.[583] Policies enacted at the European and at the national or regional level, along with practices at the institutional level, have shaped priorities for digitisation of cultural heritage. They have also led to the development of Europeana, launched in 2008 as Europe's digital platform for discovering tangible and intangible cultural heritage.

Presentations

The component of Presentations encompasses the various mediums which are used to present information to users as they engage with cultural content within an online platform. Specifically, this component is concerned with the various design choices which are undertaken towards the organisation of content within online interfaces. The granularity of interface design can be infinite, starting from the font and colour decisions and spanning to the overall feel and navigation signals provided to users.[584] Essentially, they can be considered as "all that greets a user" at the face of a website or app, including content organisation and the navigational options.[585]

Ultimately, Presentations are vehicles for discovery because the information presented to users upon entering a platform initiates their physical interaction with

[580] Council of Europe Committee of Ministers (2017). Recommendation of the Committee of Ministers to member States on the European Cultural Heritage Strategy for the 21st century. ; Helly, D. (2018). Instituto Europeo del Mediterraneo, Cultural Heritage protection in the Mediterranean Region Beyond Resilience. ; Lähdesmäki, T., Čeginskas, V., Kaasik- Krogerus, S., Mäkinen, K., Turunen, J,. (2020). Creating and Governing Cultural Heritage in the European Union. Routledge.

[581] European Commission (2020). Open Public consultation on Digital for cultural heritage.

[582] Interreg Europe (2018). Policy brief from the Policy Learning Platform on environment and resource efficiency, Digital solution in the field of cultural heritage. ; Network of European Museums Organizations (NEMO) (2020). Final report: Digitization and IPS in European Museums.

[583] European Commission (2018). Report on the evaluation of Europeana and the way forward, European Parliament and Council.; Gasmi, G., & Prlja, D. (2020). Perspectives of digitization of cultural heritage in European countries. *Fiat Iustitita*, (1), 83-91.

[584] Knees, Peter, Markus Schedl, and Masataka Goto. "Intelligent User Interfaces for Music Discovery: The Past 20 Years and What's to Come." In *International Society for Music Information Retrieval Conference*, 2020. https://api.semanticscholar.org/CorpusID:225105855.

[585] Morris, Jeremy Wade, and Devon Powers. "Control, Curation and Musical Experience in Streaming Music Services." *Creative Industries Journal* 8, no. 2 (2015): 106–22. https://doi.org/10.1080/17510694.2015.1090222 ; Besseny, Amelia. "Lost in Spotify: Folksonomy and Wayfinding Functions in Spotify's Interface and Companion Apps." *Popular Communication* 18, no. 1 (2020): 1–17. https://doi.org/10.1080/15405702.2019.1701674.

various content entities.[586] For example, a user might explore a book suggestion website such as Goodreads and then be prompted to make a purchase that leads to reading the suggested book. The discussion of this component is heavily tied to the roles that prominence plays in the discovery process. The essentiality of not only content availability but also of its prominence is recognised in the AVMSD, particularly in Article 7a which allows Member States to take measures to "[…] ensure the appropriate prominence of audiovisual media services of general interest" and Article 13 of the same Directive which, in addition to the obligation of securing 30% share of European works in the on-demand catalogues, it stipulates that these works must be ensured prominence. Recital 35 of the AVMSD gives a few examples of how prominence can be ensured such as dedicated sections on homepages, in search or marketing campaigns. Similarly, discussions surrounding diversity of exposure and its effects on the kinds of content available to users have begun to percolate in the domains of journalism studies and policy.[587]

For example, one can consider the home page of a music streaming service as a visualisation of the Presentation component. Each element in the design of such a homepage can be considered an individual portion of the Presentation component, illustrating its role in the discovery process. Companies invest significant efforts into their interfaces, carefully calibrating their ability to present information that satisfies both their own and their users' objectives. For example, on a large scale, such a homepage will have a unique and carefully thought-out design scheme that will *present* users with a cohesive image of the platform they are engaging with. On a more practical level, once the homepage is visualised, a user is often *presented* with many different artists, genres, albums or playlists that they can begin listening to. Here, the careful calibration between the prominence and visibility allocated to various items begins to play an enormous role in the discovery process of a user.

Key Point 1: How information is presented affects the likelihood of interaction with it

McKelvey & Hunt (2019) designed a conceptual framework for considering various elements that contribute to discovery.[588] Among their three distinct components, they presented *surrounds,* a similar concept to that of Presentations, to discuss the first touchstone in their formalisation of discovery. There, *surrounds* are defined as a study in "the economy of screen space". They

[586] Johnson, Catherine, Matt Hills, and Laurie Dempsey. "An Audience Studies' Contribution to the Discoverability and Prominence Debate: Seeking UK TV Audiences' 'Routes to Content.'" *Convergence* 0, no. 0 (n.d.): 13548565231222605. https://doi.org/10.1177/13548565231222605.

[587] Napoli, Philip. "Exposure Diversity Reconsidered." *Journal of Information Policy* 1 (January 2011). https://doi.org/10.5325/jinfopoli.1.2011.0246. ; Helberger, Natali. "Challenging Diversity - Social Media Platforms and a New Conception of Media Diversity," 2018. https://api.semanticscholar.org/CorpusID:158890139.

[588] McKelvey, Fenwick, and Robert Hunt. "Discoverability: Toward a Definition of Content Discovery Through Platforms." *Social Media + Society* 5, no. 1 (2019): 2056305118819188. https://doi.org/10.1177/2056305118819188.

note that the spacing, sizing, placement, and relational positions of elements on a screen are made up of intentional choices that impact the consumption of content.

Indeed, many researchers have explored the design paradigms used by engineers to control the "flows" of attention on their interfaces [589]. For example, Besseny (2019) presents an analysis of the various "wayfinding" functions on Spotify's interface, showing how each one contributes to the movement of user traffic on the platform.[590] Finally, Briand et al. (2024) present a scientific analysis of the ways in which user tests are employed to determine which homepage designs best motivate users to discover new music on the Deezer platform.[591] Researching online bookstores, Lee and Koubek (2010) discovered that content organisation, navigation systems, and visual organisation were the most important factors influencing user preferences.[592] Similarly, research by Kuhar and Merčun (2024) on how users navigate and select books in the online bookstore of Slovenia's largest publishing house, showed that interface features such as results list, navigation, item page and recommendation lists contribute to the attractiveness of the page design, and affects users' perceptions and emotions.[593] The results of their user research, suggested that users' negative emotions during the search and selection process were mainly caused by a lack of sufficient metadata, leading to usability problems that affected their overall experience and triggered feelings of frustration and mistrust (e.g., missing or generic book covers, book descriptions, star ratings). The researched pointed out that like physical bookshops, the information conveyed by the cover design and the visual appeal play an essential role in the selection process; thus, showing how interface elements affect user interaction.

Information design and interface presentation act as gateways to cultural content not only in the more obvious sectors such as music and books, but also in other sectors such as cultural heritage. Immersive experiences using augmented reality (AR) in museums and art galleries are ideal tools to interact and

[589] Oswald K., Packer J. (2012). Flow and mobile media: Broadcast fixity to digital fluidity. In Packer J., Wiley S. B. C. (Eds.), *Communication matters: Materialist approaches to media, mobility, and networks* (pp. 276-287). New York, NY: Routledge.

[590] Besseny, Amelia. "Lost in Spotify: Folksonomy and Wayfinding Functions in Spotify's Interface and Companion Apps." *Popular Communication* 18, no. 1 (2020): 1–17. https://doi.org/10.1080/15405702.2019.1701674.

[591] Briand, Léa, Théo Bontempelli, Walid Bendada, Mathieu Morlon, François Rigaud, Benjamin Chapus, Thomas Bouabça, and Guillaume Salha-Galvan. "Let's Get It Started: Fostering the Discoverability of New Releases on Deezer," 286–91, 2024. https://doi.org/10.1007/978-3-031-56069-9_33.

[592] Lee, Sangwon, and Richard J. Koubek. 2010. "The Effects ofUsability and Web Design Attributes on User PreferenceFor E-Commerce Web Sites." Computers in Industry 61,no. 4: 329-41. https//doi.10.1016/j.compind.2009.12.004.

[593] Kuhar, Maja and Tanja Merčun. 2024. "Navigating an Online Bookstore: User Experience Insights from Eye-Tracking And Think-Aloud". Knowledge Organization 51(5). p.320-329. DOI:10.5771/0943-7444-2024-5-320.

experience history and culture (tom Dieck & Jung, 2017).[594] Experiments using AR applications in museum settings allows for a great level of interaction and transition between physical and virtual spaces, as exemplified by the pilot study at the Shanghai Museum of Glass where various interactive functions presented on the participants' smartphone screens (i.e., icons triggering certain actions such as sharing, screenshotting, smashing) would prompt them to interact with the exhibits facilitating two-way interactive communication (Yang, 2023).[595] Using immersive technologies employs a different way of presenting information to the user, which is different than the way information is presented on, for example, the homepage of a streaming service. Presentation techniques such as interactive timelines, zoomable high-resolution images, or story-driven curation significantly boost user interaction.

The links between visibility allocated to various content items and the likelihood of their consumption is also well documented. For example, Maaso & Spilker (2022) present six specific techniques which are used by "hybrid gatekeeping mechanisms to try to steer or nudge users in certain directions by foregrounding some things at the expense of others - that is, by making some types of choices easier for users and also by making some types of choices for users".[596] Alternatively, Ferraro et al. (2021) use empirical tools to visualise the feedback loop between visibility and engagement by simulating a recommender system that combats bias related to gender representation in music recommendations and showcasing how several iterations of engagement with a debiased recommender system can boost representation of female artists among a broad listener group.[597]

The discussion of placement has also explored the effect of song placement in relation to concrete playlists with established viewerships. For example, Maaso & Spilker (2022)[598] have explained that "context is the new genre", signifying the importance that a listening context plays on the definition of a song. This can be further seen in the work of Descottes et al. (2022) which shows that one of the techniques for boosting local music is "promoting artists within their local communities … [helping to] increase the market share of local musicians and create proximate, geolocalised fanbases which have the potential to bring longer-

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[594] M. Claudia tom Dieck, Timothy Hyungsoo Jung, Value of augmented reality at cultural heritage sites: A stakeholder approach,

Journal of Destination Marketing & Management, Volume 6(2), 2017, p. 110-117, https://doi.org/10.1016/j.jdmm.2017.03.002.

[595] Yang, Shuran. "Storytelling and user experience in the cultural metaverse". (2023). *Helyion*, 9(4). https://doi.org/10.1016/j.heliyon.2023.e14759

[596] Maasø, Arnt, and Hendrik Storstein Spilker. "The Streaming Paradox: Untangling the Hybrid Gatekeeping Mechanisms of Music Streaming." In *Popular Music and Societ*, 2022

[597] Ferraro, Andres, Xavier Serra, and Christine Bauer. "Break the Loop: Gender Imbalance in Music Recommenders." In *Proceedings of the 2021 Conference on Human Information Interaction and Retrieval*, 249–54. CHIIR '21. New York, NY, USA: Association for Computing Machinery, 2021. https://doi.org/10.1145/3406522.3446033

[598] Maasø, Arnt, and Hendrik Storstein Spilker. "The Streaming Paradox: Untangling the Hybrid Gatekeeping Mechanisms of Music Streaming." In *Popular Music and Society*, 2022

term benefits such as continued streams or attendance at live shows".[599] Similarly, Aguiar and Waldfogel (2021) describe the concrete financial impacts of a song being placed on one of Spotify's hit playlists, showing that being added to "Today's Top Hits, a playlist with 18.5 million followers, raises streams by almost 20 million." [600]

Ultimately, the significance of these findings indicates that understanding and shaping user discovery requires explicit interface engineering, such that users are nudged towards specific content directions.

Key Point 2: Current interfaces do not necessarily promote discovery

As the value proposition of various platforms which serve cultural content have shifted towards their curatorial algorithms, the importance of promoting discovery has become one of the rising objectives among the organisations which develop these platforms.[601] Thus, a large body of research within the scientific community has sprung up around the design of new interfaces that promote discovery within various content platforms.[602]

Within recent years, the community of researchers that explore the human-computer interactions that are empowered by various interface design have begun to explore the limitations of current systems. In particular, there have been various critiques of list-based presentation, suggesting that it limits the likelihood of users discovering novel or niche content. For example, Hogan (2015) explains that "invisible algorithms are limited by a reductionism in presentation of information evident in single column ordering and ranked lists, which are inherently taxonomical", indicating that the current formats present concrete limitations on the ways in which content can be presented to users.[603] To combat this, many researchers have begun to design systems that improve visualisations of social and cultural connections between various forms of content in an attempt to 'nudge' users towards more diverse consumption habits. For example, Taramigkou et al. (2013) argue that "most online recommender systems do not enable users to experience novelty and serendipity in the provided

[599] Descottes, Guillaume, Eric Denut, Cheryl Kwok, and Eva Klein. "Revenue Distribution and Transformation in the Music Streaming Value Chain." UNESCO, 2022.

[600] Aguiar, Luis, and Joel Waldfogel. "Netflix: Global Hegemon or Facilitator of Frictionless Digital Trade?" *Journal of Cultural Economics* 42 (August 2018). https://doi.org/10.1007/s10824-017-9315-z

[601] Drott, Eric. "Why the Next Song Matters: Streaming, Recommendation, Scarcity." *Twentieth-Century Music* 15 (October 2018): 325–57. https://doi.org/10.1017/S1478572218000245; Raff, Andreas, Andreas Mladenow, and Christine Strauss. "Music Discovery as Differentiation Strategy for Streaming Providers," 2020. https://doi.org/10.1145/3428757.3429151 ; Briand, Léa, Théo Bontempelli, Walid Bendada, Mathieu Morlon, François Rigaud, Benjamin Chapus, Thomas Bouabça, and Guillaume Salha-Galvan. "Let's Get It Started: Fostering the Discoverability of New Releases on Deezer," 286–91, 2024. https://doi.org/10.1007/978-3-031-56069-9_33

[602] Besseny, Amelia. "Lost in Spotify: Folksonomy and Wayfinding Functions in Spotify's Interface and Companion Apps." *Popular Communication* 18, no. 1 (2020): 1–17. https://doi.org/10.1080/15405702.2019.1701674.

[603] Hogan, B. (2015). From Invisible Algorithms to Interactive Affordances: Data After the Ideology of Machine Learning. In: Bertino, E., Matei, S. (eds) Roles, Trust, and Reputation in Social Media Knowledge Markets. Computational Social Sciences. Springer, Cham. https://doi.org/10.1007/978-3-319-05467-4_7

suggestions".[604] In their work, they present a system that is specifically designed to 'nudge' users towards more diverse listening habits. Similarly, Petridis et al. (2022) postulate that presenting music recommendations using a network (visualised like a metro map in which there are stations and connecting lines) that visualises connections between artists from various genres based on their proximity in user listening data to help users explore beyond their preferred genres.[605] The authors run user studies to validate that their presentation of music content promotes discovery among their user base, showcasing how significant changes to visualisations of cultural content can promote the likelihood that users expand their listening horizons.

The research and implementation of new models of recommenders can play a key role in supporting alternative systems that improve the discoverability of diverse European content. This aligns closely with ongoing efforts to rethink how current platform interfaces shape user engagement with cultural material. The abovementioned studies demonstrate that rethinking how content is recommended and presented—through innovative interface designs and transparent recommendation systems—can directly support the EU's objective of improving the discoverability of diverse European content.

Key Point 3: There is a feedback loop between visibility, exposure, and discovery

Digital platforms shape how users discover content through the design of their interfaces. As McKelvey and Hunt (2019) explain, interfaces are designed not only to deliver content, but to keep users continuously engaged.[606] Although platforms promote the idea of "on-demand viewing," what users actually see and access is heavily influenced by how these platforms organise and present content. Behind the scenes, platforms make decisions about what content is indexed, what is excluded, and how information is prepared for algorithmic use. These choices have a direct impact on what becomes visible and discoverable. [607] [608]

[604] Taramigkou, Maria, Efthimios Bothos, Konstantinos Christidis, Dimitris Apostolou, and Gregoris Mentzas. "Escape the Bubble: Guided Exploration of Music Preferences for Serendipity and Novelty." In *Proceedings of the 7th ACM Conference on Recommender Systems*, 335–38. RecSys '13. New York, NY, USA: Association for Computing Machinery, 2013. https://doi.org/10.1145/2507157.2507223.

[605] Petridis, Savvas, Nediyana Daskalova, Sarah Mennicken, Samuel F Way, Paul Lamere, and Jennifer Thom. "TastePaths: Enabling Deeper Exploration and Understanding of Personal Preferences in Recommender Systems." In *Proceedings of the 27th International Conference on Intelligent User Interfaces*, 120–33. IUI '22. New York, NY, USA: Association for Computing Machinery, 2022. https://doi.org/10.1145/3490099.3511156.

[606] McKelvey, Fenwick, and Robert Hunt. "Discoverability: Toward a Definition of Content Discovery Through Platforms." *Social Media + Society* 5, no. 1 (2019): 2056305118819188. https://doi.org/10.1177/2056305118819188.

[607] Gillespie, Tarleton. "The Relevance of Algorithms," 2013. https://doi.org/10.7551/mitpress/9780262525374.003.0009

[608] Morris, Jeremy Wade, and Devon Powers. "Control, Curation and Musical Experience in Streaming Music Services." *Creative Industries Journal* 8, no. 2 (2015): 106–22. https://doi.org/10.1080/17510694.2015.1090222

Research shows that there is a strong link between how content is personalised, how visible it is, and how users ultimately discover it. The way information is displayed can affect not only what users consume, but also how they perceive the content and themselves. For instance, Prey (2020) points out that even simple features like displaying play counts next to an artist's profile can influence how audiences evaluate them—and how artists see themselves.[609] These metrics become part of the content experience. As users interact with personalised interfaces, their behaviour is tracked and fed back into the system, which further shapes what they are shown.[610] This feedback loop, seen in platforms like Last.fm, leads users to continuously adapt their preferences in response to algorithmic suggestions—ultimately redefining what content they engage with over time.

Facilitators

The component of Facilitators encompasses **the methods through which content is curated on platforms.** Unlike the previous component, Presentations, which pertains to the interfaces that visualise content, Facilitators serve as the driving force behind the selection of the content which ends up being exposed. **The term facilitator was intentionally selected to encompass both algorithmic and human curation practices. The purpose of this section is to understand and survey these different Facilitators and contextualise their role in the discovery ecosystem, rather than providing the precise configuration of any algorithmic system.**

Online platforms allow users to engage with millions of pieces of cultural content. Users discover this content either organically through the platform's search functionalities or in a mediated form through algorithmically-generated recommendations, or by curated editorial picks. As content available on competing platforms becomes increasingly homogenised, the ability of a platform to facilitate content discovery has clearly become essential for its success[611] - a main motivation for continued platform subscription[612] and improved user retention.[613]

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[609] Prey, Robert. "Performing Numbers: Musicians and Their Metrics." In *The Performance Complex*, edited by David Stark, 241–58. Oxford University Press, 2020

[610] Gillespie, Tarleton. "The Relevance of Algorithms," 2014. https://doi.org/10.7551/mitpress/9780262525374.003.0009

[611] Garcia-Gathright, Jean, Brian St. Thomas, Christine Hosey, Zahra Nazari, and Fernando Diaz. "Understanding and Evaluating User Satisfaction with Music Discovery." In *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*, 55–64. SIGIR '18. New York, NY, USA: Association for Computing Machinery, 2018. https://doi.org/10.1145/3209978.3210049

[612] Mäntymäki, M., & Islam, A. K. M. (2015). Gratifications from using freemium music streaming services: Differences between basic and premium users.

[613] Brown, S. C., & Krause, A. (2016). A psychological approach to understanding the varied functions that different music formats serve. In *14th Biennial International Conference on Music Perception and Cognition* (pp. 849-851).

Key Point 1: Facilitators can come in many different modalities

The discussion of this component expands on the work of McKelvey et al (2019) which presents the concept of *vectors*, or mechanisms which are used to direct the flow of attention on platforms.[614] Here, one can draw on the abstract formalism suggested by McKelvey et al (2019) and present a detailed discussion of the various forms that Facilitators can embody. At the highest level, Facilitators can be readily categorised along a spectrum between two poles: algorithmic (or self-guided) and human.

Given the recent advances in artificial intelligence, the notion of algorithmic curation has garnered a lot of attention from public and academic discourse. Particularly in the less technical literature, there has been a tendency to address algorithms as a monolith. However, as Hesmondalgh (2023) explains, "the term 'algorithm' has entered into everyday discourse, but this is… misleading. Algorithms are better thought of as 'algorithmic systems'" which indicates a network of many different algorithms that work in tandem to facilitate user engagements with content[615]. In fact, there are many different forms of algorithms that are deployed towards shaping online experiences: "these include: retrieving information via search engine, filtering out unwanted material, producing content, and providing lists of potential options for consumptions via recommendation algorithms".[616] At the root of most algorithmic systems lies the notion of mapping or translating cultural concepts into those which can be interpreted by a computer language.[617] For example, consider a music streaming platform. For any algorithmic system to engage with musical content, one must first find a way of mapping music to a numerical sequence that can be stored, interpreted, and disseminated by an algorithmic system. Within the field of computer science, this translation is often engaged with through the use of two intersecting fields of research: content and context-based *representation learning*. These two forms of algorithmic systems are referred to as representation learning because they *learn* to *represent* human artifacts using a computer-interpretable format.[618] Content-

[614] McKelvey, Fenwick, and Robert Hunt. "Discoverability: Toward a Definition of Content Discovery Through Platforms." *Social Media + Society* 5, no. 1 (2019): 2056305118819188. https://doi.org/10.1177/2056305118819188.

[615] Hesmondhalgh, David, Raquel Campos Valverde, Kaye Valdovinos, and Li Zhongwei. "The Impact of Algorithmically Driven Recommendation Systems on Music Consumption and Production - a Literature Review," February 9, 2023.

[616] Hesmondhalgh, David, Raquel Campos Valverde, Kaye Valdovinos, and Li Zhongwei. "The Impact of Algorithmically Driven Recommendation Systems on Music Consumption and Production - a Literature Review," February 9, 2023.

[617] Prey, Robert. "Knowing Me, Knowing You: Datafication on Music Streaming Platforms." In *Big Data Und Musik: Jahrbuch Für Musikwirtschafts- Und Musikkulturforschung 1/2018*, edited by Michael Ahlers, Lorenz Grünewald-Schukalla, Martin Lücke, and Matthias Rauch, 9–21. Wiesbaden: Springer Fachmedien Wiesbaden, 2019. https://doi.org/10.1007/978-3-658-21220-9_2.

[618] Prey, Robert. "Knowing Me, Knowing You: Datafication on Music Streaming Platforms." In *Big Data Und Musik: Jahrbuch Für Musikwirtschafts- Und Musikkulturforschung 1/2018*, edited by Michael Ahlers, Lorenz Grünewald-Schukalla, Martin Lücke, and Matthias Rauch, 9–21. Wiesbaden: Springer Fachmedien Wiesbaden, 2019. https://doi.org/10.1007/978-3-658-21220-9_2; Seaver, Nick. *Algorithms and the Makers of Music Recommendation*. Chicago: University of Chicago Press, 2022. https://doi.org/doi:10.7208/chicago/9780226822969.

based learning represents an artifact on the basis of individual characteristics that can be useful in categorising an object. For example, in the musical space, this can be something as simple as providing a genre tag for a song and as complex as representing all of the frequencies that resonate in the duration of a song. Ultimately, the key aspect of this form of representation learning is that it is defined on the basis of a predetermined categorisation methodology and applied to all the items available in a catalogue on an individual basis. In contrast, context-based learning represents an artifact in relation to others in the catalogue. In this case, a song is not considered on the basis of its own individual harmonies, rhythm, or stylistic elements, but rather in relation to other songs that can be considered similar. These calculations of similarity are often extracted from large scale listening patterns which have been gathered by documenting the listening practices of an extensive user base. Ultimately, it is not these details that should be the most important, but rather the understanding that at every moment, people are making decisions about how this translation process should occur. As explained in later sections of this text, the decisions made at the basis of these algorithms have significant impact on how they are then engaged with.

The most prominent forms of algorithmic systems that participate in the discovery pipeline, are, of course, recommender systems. These systems often employ hybrid methods that combine both context and content-based methods for learning representations of items in an item catalogue. With the rise of machine learning and artificial intelligence, many of these systems have begun to employ the techniques designed by the research community in their industrial applications. Furthermore, even more recently, the proliferation of generative conversational models such as ChatGPT have also taken on the responsibility of Facilitating engagement with cultural content.[619]

At the other end of the spectrum, exists the notion of human curation. Despite the proliferation of algorithmic curation and content moderation, many companies continue to employ human editors in their dissemination practices. For example, many music streaming services continue to employ human curators that organise popular playlists[620]. Similarly, in 2016, Deezer revealed to *The Guardian* that they employed 50 editors[621]. The French digital music store and music streaming service Qobuz stands out from the rest, as it has been centering its identity and prioritising human-driven curation over algorithmic curation; the Qobuz team stated during an interview that “[h]uman recommendations are central to the

[619] Balakrishnan, Janarthanan, and Yogesh K. Dwivedi. “Conversational Commerce: Entering the next Stage of AI-Powered Digital Assistants.” *Annals of Operations Research* 333, no. 2 (February 1, 2024): 653–87. https://doi.org/10.1007/s10479-021-04049-5.

[620] Aguiar, Luis, and Joel Waldfogel. “Platforms, Power, and Promotion: Evidence from Spotify Playlists*.” *The Journal of Industrial Economics* 69, no. 3 (September 2021): 653–91. https://doi.org/10.1111/joie.12263.

[621] Dredge, S. (2016, May 23). The new tastemakers: A day in the life of a music-streaming playlister. *The Guardian*. Retrieved from https://www.theguardian.com/technology/2016/may/23/ music-streaming-services-playlister-sam-lee-deeze

music discovery experience".[622] Although known for its emphasis on human curation, in 2021 Qobuz launched 'My Weekly Q', an algorithmically generated personalised playlist based on individual listening habits.[623]

However, in reality, most of the Facilitators which are actually deployed on streaming platforms at this time will exist in a grey area that lies at the intersection between these two important poles, existing in a territory which can be considered as pseudo-algorithmic. In their work Bonini & Gandini (2019) spoke about the "algotorial power" of platforms, showing the "specific intermingling of human algorithmic processes" by exposing the ways in which algorithmic calculations were affecting the decisions made by human curators at music streaming companies[624]. Similarly, the advent of auto-play functionalities, in which an algorithm is expected to extend a user generated playlist can be considered a form of pseudo-algorithmic content curation [625].

Key Point 2: The scale on which Facilitators operate forces certain requirements on the ways in which content is categorised

In his book, *Computing Taste: Algorithms and the Makers of Music Recommendation*, Nick Seaver traces the origins of the curatorial practices that lie at the foundation of music streaming platforms. He highlights how the massive expansion of content created an impression of overwhelm among user bases, arguing that it was precisely this problem that Facilitators were designed to solve. This phenomenon, occasionally termed "the paradox of choice",[626] "choice overload", or "information overload"[627] manifests itself when the number of options provided to users is demotivating. He explains how the birth of modern algorithmic recommendation, often called *collaborative filtering* (explained in the previous paragraph as a context-based method for representation learning), surfaced as an attempt to ameliorate this issue by designing rules for filtering through content. As the mechanisms behind this filtration gained traction in the computer science community, they were co-opted by many different domains, and ultimately cast into the role of content curation. Behind this movement is the rapid growth of user bases that were engaging with content catalogues and the competition between various providers.

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[622] Fifteen Questions. "The Qobuz team about High-End Streaming and the Specialised Listener". (2024). Available at: https://15questions.net/interview/qobuz-team-about-high-end-streaming-and-specialised-listener/page-1/

[623] Qobuz. "Qobuz Unveils Two New Features - My Weekly Q and Apple CarPlay Online - to Create a Tailor-Made Musical Experienceo3-mini-high". (2021). Retrieved from: https://community.qobuz.com/press-en/icwq0wswhs9j1xnf99ui248pfhv2b8-jzx47-dd658-32zkb-phj6g-dxle5-zg6hm-w8pjp-kejdp-b6tp5

[624] Bonini, Tiziano, and Alessandro Gandini. "'First Week Is Editorial, Second Week Is Algorithmic': Platform Gatekeepers and the Platformization of Music Curation." *Social Media + Society* 5 (October 2019): 205630511988000. https://doi.org/10.1177/2056305119880006.

[625] Raff, Andreas, Andreas Mladenow, and Christine Strauss. "Music Discovery as Differentiation Strategy for Streaming Providers," 2020. https://doi.org/10.1145/3428757.3429151.

[626] Schwartz, Barry. *The Paradox of Choice: Why More Is Less.* The Paradox of Choice: Why More Is Less. New York, NY, US: HarperCollins Publishers, 2004.

[627] Toffler, A. (1970). Future Shock. New York: Random House.

At the root of the various Facilitator designs is the conceptualisation of user retention and the attempts to codify it such that it can become an objective for an algorithmic system to maximise. As Seaver (2022) explains in the music industry, "the ultimate measure of functionality is 'the hang-around factor' -- what keeps listeners listening… 'every single change that happens has been exactly measured for its listening and retentive impact'"[628]. What initially began as a simple rules-based system has been extended into infinitely complex algorithmic systems made up of many different pieces. Often these systems employ machine learning techniques that involve training algorithms on previously gathered data and testing their predictive capabilities. The quantitative nature of this process requires all the information gathered by a platform to be standardised in a single format. Thus, irrespective of their modality, Facilitators rely on *datafication* practices to make data-based curatorial decisions. In recent years, researchers have begun commenting on the problematic nature of *datafication.*[629] Broadly, datafication encompasses the process through which qualitative artifacts are converted into quantifiable data for the purpose of digitisation[630] and interaction with algorithmic systems.[631] For example, Robert Prey has spoken in depth about connections between the data collection practices of music streaming services and the discovery patterns of their clients, drawing a direct link between the ways in which user interactions with a song are interpreted and the value algorithmic systems will associate with a song.[632] In fact, datafication of listening practices has been heavily critiqued as "a surveillance technology used to consolidate the economic and cultural power of a few technology companies providing music streaming as part of platform economy" [633]. Furthermore, "it has been analysed

[628] Seaver, Nick. *Algorithms and the Makers of Music Recommendation*. Chicago: University of Chicago Press, 2022. https://doi.org/doi:10.7208/chicago/9780226822969.

[629] Gillespie, Tarleton. "The Relevance of Algorithms," 2013. https://doi.org/10.7551/mitpress/9780262525374.003.0009; Prey, Robert. "Knowing Me, Knowing You: Datafication on Music Streaming Platforms." In *Big Data Und Musik: Jahrbuch Für Musikwirtschafts- Und Musikkulturforschung 1/2018*, edited by Michael Ahlers, Lorenz Grünewald-Schukalla, Martin Lücke, and Matthias Rauch, 9–21. Wiesbaden: Springer Fachmedien Wiesbaden, 2019. https://doi.org/10.1007/978-3-658-21220-9_2; Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (December 11, 2020): 071–089. https://doi.org/10.7146/mediekultur.v36i69.121216; Born, Georgina, Jeremy Morris, Fernando Diaz, and Ashton Anderson. "Artificial Intelligence, Music Recommendation, and the Curation of Culture," 2021.

[630] Mayer-Schönberger, Viktor, and Kenneth Cukier. *Big Data: A Revolution That Will Transform How We Live, Work, and Think*, 2013.

[631] Prey, Robert. "Knowing Me, Knowing You: Datafication on Music Streaming Platforms." In *Big Data Und Musik: Jahrbuch Für Musikwirtschafts- Und Musikkulturforschung 1/2018*, edited by Michael Ahlers, Lorenz Grünewald-Schukalla, Martin Lücke, and Matthias Rauch, 9–21. Wiesbaden: Springer Fachmedien Wiesbaden, 2019. https://doi.org/10.1007/978-3-658-21220-9_2.

[632] Prey, Robert. "Knowing Me, Knowing You: Datafication on Music Streaming Platforms." In *Big Data Und Musik: Jahrbuch Für Musikwirtschafts- Und Musikkulturforschung 1/2018*, edited by Michael Ahlers, Lorenz Grünewald-Schukalla, Martin Lücke, and Matthias Rauch, 9–21. Wiesbaden: Springer Fachmedien Wiesbaden, 2019. https://doi.org/10.1007/978-3-658-21220-9_2.

[633] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (December 11, 2020): 071–089. https://doi.org/10.7146/mediekultur.v36i69.121216.

as a factor in changing music business dynamics and decision-making processes".[634] And, most importantly, scholars have also focused on how datafication can lead to new curatorial practices that enable detrimental forms of algorithmic bias.[635] Another adjacent concept that plays a key role in the discussion of Facilitators is that of *metadata*. While *datafication* is a broad term which encompasses the various technologies used to digitise information, metadata is the outcome of these *datafication* practices. In order to categorise and store the vast amounts of information that catalogue all the creative content and user interactions that arise within a platform, the computer science community has developed techniques for *tagging* and organising their data. This categorisation is often referred to as metadata and is represented as a collection of numbers that associate an item to predefined categories designed by a proprietary company. For example, a very simple form of metadata can be a binary variable that indicates the gender of a user, 0 indicating a male and 1 a female. Even from the simple example presented in the previous sentence, one can see how such datafication practices and the metadata they produce are limited in their ability to express complex subjects such as gender (which is no longer considered a binary state). Indeed, many researchers have strongly critiqued these methods, highlighting that they are governed by a "profoundly normative set of base assumptions about the… subject".[636] For example, in the realm of music streaming, Born et al. have explained that "classifications of audio features may be highly efficient, but they do not necessarily reflect an intelligent analysis of music. [As such] computer models of audio features are usually based on very particular qualities drawn from recordings of global commercial popular music, rather than reflecting the breadth of musical sounds and cultures worldwide".[637]

Key Point 3: Objectives for content moderation have effects on discoverability

Within the socio-technical fields, the potential negative consequences of algorithmic curation have long been a topic of important discussion. Particularly in relation to discoverability, researchers have raised the discussion of "filter bubbles"[638]. This phenomenon occurs when a user's interactions begin to narrow in diversity over time without the user being aware of such narrowing. The exact cause of a filter bubble can be hard to pinpoint, due to the complexity of the inner

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[634] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (December 11, 2020): 071–089. https://doi.org/10.7146/mediekultur.v36i69.121216.

[635] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (December 11, 2020): 071–089. https://doi.org/10.7146/mediekultur.v36i69.121216.

[636] Born, Georgina, Jeremy Morris, Fernando Diaz, and Ashton Anderson. "Artificial Intelligence, Music Recommendation, and the Curation of Culture," 2021.

[637] Ibid.

[638] Pariser, E. (2011). The filter bubble: How the new personalized web is changing what we read and how we think. Penguin Press.

workings of the algorithmic systems which are powering recommendation engines. However, several researchers have linked its occurrence to the widespread metrics and objectives which are used to train most recommendation-adjacent algorithms: accuracy. As explained in previous sections, a large component of understanding a user's taste patterns involves interpreting their interactive patterns. In order to facilitate this engagement, interaction patterns are often represented as a large collection of zeroes and ones with a one indicating an interaction between an item (e.g. a book) and a user. The most canonical algorithms are then trained via an accuracy objective where they are expected to accurately predict whether or not a user has interacted with an item. Critics have explained that this approach holds a variety of limitations which can hold grave consequences for the ecosystem surrounding creative content and its consumption. For example, accuracy metrics have been linked to biases related to popularity[639] or gender.[640] Nevertheless, the filter bubble hypothesis itself remains disputed, with critics raised from a theoretical[641] or empirical perspective[642] (Haim et al., 2018; Michiels et al., 2022; Ranaivoson, 2019).

The search for alternatives has long been a controversial topic in the research spheres. Alex Galloway (2014) has explained that "what recommender systems researchers see as a technique for broadening users' horizons by introducing them to new materials, critics see as stultifying, always comparing users with one another inside a frame that cannot meaningfully change".[643] Within the broader computer science community, researchers have attempted to explore objectives that are able to ameliorate the bias issues presented above by shifting the focus away from accuracy. Deldjoo et al. (2024) highlight the various methodologies for designing objectives for recommendation systems that specifically ensure diversity.[644] This focus on ensuring diversity has primarily revealed a focus on improving user engagement and satisfaction through practical outcomes, such as

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[639] Turnbull, Douglas R., Sean McQuillan, Vera Crabtree, John Hunter, and Sunny Zhang. "Exploring Popularity Bias in Music Recommendation Models and Commercial Steaming Services," 2022. https://arxiv.org/abs/2208.09517.

[640] Ferraro, Andres, Xavier Serra, and Christine Bauer. "Break the Loop: Gender Imbalance in Music Recommenders." In Proceedings of the 2021 Conference on Human Information Interaction and Retrieval, 249–54. CHIIR '21. New York, NY, USA: Association for Computing Machinery, 2021. https://doi.org/10.1145/3406522.3446033.

[641] Bruns, A. (2019). Filter bubble. Internet Policy Review, 8(4). https://doi.org/10.14763/2019.4.1426.

[642] Haim, M., Graefe, A., & Brosius, H.-B. (2018). Burst of the filter bubble? Digital Journalism, 6(3), 330–343. https://doi.org/10.1080/21670811.2017.1338145. Michiels, L., Leysen, J., Smets, A., & Goethals, B. (2022). What are filter bubbles really? A review of the conceptual and empirical work: A review of the conceptual and empirical work. In A. Bellogin, L. Boratto, O. C. Santos, L. Ardissono, & B. Knijnenburg (Eds.), Adjunct proceedings of the 30th ACM conference on user modeling, adaptation and personalization (pp. 274–279). ACM. https://doi.org/10.1145/3511047.3538028. Ranaivoson, H. (2019). Online platforms and cultural diversity in the audiovisual sectors. In L. Albornoz & M. T. García Leiva (Eds.), Audiovisual industries and diversity: Economics and policies in the digital era (pp. 100–118). Routledge. https://doi.org/10.4324/9780429427534-6.

[643] Galloway, Alexander R. Protocol: How Control Exists after Decentralization. Cambridge, MA, USA: MIT Press, 2004.

[644] Deldjoo, Yashar, Dietmar Jannach, Alejandro Bellogin, Alessandro Difonzo, and Dario Zanzonelli. "Fairness in Recommender Systems: Research Landscape and Future Directions." *User Modeling and User-Adapted Interaction*34, no. 1 (March 1, 2024): 59–108. https://doi.org/10.1007/s11257-023-09364-z.

increasing user interaction, avoiding the filter bubble effect, and fostering long-term platform loyalty, without explicitly mentioning any influence that corresponds to specific policymaking incentives.[645] However, as this field continues to grow, it is important to note that this burgeoning field of research remains relatively niche within the broader computer science community and that despite its important advances, there remain very serious calls for more interdisciplinary initiatives to be launched within this trajectory.[646]

Interpreters

The component of Interpreters encompasses the various mechanisms which are used to analyse and interpret user interactions with cultural content within an online platform. As mentioned in the discussion related to the previous component, Facilitators, the process of content curation, both algorithmic and human, relies heavily on predicting what users will engage with. However, as Cunningham et al. (2024) argue, aside from the actions and interactions taken by a user to engage with the platform (e.g., likes, comments, upvotes, downvotes, watch time), there are non-engagement signals (e.g., item 'quality' proxies and 'item-level' surveys about the specific items including questions such as 'would you like to see more like this?, is this item informative?, worth your time?') that platforms could also use to determine the items ranking and aid with the interpretations of user interactions.[647] Clearly, the importance of engagement metrics is not limited to online spaces. For example, as Prey (2020)[648] explains when discussing the role that metrics play in the proliferation of musical content, the "contemporary recording industry is turning to data to help 'rationalise' decision making in an attempt to recover from declining revenues and increasing uncertainty." However, as the methodologies for gathering metrics grow in magnitude and breadth, via the widespread integration of centralised content streaming platforms, the power allocated to them increases accordingly. Thus, "increasingly, decisions on which artists to sign to a recording contract, where to tour, which bands to book, or even which track to release are being influenced by such data" (Prey, 2020).[649]

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[645] Ping, Y., Li, Y., & Zhu, J. (2024). Beyond accuracy measures: The effect of diversity, novelty and serendipity in recommender systems on user engagement. *Electronic Commerce Research*. https://doi.org/10.1007/s10660-024-09813-w

[646] Selbst, Andrew D., Danah Boyd, Sorelle A. Friedler, Suresh Venkatasubramanian, and Janet Vertesi. "Fairness and Abstraction in Sociotechnical Systems." In *Proceedings of the Conference on Fairness, Accountability, and Transparency*, 59–68. FAT* '19. New York, NY, USA: Association for Computing Machinery, 2019. https://doi.org/10.1145/3287560.3287598.

[647] Cunningham, T., Pandey, S., Sigerson, L., Stray, J., Allen, J., Barrilleaux, B., Iyer, R., Milli, S., Kothari, M., & Rezaei, B. (2024). What We Know About Using Non-Engagement Signals in Content Ranking. ArXiv, abs/2402.06831.

[648] Prey, Robert. "Performing Numbers: Musicians and Their Metrics." In *The Performance Complex*, edited by David Stark, 241–58. Oxford University Press, 2020.

[649] Prey, Robert. "Performing Numbers: Musicians and Their Metrics." In *The Performance Complex*, edited by David Stark, 241–58. Oxford University Press, 2020.

There have been many works which discuss the kinds of data which are collected on various content platforms.[650][651][652] Many researchers have raised concerns about privacy[653] and bias [654] in the context of this discussion. Ultimately, the focus of this work is not whether data is collected, but rather how these collection practices affect the potential for discovery on a platform. In the ensuing discussion, it is important to remain purposefully abstract about the formatting of this data, focusing instead on the requirement of a specific format and the consequences of even having one. The crucial point to note is that irrespective of the specific data requirements, the complex reliance of various stakeholders on the availability and interpretability of engagement metrics has created a standardisation effect, often referred to as 'datafication', in which everything must be represented in a form that is interpretable to an algorithmic system.[655] [656] [657] [658] For example, Robert Prey (2018) explains how the ways in which users are sorted into categorised segments based on their listening practices on streaming platforms is "heavily influenced by categories that are defined and demanded by advertisers and brand needs."[659]

Key Point 1: Metrics used to evaluate user engagement rely on incomplete information

As mentioned in the Facilitator component, one of the key forms of data that is collected can be broadly termed "engagement feedback". This kind of feedback can be considered both explicit and implicit. Explicit feedback is collected, for example, through formats such as 'like' buttons, verbal comments, and shares with friends.[660] The explicit nature of this engagement often means that it is

[650] Prey, Robert. "Nothing Personal: Algorithmic Individuation on Music Streaming Platforms." *Media, Culture & Society* 40, no. 7 (2018): 1086–1100. https://doi.org/10.1177/0163443717745147

[651] Prey, Robert. "Performing Numbers: Musicians and Their Metrics." In *The Performance Complex*, edited by David Stark, 241–58. Oxford University Press, 2020.

[652] Born, Georgina, Jeremy Morris, Fernando Diaz, and Ashton Anderson. "Artificial Intelligence, Music Recommendation, and the Curation of Culture," 2021.

[653] Mazzoli, Eleonora Maria. "Online Content Governance: Towards a Framework for Analysis for Prominence and Discoverability." *Journal of Digital Media & Policy*, 2020. https://api.semanticscholar.org/CorpusID:229073552.

[654] Ferraro, Andres, Xavier Serra, and Christine Bauer. "Break the Loop: Gender Imbalance in Music Recommenders." In *Proceedings of the 2021 Conference on Human Information Interaction and Retrieval*, 249–54. CHIIR '21. New York, NY, USA: Association for Computing Machinery, 2021. https://doi.org/10.1145/3406522.3446033.

[655] Born, Georgina, Jeremy Morris, Fernando Diaz, and Ashton Anderson. "Artificial Intelligence, Music Recommendation, and the Curation of Culture," 2021.

[656] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (2020): 71–89. https://doi.org/10.7146/MEDIEKULTUR.V36I69.121216.

[657] Raff, Andreas, Andreas Mladenow, and Christine Strauss. "Music Discovery as Differentiation Strategy for Streaming Providers," 2020. https://doi.org/10.1145/3428757.3429151.

[658] Prey, Robert. "Nothing Personal: Algorithmic Individuation on Music Streaming Platforms." *Media, Culture & Society* 40, no. 7 (2018): 1086–1100. https://doi.org/10.1177/0163443717745147.

[659] Ibid.

[660] Gerlitz, Carolin, and Anne Helmond. "The like Economy: Social Buttons and the Data-Intensive Web." *New Media & Society* 15, no. 8 (2013): 1348–65. https://doi.org/10.1177/1461444812472322.

treated as a more authentic and precise indication of user preferences. However, given the scale of data that is necessary to train many of the algorithmic systems that are employed as Facilitators, the quantity of explicit feedback provided by each user is not sufficient to infer their taste patterns. Thus, another, more nebulous form of feedback called implicit feedback is gathered by inferring implicit meaning from the actions of users. Implicit feedback is collected passively and continuously as a user engages with a system in the form of ambiguous actions such as "listens", "skips", or mouse movements.[661] For example, on musical platforms, affinity between a user and a song is tied to the conviction that music similarity is a representative indicator of positive engagement. And often this musical similarity is inferred from cultural meaning which is inferred from songs being placed together in a specific playlist.[662] Alternatively, another heuristic that is used to infer interest is the duration of listening that a user engages in related to a particular song. For example, listening to a song without skipping it implies a user's interest in the song. But, as pointed out by Pedersen (2020) this is only a crude indication that a user genuinely enjoyed a song [663]. In fact, research on autoplay, a form of Facilitation that infers satisfaction based on how many times a user skips the song recommended to them, is inconclusive on whether it is able to truly facilitate enjoyment. [664]

Drott (2018) builds on this idea to suggest that "by measuring engagement primarily by means of quantitative data from implicit feedback from users — such as time spent on the platform, skip rates, listening patterns and playlist creation — Spotify also potentially ends up prioritising a specific form of music discovery that prompts users to spend more time listening and expend less effort choosing what to listen to next".[665] In the end, these engagement patterns are then used to shape the kinds of content that will be recommended in the future. For example, many curatorial platforms will, in an attempt to capture attention, keep track of trending topics that can be popular with a broad audience. As Gillespie (2016) points out, "trending algorithms calculate the current activity around every post

[661] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (2020): 71–89. https://doi.org/10.7146/MEDIEKULTUR.V36I69.121216.

[662] Chodos, Asher. "What Does Music Mean to Spotify? An Essay on Musical Significance in the Era of Digital Curation." *INSAM Journal of Contemporary Music, Art and Technology*, July 2019, 36–64. https://doi.org/10.51191/issn.2637-1898.2019.2.2.36.

[663] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (December 11, 2020): 071–089. https://doi.org/10.7146/mediekultur.v36i69.121216.

[664] Eriksson, Maria. "Close Reading Big Data: The Echo Nest and the Production of (Rotten) Music Metadata." *First Monday*, June 16, 2016. https://doi.org/10.5210/fm.v21i7.6303.

[665] Drott, Eric. "Why the Next Song Matters: Streaming, Recommendation, Scarcity." *Twentieth-Century Music* 15 (October 2018): 325–57. https://doi.org/10.1017/S1478572218000245.

by combining some measure of each item's popularity, novelty, and timeliness".[666]

Key Point 2: There are many underlying assumptions embedded in the interpretation of user consumption patterns

As Gillespie (2014), a critical researcher based at Microsoft explains, the implications of algorithm providers' attempts to thoroughly know and predict their users' behaviour - and the conclusions they draw – matter.[667] This is because the aggregation of this information is often used to infer important decisions made by content streaming platforms. Moreover, the underlying assumptions that are coded in the gathering and interpretive practices of many platforms can perpetuate certain limiting beliefs. For example, as Born et al. (2021) explain, the process of datafication assumes that tastes "evolve according to a universal logic derived from an analysis of aggregated behaviour of millions of listeners" often excluding unpredictable or dynamically evolving tastes.[668] Similarly, Pedersen (2020) presents the notion that using aggregate engagement patterns to infer taste causes a homogenisation effect which manifests in a "convergence of listening practices" on music streaming platforms.[669] This is supported by Andreas Raff who explains that "different people might want to discover music in dissimilar ways while devoting different amounts of control" but many streaming services choose to design their algorithms to cater to an imagined "normative" user.[670] As Gillespie (2018) explains, there is an urgent need for scholarship on the "complex feedback loops generated by the interaction between the ongoing contributions of users and the ongoing interventions of platforms."[671]

Many scholars have raised concerns about the lack of transparency in the calculation and consequences of this interpretive practice. For example, Gillespie (2014, p. 168) pointed out that "the criteria by which algorithms determine what is relevant, how those criteria are obscured from us, and how they enact political choices about appropriate and legitimate knowledge".[672] This situation is problematic because, as he later highlights, "data about user's interactions with

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[666] Gillespie, Tarleton. "#Trendingistrending: When Algorithms Become Culture." In *Algorithmic Cultures: Essays on Meaning, Performance and New Technologies*. Routledge, 2016. https://www.microsoft.com/en-us/research/publication/trendingistrending-when-algorithms-become-culture-3/.

[667] Gillespie, Tarleton. "The Relevance of Algorithms," 2014. https://doi.org/10.7551/mitpress/9780262525374.003.0009.

[668] Born, Georgina, Jeremy Morris, Fernando Diaz, and Ashton Anderson. "Artificial Intelligence, Music Recommendation, and the Curation of Culture," 2021.

[669] Pedersen, Rasmus Rex. "Datafication and the Push for Ubiquitous Listening in Music Streaming." *MedieKultur: Journal of Media and Communication Research* 36, no. 69 (2020): 71–89. https://doi.org/10.7146/MEDIEKULTUR.V36I69.121216.

[670] Raff, Andreas, Andreas Mladenow, and Christine Strauss. "Music Discovery as Differentiation Strategy for Streaming Providers," 2020. https://doi.org/10.1145/3428757.3429151

[671] Gillespie, Tarleton. "Platforms Are Not Intermediaries." *Georgetown Law and Technology Review* 2, no. 2 (July 2018): 198.

[672] Gillespie, Tarleton. "The Relevance of Algorithms," 2014. https://doi.org/10.7551/mitpress/9780262525374.003.0009.

the platform are used as a basis for decisions about the interface design as well as priorities in editorial recommendations (Gillespie, 2016)."[673]

Transparency is a point of contingency in the matter of discoverability between the companies' business models, the users of the services, and the creators, pointing to the need of explainable AI to understand how the input and the output of the AI systems work. The lack of transparency concerning how the recommender systems work is also problematic for regulatory oversight, monitoring, auditing and evaluating, as companies' press releases covering such explanations are often limited and condensed, with technical details purposefully omitted (Hesmondalgh et al., 2023).[674] A literature review conducted by Haque et al. (2023) on empirical studies investigating users' perspective of explainable AI revealed that the effects of such explainability lead to trust, transparency, understandability, usability and fairness, which can motivate users to adopt and use AI-based systems.[675] Some of the content recommended on Netflix is revealed under a category called 'Because You Watched […]' as a form of explaining the algorithmic choice. Another example are the recommendations on Spotify which include in-title explanations such as 'Albums featuring songs you like', or Release Radar which includes a short description of the playlist "Catch all the latest music from artists you follow, plus new singles picked for you. Updates every Friday". Or on Goodreads the recommendation section 'Because you enjoyed […]. 'These are all various attempts to explain to the user why they receive certain recommendations based on the companies' interpretation of the users' consumption patterns. However, Born et al., (2021) argue that these explanations are the platforms' attempt to avoid the interrogation of their algorithmic black boxes which are treated as trade secrets.

A pertinent example of concerning inferences, involves Netflix's recommendation systems which received an update in 2017 where the algorithm to personalise the artwork or thumbnail images of their titles changed depending on the user's tastes and viewing history. However, this was not without controversy as some users reported that these thumbnails were racially and ethnically driven and were often misrepresentative of the contents' cast, implying false plot lines and actors' time allocated on-screen (Singh, 2020).[676] Although Netflix argued that it does

[673] Gillespie, Tarleton. "#Trendingistrending: When Algorithms Become Culture." In *Algorithmic Cultures: Essays on Meaning, Performance and New Technologies*. Routledge, 2016. https://www.microsoft.com/en-us/research/publication/trendingistrending-when-algorithms-become-culture-3/

[674] Hesmondhalgh, David, Raquel Campos Valverde, Kaye Valdovinos, and Li Zhongwei. "The Impact of Algorithmically Driven Recommendation Systems on Music Consumption and Production - a Literature Review," February 9, 2023

[675] Haque, A. B., Islam, A. K. M. N., & Mikael, P. (2023). Explainable artificial intelligence (XAI) from a user perspective: A synthesis of prior literature and problematizing avenues for future research. *Technological Forecasting and Social Change, 186*, 122120. https://doi.org/10.1016/j.techfore.2022.122120

[676] Singh, Spandana (2020) How Video and E-Commerce Platforms Use Recommendation Systems to Shape User Experiences https://d1y8sb8igg2f8e.cloudfront.net/documents/Why_Am_I_Seeing_This_2020-03-25.pdf

not use demographic information to personalise users' experience on the platform, the algorithms can make inferences using patterns in the data. This is an example showcasing the need for the companies to provide greater transparency as to how these algorithmic systems engage in decision-making. Similar to how users are entitled to know why certain content is recommended to them, creators also want explanations for the placement of their content e.g., in playlists or in the carousels on video streaming services. This creates a situation in which although creators would like access to more information, companies are inhibited to offer such information as it is considered a trade secret; e.g., inorganically recommended content (i.e., recommendations not resulting from the users' consumption patterns but resulting from commercial agreements between the platform and the content providers/rightsowners) can be linked to paid promotions or payments for prominence, which can create biases in the recommender systems and in the positioning of the content on the interface (Afilipoaie et al., 2021).[677]

Key Point 3: Interpretations of reality shape future reality

Many works have begun exploring the feedback loops underlying the discovery process. For example, Hesmondalgh has spoken about the entanglement between listening practices and algorithmic curation, discussing "how users reshape their practices to suit the algorithms they depend on, and how they can turn algorithms into terrains for political contest, sometimes even to interrogate the politics of the algorithm itself."[678] This statement can be explained by users' attempts to circumvent, navigate and resist the algorithmic curation and personalisation features of their music streaming services, as a way to game the algorithms by employing various tactics to train or mould the system to provide the output they wished for. Freeman, Gibbs and Nansen (2022) exemplify these practices as often involving "the use of the *Like* features, or by adding songs deliberately to certain playlists, or re-listening to particular songs to emphasise their preference for them".[679] By doing so, users "reshape the datasets on which the algorithm crafts its output" (Xie, Du and Bai, 2022).[680] Similarly, Gillespie (2016) has discussed the importance of understanding "not just how algorithms shape culture, but how they become culture".[681] As many researchers have argued, "the individual is not so much revealed as constructed by his or her

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[677] Afilipoaie, A., Dewaele, S., & Donders, K. (2021). 'Signal integrity' in the Audiovisual Media Services Directive: Process, positions and policies examined and explained. *Journal of Digital Media & Policy, 12*(3), 345–365. https://doi.org/10.1386/jdmp_00075_1

[678] Hesmondhalgh, David, Raquel Campos Valverde, Kaye Valdovinos, and Li Zhongwei. "The Impact of Algorithmically Driven Recommendation Systems on Music Consumption and Production - a Literature Review," February 9, 2023.

[679] Freeman, S., Gibbs, M., & Nansen, B. . (2022). 'Don't mess with my algorithm': Exploring the relationship between listeners and automated curation and recommendation on music streaming services. *First Monday*, *27*(1). https://doi.org/10.5210/fm.v27i1.11783

[680] Xie, X., Du, Y., & Bai, Q. (2022). Why do people resist algorithms? From the perspective of short video usage motivations. Frontiers in psychology, 13, 941640. https://doi.org/10.3389/fpsyg.2022.941640

[681] Gillespie, Tarleton. "#Trendingistrending: When Algorithms Become Culture." In *Algorithmic Cultures: Essays on Meaning, Performance and New Technologies*. Routledge, 2016. https://www.microsoft.com/en-us/research/publication/trendingistrending-when-algorithms-become-culture-3/.

data".[682] Within the computer science community, researchers have long been aware of the feedback loop that exists between the data which an algorithmic recommender system is given during training and the biases it enacts during its deployment. For example, the notion of 'popularity bias' has been coined to define a cycle in which items which were previously popular become exponentially more popular due to the algorithmic supposition that they are universally liked. As the algorithm becomes more and more 'convinced' that these items are popular, it continuously chooses these self-same items to recommend to users, thus further increasing its popularity. Clearly, at the core of this spiral is the algorithmic interpretation of high popularity as a sign of quality or satisfaction. In time, this bias has actually been shown to decrease user satisfaction on music platforms (Ekstrand et al., 2018), breeding a large push in the computer science community to design techniques for mitigating it (Chen et al., 2023).

Experiences

The component of Experiences encompasses **modalities through which users experience their engagement with platforms.** The content of this component is intrinsically tied to Presentations, Facilitators, Interpreters, because Experiences are the outcomes of a user interacting with these components. Concretely, this component is focused on understanding the factors which influence a user's perception of their own engagement in the activity of discovery. User perceptions of discoverability and their ability to discover content on a platform is a dynamic phenomenon which is re-examined with each new platform engagement.

Key Point 1: Context surrounding a discovery experience impacts the expectations and performance of discovery in users

Several works have explored the different personas that users present when discovering music. Trocchia et al. identified a broad collection of 11 objectives that consumers describe as distinct motivators for their music discovery practices.[683] These include memory triggers, inspiration, identification, and many more. Crucially, a single user can experience many different categories presented in this list either consecutively or simultaneously. This research serves as a foundation for understanding the various interaction modes that codify discovery of cultural content in online spaces. Since then, the field of human computer interaction has focused on understanding the various axes which distinguish different user experiences on online platforms. One of the key components in this area of research is the level of engagement that a user is

[682] Prey, Robert. "Nothing Personal: Algorithmic Individuation on Music Streaming Platforms." *Media, Culture & Society* 40, no. 7 (2018): 1086–1100. https://doi.org/10.1177/0163443717745147.

[683] Trocchia, Philip, Melissa Apps, Sarah Tote, and Mcnish. "A Typology Of Music Consumption Motivations." *International Business & Economics Research Journal (IBER)* 1 (March 2011). https://doi.org/10.19030/iber.v1i9.3972.

exhibiting. Mok et al. (2022) perform a longitudinal study of users on Spotify.[684] In this work, they make a clear distinction between the methods which users employ for their discovery, contrasting between *programmed* and *organic* content. Here *programmed* content is defined as "content drive by [a] platform, e.g. personalisation and recommendation, algorithmically generated radio stations, or curated playlists" (in our case, these can be seen as elements encompassed by the Facilitators component of this text) while *organic* content includes "tracks whose streaming is determined by the user or other users, such as playlists or songs for which the user directly searched."

Lee & Price (2015) present several personas that users embody when interacting with music streaming services.[685] These personas differ in their expectations regarding what discovery means to them. For example, a user engaging with the 'Active Curator' profile is actively seeking concretely novel content that will be recommended via algorithmic curation. Meanwhile a 'Nonbeliever' is actively against engaging with any curation and will insistently only listen to music they have manually found. Raff (2020) also distinguishes between active and passive listening on music streaming platforms, which he formalises as a spectrum with each one on either pole.[686] By creating this spectrum, he designs a rubric for understanding different user perspectives on discovery and how to best serve them. His work builds on the personas presented by Lee & Price (2015) to associate identity with a position on the spectrum between active and passive listening.[687] This, in turn, is deeply tied with the content previously presented in the Presentations component. For example, Freeman et al. (2023) explain that passive users are more likely to be affected by the interface designs than active users.[688] Similarly, connections can be made to the forms of explicit and implicit feedback which are discussed in the Interpreters component. This is because users who are engaged in passive listening are less likely to provide explicit feedback. Gathright et al. (2018) build on this research, actively presenting four differing objectives that users present in their music discovery practices.[689] Similar to the work of Lee & Price (2015) they also distinguish users based on the

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[684] Mok, Lillio, Samuel F. Way, Lucas Maystre, and Ashton Anderson. "The Dynamics of Exploration on Spotify." *Proceedings of the International AAAI Conference on Web and Social Media* 16, no. 1 (May 2022): 663–74. https://doi.org/10.1609/icwsm.v16i1.19324.

[685] Lee, Jin Ha, and Rachel Price. "Understanding Users of Commercial Music Services through Personas: Design Implications." In *International Society for Music Information Retrieval Conference*, 2015. https://api.semanticscholar.org/CorpusID:8084171.

[686] Raff, Andreas, Andreas Mladenow, and Christine Strauss. "Music Discovery as Differentiation Strategy for Streaming Providers," 2020. https://doi.org/10.1145/3428757.3429151.

[687] Lee, Jin Ha, and Rachel Price. "Understanding Users of Commercial Music Services through Personas: Design Implications." In *International Society for Music Information Retrieval Conference*, 2015. https://api.semanticscholar.org/CorpusID:8084171

[688] Freeman, Sophie, Martin Gibbs, and Bjørn Nansen.. "Personalised But Impersonal: Listeners' Experiences of Algorithmic Curation on Music Streaming Services," 1–14, 2023. https://doi.org/10.1145/3544548.3581492

[689] Garcia-Gathright, Jean, Brian St. Thomas, Christine Hosey, Zahra Nazari, and Fernando Diaz. "Understanding and Evaluating User Satisfaction with Music Discovery." In *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*, 55–64. SIGIR '18. New York, NY, USA: Association for Computing Machinery, 2018. https://doi.org/10.1145/3209978.3210049.

temporal nature of their discovery objectives, contrasting between users who are seeking to find new music *right now* and those who are curating collections for the future.[690] While much of the existing research concerns the music sector, the implications clearly extend to other sectors where discovery can take place in a variety of contexts tied to user personas. For example, consumers may seek editorial recommendations - whether from experts or other consumers (e.g. on Goodreads, Letterboxd, or in travel blogs), engage in own curatorial activities either of previously consumed culture or for future use (e.g. with virtual shelves, watchlists or by collecting souvenirs from visited places), pursue organic, active discovery or a passive one (e.g. relying on algorithmic recommendations in online stores, VOD services, and other).

Key Point 2: Each individual discovery session can be independently understood

It is important to note that each time a user engages in a discovery session they can be approaching it with a different goal in mind. Unlike the elements of the Engagements component which remain relatively static or evolve slowly over time, Experiences are incredibly dynamic phenomena. For example, as mentioned earlier, Gathright et al. (2018) distinguish between a user who is engaged in curation (i.e., active discovery that is intended to find music for later listening) and exploration (i.e. passive discovery that outsources the finding of new music to a curatorial system).[691] Their work analyses the interaction between these different user experiences and the expectations which they place on an algorithmic curatorial system, showcasing the connections between the Experiences component and that of Facilitators. Clearly, the same user can be associated with different objectives, although in this case, not at the same time. Similarly, McKelvey & Hunt. (2019) also comment on the interconnected nature of Experiences and the systems which direct flow of attention in online platforms (Presentations, Facilitators, and Interpreters).[692] They present three specific experiences that serve as an abstract framework for understanding the ways in which users co-create their own experiences with content in online spaces. For example, they discuss how a user's psychological state can affect their likelihood to engage in one of their proposed patterns: *Gorking Out*. This experience is best exemplified by binging content, in which a user uses autoplay to passively engage with content as a form of regulating their emotional state. As they explain, this is not necessarily a permanent form of engagement, rather one of the many

[690] Lee, Jin Ha, and Rachel Price. "Understanding Users of Commercial Music Services through Personas: Design Implications." In *International Society for Music Information Retrieval Conference*, 2015. https://api.semanticscholar.org/CorpusID:8084171

[691] Garcia-Gathright, Jean, Brian St. Thomas, Christine Hosey, Zahra Nazari, and Fernando Diaz. "Understanding and Evaluating User Satisfaction with Music Discovery." In *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*, 55–64. SIGIR '18. New York, NY, USA: Association for Computing Machinery, 2018. https://doi.org/10.1145/3209978.3210049.

[692] McKelvey, Fenwick, and Robert Hunt. "Discoverability: Toward a Definition of Content Discovery Through Platforms." *Social Media + Society* 5, no. 1 (2019): 2056305118819188. https://doi.org/10.1177/2056305118819188.

different experiences that a user can have online. The dynamic nature of these different experiences has also been studied using empirical longitudinal studies.

Mok et al. (2022) explain that content consumption on music platforms "ranges from exploration, when users encounter content they haven't previously consumed, to exploitation, when users re-consume content they have interacted with many times in the past".[693] As they show in their findings, users often oscillate between these two poles, sometimes discovering novel content and other times re-discovering previously gathered collections. They also break down historical listening patterns showing that users explore in bursts rather than engaging in the same form of discovery each time they engage with the platform. Alternatively, Sguerra et al. (2022) define a discovery as a series of repeated engagements with a specific song.[694] They showcase the temporal dynamics of a user discovering a new song in real time, showing how an initial exposure, followed by a burst of re-listens, and ending in a tapering effect can be used to identify the dynamics of discovery in interaction patterns on Deezer. Together, these findings indicate that the Experience of discovery is motivated by psychological states, temporal contexts, and concrete individual objectives associated with an engagement.

Importantly, the importance of these factors might differ from sector to sector. For one, repeated consumption or spontaneous decisions might be highly important for music but less so for films or books and even less so for cultural heritage. Still, consumers might engage in bingeing of audiovisual works – in particular TV series – driven by their current emotional states and context (see e.g. Alfonsi et al., 2022; Rubenking and Bracken, 2018 or Tefertiller and Maxwell, 2018). They can also revisit movies, books or even geographical locations as a way of self-affirmation or experience synthesis (see Russell and Levy, 2011).

Key Point 3: User experiences are shaped by their relationships with Facilitators which, in turn, affects their attitudes towards discovery

Given the unpredictable, constantly evolving nature of discovery objectives that users espouse, it becomes particularly difficult for Facilitators to make predictions about the kinds of content they should be allocating exposure towards. As mentioned in previous components, this feedback loop between the presentation of content and interpretation of user satisfaction, can deeply affect the experiences of users engaging with Facilitators. In recent years, this understanding has bred a direction of work in which researchers explore the relationships formed between users and Facilitators as they engage in discovery. In their work Freeman et al. (2022) run a user study in which they look at the language users choose in discussing their discovery patterns. They argue that

[693] Mok, Lillio, Samuel F. Way, Lucas Maystre, and Ashton Anderson. "The Dynamics of Exploration on Spotify." *Proceedings of the International AAAI Conference on Web and Social Media* 16, no. 1 (May 2022): 663–74. https://doi.org/10.1609/icwsm.v16i1.19324

[694] Sguerra, Bruno, Viet-Anh Tran, and Romain Hennequin. "Discovery Dynamics: Leveraging Repeated Exposure for User and Music Characterization." In *Proceedings of the 16th ACM Conference on Recommender Systems*. RecSys '22. ACM, 2022. https://doi.org/10.1145/3523227.3551474.

"through daily interactions with algorithmic features and curation, listeners build complex socio-technical relationships with algorithmic systems, involving human-like factors such as trust, betrayal, and intimacy". Indeed, the question of trust and the potential for building trust during the discovery process is something that has also recently begun to garner attention in academic fields. In another work Freeman et al. (2023) led user studies in which they queried a group of users about their experiences with the Facilitators on Spotify.[695] They found that many of the users reported perceiving "personalisation features to be impersonal." The irony of this situation shows that many users desire greater forms of control over the Facilitators that they engage with during their discovery practices. In fact, many users expressed their relative like or dislike for a song using the term "vibe". As Freeman et al. (2023) explain "Notions of vibe also extended to social interactions […] it was expressed that it was essential to 'vibe with someone' to trust their music recommendations. This manifested in increasing trust through explanation, as well as the persona of a recommender system".[696]

Several works have discussed the need for more transparency and explainability in curatorial processes as a requirement for public good.[697] Ensuring transparency and explainability in curatorial processes is not only crucial for fostering user trust but also for promoting cultural diversity by making a wider array of cultural content visible and accessible. This approach aligns with the Mondiacult Declaration, which emphasises the need for an enabling environment that respects cultural rights and promotes cultural diversity as a cornerstone of a more equitable and inclusive world.[698] However, it also becomes clear that notions of trust are necessary for the potential improvements that they can offer for discovery of novel cultural content.

Ripples

This component encompasses the cultural consequences of engagement patterns. Discoverability, and patterns of engagement associated with it, has potential consequences not just at the individual level, but also on cultural products, the artist and producers that make them, surrounding communities, regions, and nations. This is evident when looking at literature on music

[695] Freeman, Sophie, Martin Gibbs, and Bjørn Nansen.. "Personalised But Impersonal: Listeners' Experiences of Algorithmic Curation on Music Streaming Services," 1–14, 2023. https://doi.org/10.1145/3544548.3581492

[696] Ibid.

[697] Mazzoli, Eleonora Maria. "Online Content Governance: Towards a Framework for Analysis for Prominence and Discoverability." *Journal of Digital Media & Policy*, 2020. https://api.semanticscholar.org/CorpusID:229073552

[698] IFACCA. (n.d.). Culture as a Public Good: Navigating its role in policy debates | IFACCA - International Federation of Arts Councils and Culture Agencies. Retrieved August 29, 2024, from https://ifacca.org/news/2024/07/18/culture-public-good-navigating-its-role-policy-deb/; UNESCO. (n.d.). UNESCO World Conference on Cultural Policies and Sustainable Development – MONDIACULT 2022 | UNESCO. Retrieved August 29, 2024, from https://www.unesco.org/en/articles/unesco-world-conference-cultural-policies-and-sustainable-development-mondiacult-2022

streaming, cultural heritage, and media consumption. Doing so leads to three key points.

Key Point 1: Discoverability can lead to increases in cultural and linguistic diversity with economic and societal benefits

A key reason for the importance given to discoverability as a policy objective (see Chapter 3) is that it is expected to lead to more cultural and linguistic diversity, which has economic and societal benefits. Increases in discoverability have been linked to increases in music consumption more generally,[699] but also in terms of diversity in a number of ways. These include the diversity of songs[700] and artists.[701] User diversity and inclusion can also be increased in terms of languages,[702] ideas and perspectives [703] and neurodiversity, the latter for example through targeted accessibility tools enabled by virtual reality (VR) technologies to virtually visit cultural heritage sites.[704]

The financial and economic benefits of increased discoverability are evident when looking at music playlist inclusion[705] and tourism.[706] A consequence should be higher (and less skewed) earnings for creators and artists - an assumption that remains to be assessed. Relatedly, reports suggest that discoverability of digitised cultural heritage could increase community interest,[707] preservation, and

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[699] Aguiar, Luis. "Let the Music Play? Free Streaming and Its Effects on Digital Music Consumption." Information Economics and Policy 41 (June 2017). https://doi.org/10.1016/j.infoecopol.2017.06.002

[700] Datta, Hannes, George Knox, and Bart Bronnenberg. Changing Their Tune: How Consumers' Adoption of Online Streaming Affects Music Consumption and Discovery. SSRN Electronic Journal, 2017. https://doi.org/10.2139/ssrn.2782911 ; Bourreau, Marc, François Moreau, and Patrik Wikström. "Does Digitization Lead to the Homogenization of Cultural Content?" Economic Inquiry 60, no. 1 (2022): 427–53. https://doi.org/10.1111/ecin.13015 ; Lee, Harin, Romain Hennequin, and Manuel Moussallam. "Understanding Individual and Collective Diversity of Cultural Consumption through Large-Scale Music Listening Events." In Workshop on Computational Humanities Research, 2023. https://api.semanticscholar.org/CorpusID:265429360.

[701] Aguiar, Luis. "Let the Music Play? Free Streaming and Its Effects on Digital Music Consumption." Information Economics and Policy 41 (June 2017). https://doi.org/10.1016/j.infoecopol.2017.06.002 ; Datta, Hannes, George Knox, and Bart Bronnenberg. Changing Their Tune: How Consumers' Adoption of Online Streaming Affects Music Consumption and Discovery. SSRN Electronic Journal, 2017. https://doi.org/10.2139/ssrn.2782911

[702] Rioux, M. (2020). Découvrabilité des contenus culturels locaux sur les grandes plateformes numériques transnationales. In La culture à l'ère du numérique : Plateformes, normes et politiques (p. 99-116). Presses Universitaires de Liège.

[703] Helberger, Natali. "Challenging Diversity - Social Media Platforms and a New Conception of Media Diversity," 2018. https://api.semanticscholar.org/CorpusID:158890139 ; Mazzoli, Eleonora Maria, and Damian Tambini. "Prioritisation Uncovered - The Discoverability of Public Interest Content Online," 2020.

[704] Dechaene, Saskia. "Virtual Reality as an Accessibility Tool to Cultural Heritage Sites for People with Autism Spectrum Disorder," 2023. http://hdl.handle.net/2105/71669

[705] Aguiar, Luis, and Joel Waldfogel. "Netflix: Global Hegemon or Facilitator of Frictionless Digital Trade?" *Journal of Cultural Economics* 42 (August 2018). https://doi.org/10.1007/s10824-017-9315-z

[706] Economou, Maria. "Heritage in the Digital Age," 215–28, 2015. https://doi.org/10.1002/9781118486634.ch15 ; Interreg Europe (2018). Policy brief from the Policy Learning Platform on environment and resource efficiency, Digital solution in the field of cultural heritage.

[707] Economou, Maria. "Heritage in the Digital Age," 215–28, 2015. https://doi.org/10.1002/9781118486634.ch15 ; Helly, D. (2018). Instituto Europeo del Mediterraneo, Cultural Heritage protection in the Mediterranean Region Beyond Resilience ; European Expert Network on Culture

the sustainability of cultural practices.[708] Interestingly, the increased availability and discoverability of music on streaming platforms has led to a growing divergence in national music charts, with each country featuring a more distinct set of songs, likely driven by users' increasingly idiosyncratic preferences shaped by regional influences.[709] Likewise, the share of domestic songs in national charts has also increased,[710] suggesting greater heterogeneity and not an increasing sameness across national borders.

Key Point 2: Discoverability can shape the self-image of both users and cultural producers.

While less well-researched, work by Prey suggests that music discoverability has the potential to shape the self-image of consumers.[711] But the metrics that are derived from user engagements patterns can also shape the self-image of artists as well.[712] Whether we are music makers or listeners then, what we discover has the power to shape how we see ourselves as individuals; our consumption shapes our identity. For Prey (2018), the invisibility with which platforms define individuals then has consequences. This suggests that there are ripples which are not easily quantified in plus or minus terms, but also qualitatively for the parties involved.[713]

Key point 3: Data derived from engagement practices can raise concerns about data usage and ownership

Finally, these engagement patterns and the information they produce increasingly raise concerns about who has the right to user data and matters of personal privacy.[714] This point becomes especially salient when trying to better understand the complex relationship between users and the aforementioned components of discovery. Changes brought by digitisation have altered the relationship between consumers, content, and producers of media and content. How users discover content becomes useful data for providers to mine, calling into question matters of user privacy. Moreover, the use of this data by

and Audiovisual (EENCA) (2019). Platforms on the future of Cultural Heritage: A problem-solving approach – Report on the Prague Platform on 'Cultural Heritage in the Digital Age'.

[708] European Commission (2020). Open Public consultation on Digital for cultural heritage; European Expert Network on Culture and Audiovisual (EENCA) (2019). Platforms on the future of Cultural Heritage: A problem-solving approach – Report on the Prague Platform on 'Cultural Heritage in the Digital Age'.

[709] Bello, Pablo, and David Garcia. "Cultural Divergence in Popular Music: The Increasing Diversity of Music Consumption on Spotify across Countries." *Humanities and Social Sciences Communications* 8, no. 1 (July 27, 2021): 182. https://doi.org/10.1057/s41599-021-00855-1

[710] Page, Will, and Chris Dalla Riva. "'Glocalisation' of Music Streaming within and across Europe," 2023.

[711] Prey, Robert. "Nothing Personal: Algorithmic Individuation on Music Streaming Platforms." *Media, Culture & Society* 40, no. 7 (2018): 1086–1100. https://doi.org/10.1177/0163443717745147

[712] Prey, Robert. "Performing Numbers: Musicians and Their Metrics." In *The Performance Complex*, edited by David Stark, 241–58. Oxford University Press, 2020.

[713] Prey, Robert. "Nothing Personal: Algorithmic Individuation on Music Streaming Platforms." *Media, Culture & Society* 40, no. 7 (2018): 1086–1100. https://doi.org/10.1177/0163443717745147.

[714] JP, Simon, and Bogdanowicz M. "The Digital Shift in the Media and Content Industries: Policy Brief." Policy assessment. Luxembourg (Luxembourg): Publications Office of the European Union, 2012. https://doi.org/10.2791/40528.

commercial entities such as rightholders and business partners further complicates the privacy debate, as these stakeholders may have competing interests in accessing and utilising such information. As a result, there is an ongoing tension between safeguarding user privacy and allowing rightsholders to capitalise on the data for business purposes.

Annex 3: Overview of the methodologies aimed at assessment and measurement of cultural diversity

This Annex provides an overview of methodologies and indicators as derived and used in existing research (whether academic or not), with a focus on data sources, indicators and their reusability in the current report. The literature review covers close to 30 papers, which include:

- methodologies aiming at assessing and measuring diversity and/or discoverability and/or exposure to cultural diversity; and/or
- an analysis of the factors that influence discoverability/exposure, including the overview of existing practices and trends as regards curation and algorithm recommendations.

The overview focuses on recent papers, with some exceptions when relevant (e.g. the earliest included work is Brynjolfsson et al. (2003) because it is a foundational paper and there is a lack of publications applied to book publishing. Papers dealing with audiovisual content were included when they were relevant for the analysis. This assumes that the analysis of the audiovisual sector can also benefit understanding of issues around discoverability of online European content in the case of music and books. In terms of sector coverage, the distribution of the 28 papers is the following (some papers deal with more than one sector): 20 on music, 7 on audiovisual, 5 on books.

The remainder of the annex provides an overview of methodologies. This includes an analysis of the indicators used to assess diversity; of those used for discoverability and discovery; of what these papers tell us regarding the definition of European works; and the methods used to collect and analyse data.

This section includes an overview of the methodologies aimed at assessment and measurement of cultural diversity, with a focus on exposure diversity due to the study's focus on the diversity of European content online. It is followed by an overview of the methodologies aimed at measuring discoverability and assessing discovery. Discussion then turns to how digital works can be identified as European - in line with the key challenge in this study. An emphasis is given to the question of data, which data are available, and the methods used to analyse these data. Finally, the implementations are discussed in this context, why certain measures or sources are applied and why deciding for some against others.

Metrics of exposure diversity

The focus of this study is on **exposure diversity**, which is defined as the extent to which audiences are exposed to, discover, and engage with diverse content.[715] Indeed, exposure diversity and discoverability are intrinsically intertwined. The Stirling model (Stirling, 2007) is of a particular interest and has been used increasingly by cultural economists and other scholars for the definition and assessment of diversity (Ranaivoson, 2020). Stirling (2007) posits that any form of diversity consists of three components: Variety, Balance and Disparity. *"More precisely, the diversity of a system can only be assessed when its elements have been grouped into categories. When this categorisation has been achieved, variety corresponds to the number of categories, balance is the way the elements are spread among categories (for example, market shares) and disparity corresponds to the level of difference between the categories (for example, between every pair of categories or between the two most distinct categories)."* (Ranaivoson, 2020). In the subset, studies by Bello & Garcia (2021) and de Lucio & Palomeque Carillo (2024) take the Stirling model as a key building block of their analysis, although their focus is on consumption diversity rather than exposure.

In spite of the broad range of perspectives (i.e. disciplines) represented by the papers that assess exposure diversity, they mostly use metrics based on four basic measures: Count, Percentages, Dual Indexes, and Distances. According to Ranaivoson & Domazetovijk (2023, p.4):

*"**Count** represents the number of elements that are part of a set. The elements can be various units, which can be part of a subset or grouped in a category. Count can be used to quantify to what extent units of various subsets or categories are represented in a set. **Percentages** correspond to all indicators consisting in measuring the relative share of a category within a system, e.g., the shares of films in Netflix's catalogue per country of origin. **Dual Indexes** (Stirling, 2007) notably include both the entropy index and the Herfindahl-Hirschman index. As Stirling's (2007) denomination alludes, both indices combine in their quantification what Count and Percentages assess respectively. **Distances** correspond to the level of differences, or dissimilarity, between every pair of items consumed, for example. Distances are commonly used by computer scientists to assess diversity (Kunaver & Požrl, 2017)."*

These metrics can be mapped over the diversity components, and it appears that Count assesses Variety, Percentages Balance, Dual Indexes both Variety and Balance, and Distances assesses Disparity (Ranaivoson et al., 2024). The most important point for the analysis of exposure diversity is that for this reason two

[715] This definition is based on Napoli (2011)'s canonical definition. Napoli refers only to consumption but to adapt it to the impact of digital technology and in particular of recommender systems and curation strategies in the frame of this study, we extend it slightly. This to reflect the various aspects that "consumption" can take, from passive (e.g., getting a recommendation that one sees but will not click on) to active (e.g., searching for more information about a creator to find other works) modes of consumption Philip M Napoli, « Exposure diversity reconsidered », Journal of information policy 1 (2011): 246-59.

metrics that consider different, complementary aspects of diversity, are not directly comparable (Ranaivoson & Domazetovijk, 2023).

In the papers selected, the following focus on Variety and Balance, using metrics belonging to Count, Percentages or Dual Indexes: Datta et al. (2018); Ghaffari et al. (2024). Others focus on Disparity: Anderson et al. (2020)716; Anderson et al. (2021); Bourreau et al. (2022); Kowald et al. (2021); and Lamprecht et al. (2017). While many of these studies focus on diversity in consumption patterns (individual or inferred from charts), they relate the changes in these patterns to the popularisation or adoption of streaming services and other factors. Thus, the measures applied to consumption data are often used to provide insights on discovery and exposure, as facilitated by digital services.

These metrics are applied at different levels. A common one is the **title**. Considering the diversity of titles, the papers consider the question of availability, which can be still crucial in some cultural sectors. An analysis of the diversity of titles can also consider the concentration of consumption on a limited number of titles. A distinction can be made, as discussed previously, between extrinsic and intrinsic properties. Common variables among extrinsic properties are the **genre**, the **language** or **nationality** (see after), and the nature of the companies that produce or distribute the goods. Thus, some papers distinguish between **independent** and **major companies**. Waldfogel & Reimers (2015) also add the category of self-published, in the case of books (where its much more prominent and successful than in music). Intrinsic properties are less common but can include **acoustic features**. Passmore et al (2024) define *"musical diversity through five latent dimensions of musical style (Articulation, Tension, Ornamentation, Rhythm, Dynamics)"*, while Bourreau et al. (2022) focus on Spotify algorithmically defined features of song tracks.

In this report, the data analyses focus on the nationality of the artists/authors, the language of the lyrics, as well as on respective author and title characteristics (i.e., for example, among EU and non-EU songs, or books). The primary underlying question considers the exposure of works originating in EU. The analysis thus considers different sources of exposure (e.g. lists, playlists, editorial and algorithmic recommendations), as well as changes and variation in consumption patterns (e.g. across time or platforms; in line with approaches from prior research on diversity in digital contexts). Within these contexts, the primary approach in this report is to look at the Balance (i.e. defined by the shares of specific subcategories) and – in some contexts where enough data is available – Disparity (measured with the Herfindahl-Hirschman Index). This extends to broad-level analysis (e.g. shares of EU and non-EU works within a list) and more specific-level analyses (e.g. shares of author genders among EU and among non-

[716] While Anderson et al. (2020) rightfully argue that considering only Variety and Balance is not enough and that it's also important to analyse Disparity (which they call similarity); their review of the literature is one-sided as they claim that disparity is not analysed at all. Thus, they neglect research in the computer science field. Notably, Distances are commonly used by computer scientists to assess diversity (Kunaver & Požrl, 2017).

EU works). As the number of differing categories is not large in most of these analyses (e.g. titles are divided into coming from local, EU and non-EU authors; similarly for languages), and typically all types co-exist in a given context – the report does not consider the variety in terms of counts of differing categories. The Balance remains the focus.

Metrics of discoverability and discovery

Discoverability is a much less explored concept than diversity, and even more so than exposure diversity (see previous section). That's why effort was made, beyond the definition of discoverability, of providing a framework allowing us to better understand and analyse the discovery, in particular of diverse European content in an online context. As written previously, discoverability can be defined as the likelihood that an item will be interacted with.

A few papers refer to the notions of newness (Datta et al. 2018) or novelty (Briand et al., 2024). Ghaffari et al (2024) propose two indexes to measure novelty in music consumption: the proportion of new artists a user listens to relative to the total number of artists they listen to in a week, and the proportion of listening time dedicated to new artists relative to the total listening time in a week. Lamprecht et al (2017) assess serendipity, or pleasant surprise, as the fraction of recommendations that are both novel (surprising) and relevant (interesting). The newness or potential for discovery is specific to each individual, to their lack of knowledge of the title, rather than the release date (Anderson et al., 2021; Datta et al., 2018). A crucial challenge discussed by Briand et al (2024) is the **cold start problem**, which refers to the challenge of recommending new items with limited prior user interaction data. It is common in the computer science literature on recommender systems but rarely linked to discoverability as the authors do.

A different approach has been taken by the Quebec-based research project LATICCE[717]. LATICCE developed an innovative prototype of a Discoverability Index, aimed at providing a measure of the degree at which an individual's discoverability goals are met by the various exposure channels encountered in digital environments such as streaming platforms. The index consists of three factors: presence, visibility and recommendation, of which the latter is further broken down into concordance, pertinence and novelty. In the study proof-of-concept, the index is applied to three simulated personas who use different music streaming services and focus on Quebec-originating music in French. The derived measures are user (and goal)-specific, as well as time-varying. They also rely on data available only to specific users (e.g. their direct experiences with the used platforms).

Many of the prior works on discovery thus focuses on the process of uncovering new titles (in the sense of not previously consumed), that fit a user's taste or their general goals (i.e. of consuming titles of specific types). The focus of the data

[717] See e.g.: https://cnmlab.fr/en/short-wave/the-discoverability-index-streaming-and-content-diversity/#discoverability-index ; or https://wiki.uqam.ca/pages/viewpage.action?pageId=89507593

analyses in this report is instead on the probability of discovering European music or books in online contexts. As such, the notions of novelty or newness are not entirely relevant to this report (although the music analysis does consider artist career stages). The approaches proposed by these prior works could be reoriented towards the goals of this report but would require individual-level data and consumption histories. Such data, however, are not readily available and could not have been secured (see Annex 3 and 4 for details). Similarly, the LATICCE index requires access to rich and user-specific data and information and is thus not operationalisable (indeed, its authors provide only hypothetical scores for simulated virtual personas).

This study focuses on identifying different modes of discovery and the analysis of the presence of diverse European works within these contexts. Thus, the focus is on, e.g., popular lists, playlists, algorithmic and editorial recommendations, and on the presence and exposure within them. While the analysis in this report does not cover historic user data, it does also consider experiments with recommendations, which provide a method of looking at user-specific discovery pathways (e.g. service-provided recommendations based on prior browsing, choices or inputs). The key indicator of discoverability in the study is the share of EU-originating works within different discoverability channels.

About European, nationality, language

Considering the importance of European works in this study, focus is provided in this section on how a few papers in the sample address the issue of defining nationality, sometimes using languages in order to assess the diversity of content. A few papers analyse the **nationality** of the artists. For De Lucio & Palomeque (2024), a song *"is considered local if the main artist performing it is a native of the country where it is being listened to."* Matrosova et al. (2024) follow a similar approach and additionally look at the country in which the artist is currently active or producing music. Some make use of third-party data to define the artists' nationality, such as Musicbrainz and Gracenote, which allows them to not have to further discuss and define nationality. Some papers use **language** (of the song). For De Lucio and Palomeque (2024), a song *"is considered as local if the language of its lyrics is one of the official languages of the country where it is being listened to."* However, while it works well for some languages (e.g. Italian), it seems more problematic for others like Portuguese or French. Finally, De Lucio & Palomeque (2024) consider a song *"as local if at least one of its **genres** is native to the country in which it is being listened to"* with the authors developing an own classification system based on the genre origin.

This study – throughout the report – follows the definition of European works as works originating in one of the Member States, i.e., that are made by one or more creators from one or more Member States. The data analysis strives to operationalise this approach. This is both in line with the broader goal of the study and considers the caveats associated with some of the other approaches (e.g. shared languages or multiple official languages, or artists from specific countries performing music in non-country-specific genres). In general terms, this approach

can also be applied to both books and music, although some additional considerations have to be made.

For music one can could consider performers, songwriters or even lyricists. = This study operationalises country of origin based on the nationality of performing artists – i.e. if at least one performing artist comes from an EU country, the track is considered as European. This decision is based on the fact that songwriter credits could introduce non-intuitive challenges. In some genres, it is common to reuse parts of other songs and integrate them within the song (i.e. through sampling or interpolation). The authors of these source songs are increasingly credited as songwriters on song credits, even if they themselves are no longer active. Some artists – e.g. Beyonce – release hit songs with songwriting credits including between 10 and 20 different artists. Additional problem comes from the fact that the propensity to credit such authors has been changing over the past two decades, after lawsuits in the US that forced adapting different practices. Thus, including songwriters in the operationalisation of this measure would likely introduce noise to the results. Instead, this study focuses on the performing artists.

For books one could consider translators as co-authors (as the translation itself is, in itself, a creation). However, as the primary focus is on the book origin, this study considers only the main writer of a particular book and does not consider illustrators or translators' nationalities. While these issues are also of interest, they are beyond the scope of this report.

The details of the operationalisation of these measures are provided in relevant technical sections on the applied methodologies. They describe the used sources of metadata and different approaches to provide as broad a coverage as possible.

Data sources and data collection

A crucial point in this overview is to understand how data can be accessed and used for the analyses of the topics related to this report. Various sorts of data have been used in prior literature. There are data on content (title, date of release or publication, genre, acoustic features for music, major or independent labels). Once aggregated, cleaned, compiled, etc. these data provide information on supply, hence on what is available. There are many types of data on supplied diversity. But in the frame of this study, the most relevant are related to the diversity of what is recommended or suggested, like data on the most showcased playlists.

The papers in the sample use a wide array of data **on consumption**, such as plays, listens, streams or sales. They are sometimes focused on the top items, which can be the most listened to tracks (over a given period, for example a week), the most popular playlists or the most popular singers. Such data are used preferably for a question of data availability (Ranaivoson, 2007), or because the analysis is more feasible (with fewer items included).

There are also user data, on consumption, on tastes, on behaviour. For example, a few papers use ratings made by users. Others analyse online or in-app behaviour like purchases. More traditionally, there can be data on users' demography. Thus, Baracskay et al (2022) analyse ratings of users on the application and its capacity to improve diversity, to favour discovery.

To analyse recommendations, one approach consists in **mimicking or reproducing consumer behaviour**. For example, by having a **seed**, an initial behaviour and see what gets recommended (ARCOM, 2022 or Dündar & Ranaivoson, 2023). Or by creating different profiles, for example based on different playlists as input signals (Baracskay et al, 2022).

The **period** covered in data collection is broad, with most from early 2010's until early 2020's. Some data go as far as the 90's, mainly as a point of comparison with more recent data. Due to the time needed to gather data, analyse them and get them published (notably time for peer-review process), there is not much after 2020. But with experience of the project team (e.g. attendance to RecSys or IASPM (International Association for the Study of Popular Music) conferences), it is known that there is a lot going on in terms of research on music Recommender Systems and discoverability. It is less clear when it comes to research on discoverability of books.

In terms of **regional coverage**, effort was made to identify studies covering one or more European countries. A few papers are focused on the US, particularly those dealing on the book industry. Otherwise, many are covering several countries or are global (thus including Europe) in their scope (due to dealing with globally operating platforms).

Sources for data from the sample of papers include for the music sector:

- Data providers: Spotontrack.com, Luminate, Gracenote's nationality ID metadata to define a local artist and a local song + languages of the lyrics, Musicbrainz, Global Jukebox,
- Online platforms: Spotify, Deezer, Last.fm, iTunes, Pandora, YouTube Music, Apple Music,
- Offline players (e.g. Winamp),
- IFPI and other national associations for Top music.

For the book sector:

- Amazon.com
- BookCrossing
- Goodreads (and its Book Graph)

In this report, all sources used in prior studies and analyses were reviewed and compared with the sources and data providers identified through this project. The

final selection prioritised those offering the broadest possible coverage and enabling the most comprehensive analyses. Further details on the approach adopted are presented in the methodology description (Section 1.3), with additional discussions provided in Annexes 4 and 5. These sections outline the sources that were considered and selected, the methods used to collect the data and construct the indices, the procedures applied to obtain supplementary information, and the approaches used to retrieve historical data.

Annex 4: Quantitative analysis: music sector – methodological appendix

Data and measures

The data on the music sector – consumption trends, curatorial practices, and alternative modes of discovery – has been obtained from Chartmetric. Chartmetric collects data from the publicly available information posted across different streaming services. In this regard, it aggregates officially published information from streaming platforms, i.e. the official top charts, metadata presented in the services, playlists, etc., together with respective identifiers. Aside from few indicators derived by Chartmetric itself (e.g. career stage), the majority of the data that the quantitative analysis relies on thus comes from the respective music streaming services. There is no evidence of Chartmetric interfering with these data or with the music streaming services manipulating them. Regardless, there is also no alternative for most of the conducted analyses. Chartmetric was chosen due to the functionality of its API and the coverage of information across various streaming platforms.[718]

For the purposes of this methodological annex, the names of the four analysed platforms have been anonymised and are referred to as MSS1 to MSS4. Two of these platforms (MSS1 and MSS2) were approached with requests for direct access to relevant data; however, this was ultimately not feasible. MSS1 declined the request, and MSS2 was unable to prepare the required dataset within the project timeframe due to internal legal procedures. Nevertheless, the information obtained through Chartmetric provides sufficient coverage for the analyses conducted in this study.

A competitor service, Soundcharts, was also consulted at a later stage of the project. Following an exploratory assessment, it was determined that supplementing the analyses with data from Soundcharts would yield limited additional insights, as Chartmetric and Soundcharts largely overlap in the types of data relevant to this project. Soundcharts is therefore used only for a secondary review of editorial practices and playlists, with further details provided in the corresponding sections.

Meetings were also held with the FairMuse project to discuss the data collected within that initiative. Although the dataset offers several compelling research opportunities, it was ultimately excluded from the present analysis. The music consumption data in FairMuse is contributed voluntarily, making it difficult to assess its representativeness for specific listener populations—one of the key

[718] We additionally considered other sources such as Spotontrack. We found Chartmetric's coverage, data access points and initiatives in terms of metadata collection (see Make Music Equal initiative - https://makemusicequal.chartmetric.com/; accessed: 23.01.2025) to be superior for the purposes of this study.

criteria established for this study. Additionally, discussions with a research team from WIPO regarding the operationalisation of diversity measures and indicators informed a reassessment of the Make Music Equal database, particularly with respect to the pronoun data it contains.

Finally, another potential source for music consumption comes from Last.fm. However, while Last.fm covers more than just the most popular music, it also suffers from relying on a non-representative sample of music listeners and changing level of popularity across years (with difficult-to-measure retention and consistency of representation). Moreover, as Last.fm relies on an app or plugin to log in music listening, the coverage of the consumption logs likely changed over time as listeners increasingly shifted to other ways of listening to music (e.g. from computers and CDs to streaming from mobile devices). All these factors could additionally play differing roles depending on the user's nationality – a variable crucial for this analyses but also with uneven coverage and missing information.

Music consumption data

Consumption data in the form of **top charts** for four music streaming services was collected. Covering these four platforms provides a comprehensive view on the mainstream trends in music streaming market, ensuring that the analysis is not platform-specific, and allowing for drawing more general conclusions. Furthermore, both EU- and US-based platforms are covered.

Analysing the top charts alone does not capture the full scope of music consumption, as the music sector experiences a continuously growing influx of new songs. However, a significant portion of newly created songs never reach an audience. For instance, in 2023, more than 100,000 new songs were registered daily through ISRC. However, two-thirds of these songs received no more than 10 streams.[719] In such an oversaturated market, focusing on the patterns of consumption related to the most popular music offers a practical approach. It should be recognised that the analysis is based on aggregated consumption data, which does not fully capture the variation in individual preferences and musical habits. For example, listeners may be ‘casual’ or ‘expert’, revealing distinct levels of demand for specific content.[720] Casual listeners may engage with popular mainstream tracks, while expert users often seek out niche or genre-specific music. As individual-level music consumption data was not accessible, differing usage patterns of music services were instead captured through the accompanying survey. The available data also does not allow for distinguishing between modes of listening; for example, it is not possible to determine whether a track was deliberately selected by the listener or played as part of passive, “background” listening. Nevertheless, the analysed trends provide insight into

[719] Luminate (2023). *Luminate 2023 year-end music report*. https://luminatedata.com/reports/yearend-music-industry-report/

[720] Morris, J. W., & Powers, D. (2015). Control, curation and musical experience in streaming music services. *Creative Industries Journal, 8*(2), 106–122. https://doi.org/10.1080/17510694.2015.1090222

broad patterns over time, making it possible to identify potential Ripples (see Conceptual Framework) associated with developments in the music industry, such as the introduction of new services, increased exposure through social media, or the impacts of the COVID-19 pandemic.

The collected weekly top charts list the most popular songs on the platforms: 200 in the case of one MSS, and 100 in the case of the others. The difference stems from the way the platforms prepare their top charts.

The country coverage across the platforms is not uniform – while the whole European Union (27 countries, excluding the UK) is covered for two analysed MSS, the other two lack data for a few countries. For one MSS, the four missing countries account for 2.8% of the EU population. For the other MSS, the three missing countries represent 1.5% of EU population.[721] Since the share of missing data—measured against the EU population—is relatively small, the absence of certain countries is not considered a major limitation of the dataset. Additionally, data for several non-EU countries is included where services make such information available.

All accessible data up to the end of 2023 was collected. However, the starting points differ across sources: the longest available time series begins in 2017, while the shortest begins in 2020.

Curatorial practices data

Data on curatorial practices comes from Chartmetric and covers **two prominent editorial playlists with country-specific editions from** two different MSSs. One playlist is available for 23 countries, including 16 EU Member States, while the other covers five EU countries and the UK. The available weekly editorial playlist data span the period from 2018 to the end of 2023.

Alternative modes of discovery data

Data for the alternative modes of music discovery analysed in this report were obtained from Chartmetric in the form of weekly top charts. The short-form video content platform's (AMD2) top charts capture the songs most frequently used as background sounds in user-generated videos, while the music recognition tool's (AMD1) top charts capture the songs most frequently identified through the app's music recognition function. The coverage is as follows: the short-form video content platform charts are available for 22 EU countries and the music recognition tool charts for 19. For both services, historical data are available from 2020 onwards.

Automated recommendations data

For this analysis, an automated recommendation system from a major MSS was examined.

[721] Shares calculated using Eurostat Population data for 2023, https://doi.org/10.2908/DEMO_PJAN

Recommendations were obtained using the platform's API endpoint, which generates suggestion lists based on seed sets of up to five tracks. These recommendations were not personalised for any specific user and therefore do not reflect the full experience of tailored recommendations. Nonetheless, this method provided the best available proxy for consistently and systematically analysing the underlying recommendation system.

In the analysis, songs popular in EU countries were used as inputs into the recommendation engine. These tracks were selected from the top charts dataset compiled for the consumption analysis. Metadata for tracks and artists was identified using the previously described sources, including Chartmetric and Genius. The resulting dataset enabled the examination of recommendations for 24 EU Member States.

It is important to emphasise that the aim of this study is not, in any way, to reverse-engineer the recommendation algorithm or analyse the specific features it considers. On the contrary, it is acknowledged that these algorithms do not explicitly consider attributes related to the origins of titles, such as artists' nationality or song registration codes. Instead, focus is on examining how this "blindness" to such attributes is reflected in the output recommendations.

Identifying European songs

Identifying European songs poses challenges. Music streaming platforms do not provide country-level identification of songs or artists. According to service representatives consulted at meetings, the data on artist origin is often arbitrary, conflicting and unreliable. As such the services do not collect it and do not use it for their recommendation algorithms.[722] Hence, music originating from the European Union is identified considering **three measures** from other sources, each with its own limitations. First, data on the **nationality** of the artists whose songs appeared on top charts or playlists is examined. Second, the **ISRC codes** of the songs are utilised. Third, the **lyrics** of the songs are analysed to determine the language to assess whether it is officially used in EU countries or elsewhere in the world. Each measure is calculated separately so they can be compared as alternative proxies for artist origin. For each year in the dataset, the UK is considered as a country outside the European Union (including in the pre-Brexit years).

The information regarding the nationality of artists is sourced from Chartmetric. As Chartmetric states, an artist's country is "the country that an artist feels like they represent the most. This can be where an artist was born, where they are from, where they are currently based, etc."[723] Consequently, this measure relies on self-identification and may not reflect an artist's actual country of origin as the

[722] Notably, this means that our analysis of recommendations in this Study might uncover potential biases (if any) constituting a byproduct of other algorithmic components, rather than anything ingrained directly within the algorithms

[723] Chartmetric, Music Data Glossary, https://learning.chartmetric.com/glossary/ (accessed 22.01.2025)

identification may extend beyond national boundaries. In addition, Chartmetric does not collect this information directly from artists. Instead, it compiles it from public sources. This means that well-established or label-supported artists are more likely to be accurately represented, while independent or emerging artists are more likely to have missing or inconsistent nationality data. Nevertheless, the availability of nationality data for songs in top charts of each music streaming platform is high and exceeds 90% (see Table 1). For the purpose of this study, a song is classified as European if at least one of its performing artists claims to represent an EU member country. In collaborative works, the same criterion applies – at least one performing artist must identify with an EU country. Multiple EU collaborators are not weighted differently.

The International Standard Recording Code (ISRC) is an identifier assigned to individual sound recordings to ensure that recordings can be uniquely distinguished. Each ISRC is administered under the authority of the International Federation of the Phonographic Industry (IFPI) and allocated through national ISRC agencies. For each song with an assigned ISRC code, the first two letters of the code indicate the country where the code was issued.[724] While this method of identifying European music is not perfect – since a song can be registered in a country irrespective of the artist's ties to it – it provides an approximation of the song's 'country of origin'. The availability of a song's ISRC codes is high (see Table 1.1). However, experts participating in the focus groups (see Annex 9) have highlighted a significant caveat in using this measure. Artists and labels may choose to collaborate with artists from markets they aim to enter. Therefore, songs may be registered in the countries of the collaborators to facilitate market entry, and increase promotional opportunities. Furthermore, international distributors may assign codes from their base countries, irrespective of artist location.

Other measures of diversity

To broaden the analysis of diversity in music consumption and promotion on streaming platforms, we investigate artists' gender, career stages, and song genres.

Lyrics data was obtained from Genius, which provides information on the language of each song. This enabled identification of whether a song's lyrics are in one of the official languages of EU Member States or in a language from outside the EU. An initial plan to conduct automated language detection based on titles and lyrics was reconsidered once it became clear that the language metadata supplied by Genius offered a more efficient and comprehensive alternative. This approach removed the need to retrieve full lyric texts and apply linguistic detection algorithms—processes that would have slowed data collection and potentially reduced coverage. As a result, although the Inception Report

[724] ISRC Agency Code Allocations - December 2024, https://isrc.ifpi.org/downloads/Valid_Characters.pdf (accessed 19.12.2024)

anticipated coverage of “at least 10 languages,” the use of Genius significantly expanded this range, capturing languages used across all EU Member States.

Identifying European songs solely on the basis of lyrics presents several challenges, particularly for languages that are official in multiple countries both within and beyond the EU. For example, Spanish is an official language in Spain but is also predominant across Latin America, making it difficult to infer origin from lyrics alone. Likewise, English—an official language in Ireland—is widely used in many countries globally, and artists from various EU Member States often perform in English. French also appears as a local language in three EU countries. These overlaps limit the reliability of language-based classification, requiring careful interpretation in countries that share official languages.

To assess national diversity in platform top charts and playlists across countries, three measures were therefore used to classify the origin of each song: artist nationality, ISRC code, and lyrics language. A song was categorised as *national* if its artist’s nationality, ISRC country code, or lyrics corresponded to the country associated with the chart. Songs that did not meet the criteria for national origin but originated from another EU Member State were labelled *EU non-national*. Songs not fitting either category were classified as *non-EU*. Since none of the three indicators is fully reliable on its own, each is treated as a proxy. Comparing results across all three functions as a robustness check, helping to mitigate the biases or limitations inherent in any single measure.

Pronouns

The Pronoun Dataset was obtained from the Make Music Equal project, an initiative by Chartmetric that collects artists’ self-declared pronouns in order to shed light on gender equity in the music industry. As Chartmetric states, ”all pronouns are pulled from public bios on social media and streaming platforms.”725 This dataset was chosen as it provides a direct link (through Chartmetric ID) between artists in the gender, music consumption, and curatorial practices datasets. As the dataset’s creators refrain from translating declared pronouns into gender, the same approach is applied in this exercise. A particular challenge lies in categorising bands, as not all members provide pronouns, and bands are most often labelled with *they/them*. This introduces a lack of clarity as to whether it is simply an indication of a group or refers to an individual. Hence, in the analyses, only the pronouns of soloists are categorised, with bands given a ‘group’ indication to reduce the risk of misinterpretation. Missing data is denoted as ‘unknown’. Table 1 presents the coverage of pronouns across songs in top charts and curatorial playlists.

Notably, other studies have examined the gender dimension in the music industry, for example in the analysis by Aguiar et al. (2021). Their approach, however, is not replicable in the context of this study. The authors combined

[725] See Methodology at https://makemusicequal.chartmetric.com/ (20.07.2025)

information from a data aggregation platform with assessments based on first names and manual verification, and still faced difficulties in collaborative works when at least one artist's gender was unknown. Replicating this method would not only require substantial additional work but would also be more challenging in the present study. While Aguiar et al. (2021) focused only on US playlists, this analysis covers multiple country versions of analysed editorial playlists, where gender data coverage is likely to be poorer, especially outside the US and Western markets. Moreover, any resulting dataset would need sufficient coverage to allow combination with nationality information. For these reasons, reliance was placed on the Make Music Equal database.

Career stage

Artists' career stage covers the diversity with respect to artists popularity. Chartmetric provides information on the career stage for all covered platforms with consistently high data coverage. The measure is based on Chartmetric's own evaluation (Chartmetric Artist Score) of an artist's success across various platforms. The Artist Score aggregates more than 50 metrics from 16 streaming and social media services into a single index and then applies thresholds to categorise artists into six levels of career stage: undiscovered, developing, mid-level, mainstream, superstar, and legendary.[726] The *undiscovered* artists are new to the music industry, and have minimal presence on any streaming or social media platforms. The *developing* artists begin to show the signs of audience growth and demonstrate some potential in their careers. The next stage of career - *mid-level* - depicts artists who have already achieved consistent contribution and reveal growing influence. Those classified as *Mainstream* enjoy wide popularity and sustained success across platforms, while *Superstar* artists dominate the global ranks among the top 1500 artists worldwide. Finally, the *Legendary* artists endure influence over decades, with a status as cultural icons. For more details, see the Methodology section of the report "Chartmetric Year in Music 2024",[727] that focuses on the career stage.

When a song is created by more than one artist, Chartmetric strives to provide the career stages for all collaborators. For songs that feature multiple contributing artists, the career stage of the highest-ranked artist is used to ensure that the analysis focuses on the most influential contributors to the track's popularity. For the coverage of career stage information for each MSS, go to Table 6. It should be noted that these categories are proprietary constructs developed by Chartmetric and not universally agreed definitions of artistic career stages. As such, the classification reflects Chartmetric's specific aggregation and threshold choices. Heavy reliance on Chartmetric therefore means that the analysis reflects not only trends in music consumption but also the way in which this platform categorises and presents industry data. Nevertheless, Chartmetric currently

[726] See: https://hmc.chartmetric.com/chartmetric-artist-career-stage-growth/

[727] The report is available here: https://reports.chartmetric.com/2024/chartmetric-year-in-music-2024#methodology (accessed 19.01.2025)

provides the most comprehensive and easy to integrate cross-platform dataset for this type of analysis, making it the most suitable source for the purposes of this study.

Genres

The last diversity measure concerns the genres of the most popular songs and those featured on editorial playlists. Genre information is available for two MSS, with detailed classifications provided by the platforms themselves or other existing sources (such as e.g. MusicBrainz) and collected by Chartmetric[728]. While coverage is high for the top charts, one of the editorial playlists has genre information for about two-thirds of the songs (see Table 6). For the purposes of this report, the detailed genres are aggregated into broader categories.

The detailed subgenres are matched to broader categories using an automated approach. Specifically, a method based on embeddings is applied, which enables the identification of semantic similarities between phrases, such as music genres. Using the state-of-the-art voyage-3-large model[729]https://applewebdata//3BCD9846-41E1-42E4-BF8D-CCEB182A30FD_-_ftn7, both subgenres and genres are embedded into a shared multidimensional space and the cosine distance between their vectors is calculated. The closest match (based on the smallest cosine distance) was treated as the classification result. For instance, "Appalachian Folk" was matched with the broader category "Folk". The method also facilitates more complex matches: for example, Azonto – dance and music genre originating from Ghana – was accurately matched with "Dance Music". Additionally, the method is mostly linguistically agnostic, enabling it to match non-English terms such as 嘻哈/饒舌(Mandarin for "Hip-Hop/Rap") to their correct broader category. This approach allows the automated matching of hundreds of subgenres found in the analysed services. However, the method is not without limitations. Some matches may exhibit low confidence scores, which are quantified using the similarity score produced for each match. To ensure reliability, all matches with a similarity score below an arbitrarily chosen threshold of 0.8 are excluded - a value selected after manually reviewing the data, as no objective method exists for determining an optimal threshold. For example, "Catstep", a niche subgenre of dubstep, was matched with "Dance Music" instead of "Electronic Music". However, this match falls below the similarity threshold of 0.8, indicating lower confidence. As such, it is excluded from the final results, which helps maintain the quality of the classification process and minimise unsatisfactory assignments.

A song can have more than one genre assigned. Hence, the popularity of genres is analysed by calculating the number of their occurrences over time and specific

[728] For more information, please see: https://help.chartmetric.com/en/articles/3469160-the-genre-is-wrong-or-missing

[729] Voyage AI, 'Embeddings documentation' (n.d.), Voyage AI Documentation, available at: https://docs.voyageai.com/docs/embeddings

categories. The analysis highlights the top 10 genres over time, and the five most popular genres in 2023 across distinct song origin categories (national, EU non-national, and non-EU).

Table 1 *Share of observations* (in %) covered by measures

	Music consumption (top charts)				Alternative modes of discovery (top charts)		Curatorial practices (playlists)	
	MSS1	*MSS2*	*MSS3*	*MSS4*	*AMD1*	*AMD2*	*EP1*	*EP2*
Artist(s) nationality coverage	99.7	95.6	98.1	90.8	96.1	67.0	99.5	98.6
ISRC coverage	99.9	100	99.9	88.9	98.7	73.9	99.9	99.9
Lyrics language coverage	99.9	89.4	90.9	72.1	84.3	56.1	86.2	77.7
Pronouns	84.5	76.3	76.7	83.3	82.1	64.9	89	76.7
Career stage	99.9	99.6	99.5	88.1	98.5	73.4	99.9	99.9
Genre	92	-	100	-	-	-	-	68.9

Source: Own elaboration based on Chartmetric, Genius, and Make Music Equal Pronouns data. MSS – music streaming platforms, ADM – alternative modes of discovery, EP – editorial playlists. The pronouns measure is calculated only for observations (songs) linked to an artist Chartmetric ID, which allows matching of entries from top charts, editorial playlists, and alternative discovery modes to the Make Music Equal dataset. The share of songs without an artist Chartmetric ID in top charts is as follows: MSS3 (0.1%), MSS4 (43.5%), AMD1 (1.4%), and AMD2 (26%). All other music streaming service top charts, as well as all playlists, have full artist Chartmetric ID coverage.

Algorithmic recommendations

For this analysis, an API of a popular MSS was utilised, which enables the generation of recommendations based on seed lists of tracks. These recommendations were generated without personalisation for specific users, meaning they did not fully reflect a personalised recommendation experience. Instead, they relied on data on song characteristics and its extensive consumption data[730] . Despite these limitations, this approach provided the most consistent and systematic method for a case study of a recommendation system of a major music platform.

[730] The recommendation process itself is entirely server-side and operates as a "black box," with its specifics inaccessible to end users.

Generating input for the recommendation algorithm is a critical and sensitive part of this analysis, as it can significantly influence the results. To ensure a diverse and representative set of song bundles, the following methodology was employed:

- **Classification of Local Songs:** A song was considered local if at least one of its artists originated from the given country.
- **Proportional Distribution**: Seed lists were generated with varying proportions of national and non-national songs to simulate the heterogeneity of preferences for national versus non-national music consumption. The following distribution was used: [0, 0.2, 0.4, 0.6, 0.8, 1.0]. For instance, a seed list with a proportion of 0.4 included two local songs and three non-national songs.
- **Number of Seed Lists**: For each proportion, 10 seed lists were created, resulting in a total of 60 seed lists per country.
- **Track Selection**: Tracks for the seed lists were selected from songs appearing in the charts for the given country, specifically those ranked up to 100. The charts used were from 2022, as this year provided the most extensive representation of EU countries in the dataset (24 countries). During the selection process, priority was given to avoiding duplication of songs, ensuring that sampling was conducted without replacement. However, in cases where there were insufficient local songs in the top charts to meet the required proportions, some repetitions were unavoidable across bundles.

The seed lists were generated using a pseudo-randomised process to ensure transparency and reproducibility. The recommendations may differ over time, depending on the internal workings of MSS' recommendation algorithms. However, the experiments carried out in this study indicate that the results are stable within a given timeframe. Repeatedly requesting recommendations based on the same seed list consistently returns identical recommendations. Furthermore, the results are not dependent on the specific API account used, meaning that two users accessing the API will receive the same recommendations under identical conditions.

Measuring Diversity with the Herfindahl-Hirschman Index (HHI)

The analysis first examined the extent to which the assessed recommendation algorithm reflects the localness of the tracks provided as input. The findings indicate that, in most cases, the algorithm does capture this localness: a higher proportion of local tracks in the input generally leads to a larger share of local tracks in the output albeit not in the same proportion across Member States. This suggests that the algorithm may to some extent be responsive to local content cues.

However, a core focus of the project is diversity, which requires examining the recommendation outputs beyond locally driven results. To do this, local tracks were excluded from the recommendation outputs, and the analysis focused exclusively on songs by non-national EU artists. This approach enables an assessment of whether the remaining recommendations—those not directly influenced by local input—exhibit diversity or are instead concentrated among a small number of countries. By calculating a concentration index for these non-national EU tracks, it becomes possible to evaluate whether the recommendations reflect a broad range of nationalities or cluster heavily around a few. This perspective provides a deeper insight into the diversity characteristics of the recommendation system.

To evaluate artist-nationality diversity in the recommendation outputs, the Herfindahl-Hirschman Index (HHI) is applied. The HHI is a well-established measure of concentration commonly used in economics to analyse market structures and has been adapted here as a proxy for diversity. As discussed in the seminal work of Stirling (2007), the HHI can be understood as a measure of *balance*, one of the key dimensions of diversity. It is calculated as the sum of the squares of the "market shares" (i.e., proportions) represented by each nationality. The formula is:

$$HHI = \sum_{i=1}^{n} s_i^2$$

Where:

- s is the proportion of artists belonging to nationality i,
- n is the total number of nationalities.

In the analysis, the HHI is calculated based on the proportional representation of artists' nationalities within bundles of songs recommended. The index ranges from 0 to 1, where lower values indicate greater diversity (i.e., a more even distribution of nationalities), and higher values suggest increased concentration (i.e., the dominance of fewer nationalities). The analysis is based on the same dataset as the previous exercise, which includes songs that were popular in each country and used as inputs for the recommendation algorithm. The outputs of the recommendation algorithm were then analysed to assess the diversity of nationalities among the recommended artists.

The results show notable differences in diversity levels across countries based on the recommendation outputs for bundles of songs that were popular in each country. The highest exhibited diversity was evidenced with an HHI of 0.07, with three further countries with similar indices. These low HHI values indicate that recommendations for songs popular in these countries include a broad mix of nationalities, reflecting a relatively even distribution.

Conversely, the highest identified concentration, with an HHI of 0.30, suggests that recommendations are dominated by a smaller group of nationalities. Three other countries have also evidenced high HHI values (above 0.18), indicating lower diversity compared to other countries.

Most countries had HHI values in the range of 0.10–0.13, indicating moderate diversity.

Quantitative analysis: music sector – technical appendix

In this section, a detailed overview of the data sources utilised and the methods employed for data retrieval is presented. This includes an explanation of how information about music consumption, metadata, and recommendation systems was systematically collected from various popular online services. The report also highlights the rationale behind the selected data sources and the methodologies adopted to ensure comprehensive and accurate data collection, forming a robust foundation for subsequent analyses on the discoverability of diverse European content.

Objective

The primary objective of this work was to systematically collect and analyse data from various popular music and books services, focusing on three key areas:

- **Consumption**: Gathering information on top charts to understand consumption trends and popular items among users.
- **Metadata**: Compiling detailed information about artists and authors including nationality, career stage, and language of lyrics/books as well as other pertinent details.
- **Recommendations**: Examining both algorithmic and curated recommendations to assess how these platforms suggest music and books to their users.

This data was collected to support research on the discoverability of diverse European content across popular online services. By analysing consumption trends, metadata, and recommendation systems, the project aimed to evaluate how European artists/authors, and their works are represented, promoted, and accessed on these platforms.

Data Sources: Music

For data retrieval in the music sector, Chartmetric served as the primary source. As one of the leading analytics platforms aggregating and structuring global music data, Chartmetric provides extensive insights into music charts, artist performance, and metadata, including detailed information on songs, albums, and collaborators. The platform enabled access to both current and historical consumption data, offering a comprehensive view of popular charts across multiple services. In addition, Chartmetric supplied enriched metadata—such as

artist nationality and career stage—which was essential for analysing the representation and discoverability of European content within the digital music ecosystem. Chartmetric was also used to collect information on editorial recommendations.

For algorithmic recommendations, an API from one of the studied MSS was used (the relevant API endpoints are now discontinued).

For lyrics data, the **Genius API was utilised**, which is a widely recognised platform for accessing song lyrics and related metadata, including information about song languages.

Data retrieval

The official APIs provided by the respective services were used for data retrieval. An API (Application Programming Interface) is a defined set of rules and protocols that enables one software application to interact with another, allowing external systems—such as the research scripts developed for this study—to request and receive data in a structured and efficient manner.

To ensure reproducibility, custom Python scripts were written to interact with these APIs. These scripts allow the data collection process to be replicated, provided that the services' endpoints and functionalities remain stable. If endpoints are updated, deprecated, or discontinued, the scripts require corresponding adaptation to maintain functionality. An example of this challenge occurred when one MSS unexpectedly discontinued access to certain API features, which restricted the ability to perform the analysis uniformly across all countries.

All retrieved results were stored in SQL databases to enable efficient data management, storage, and retrieval. This structured format supports streamlined analysis and scalability when working with large datasets. The following sections briefly describe the structure of these databases, including key variables, the number of observations, and the units of analysis (e.g., countries, playlists).

Music Consumption

Database: chartmetric_data.db

Size: 10.27GB

Data availability in **Chartmetric** allowed us to retrieve chart information from four popular music services. For each of these platforms, **weekly chart data** spanning from the beginning of **2017 to the end of 2023** (or the earliest and latest possible dates, depending on data availability) was collected. The data coverage varied significantly across platforms and countries

Missing data:

The most problematic platform in terms of missing data was AMD2, with 8 countries experiencing approximately 60 missing weeks of data. For MSS2, nearly all countries had at least several weeks of missing data. AMD1: had fewer than 10 missing weeks for each country. MSS1 and MSS2 were the most complete platforms in terms of records, with minimal missing data compared to others.

In terms of geographical scope, focus was on retrieving data for all **27 EU member states**. Additionally, for MSS1 and MSS4, several key markets outside the EU were included— United States, United Kingdom, Brazil, India, Mexico, Canada, South Korea along with aggregated global charts - to facilitate cross-market comparisons. The number of countries for which data was retrieved varied by platform:

- **MSS4**: 36 countries (28 EU and 8 non-EU).
- **MSS1**: 30 countries (24 EU and 6 non-EU).
- **MSS3**: 27 EU countries.
- **MSS2:** 23 EU countries.
- **AMD2**: 22 EU countries.
- **AMD1:** 19 EU countries.

In the analysis, the issue of missing countries is significantly more impactful than missing weeks. While the aggregation of weekly data allows to average data points and mitigate the impact of missing weeks, the absence of data from certain countries represents a more critical limitation. Without data from these countries, entire geographic segments are lost, which cannot be recovered or inferred. Additionally, it is unclear whether the issue lies with data providers (music services) or with Chartmetric's platform.

For all services, the goal was to retrieve all available top songs. The number of songs included in the charts varied by platform:

- **For one MSS and two AMDs**, the **top 200 songs** were retrieved.
- **For the rest of MSSs**, the **top 100 songs** were retrieved.

Music Lyrics

Database: lyrics.db

Size: 7.7MB

For lyrics data, the Genius API was used to retrieve song metadata. The analysis focused on all unique songs appearing in the MSS charts during the study period, identified via their ISRC codes. This resulted in a set of 49,531 unique songs, for

which information was successfully retrieved in 44,101 cases. The remaining observations either lacked corresponding entries on Genius or represented instrumental tracks without lyrics.

Because the Genius API does not support queries using external identifiers such as ISRC or MSS-specific IDs and instead relies on its own internal Genius ID, a two-step procedure was implemented to maximise retrieval accuracy:

- **Search Query**: Genius search API was used using a combination of the **artist names** and **song title** to find the corresponding **Genius ID**.
- **Lyrics Query**: Using the retrieved Genius ID, a second API request was made to obtain detailed information, including the lyrics metadata.

This method proved more effective than relying on Chartmetric's transitional data linking Genius IDs to other identifiers, which had a high rate of missing observations. By directly querying Genius, this significantly reduced the number of missing entries and improved the overall coverage and quality of the lyrics metadata.

Table 2 Lyrics metadata from Genius service

Column name	Value	Description
genius_id	23	Unique identifier for the song in the Genius database.
isrc	NLG661900746	International Standard Recording Code, uniquely identifying the song.
language	en	The primary language of the song's lyrics.
title	Fly Out	The title of the song.
artist_names	Lil Wayne	Name(s) of the artist(s) associated with the song.
api_path	/songs/23	Relative API endpoint for retrieving detailed information about the song from the Genius API.
path	/Lil-wayne-fly-out-lyrics	Relative URL path for the song's lyrics page on the Genius website.

The **Genius API** provides a language classification for lyrics, but it does not disclose the methodology behind this process. It is likely based on some form of **automatic language detection**, which comes with inherent limitations:

- **Single-Language Limitation**: Genius assigns only one language to each song, overlooking the fact that many songs are multilingual, containing a mixture of languages within their lyrics.
- **Misclassifications**: several instances of obvious language misclassifications were observed, which could affect the accuracy of any language-based analyses.

To address these shortcomings, more sophisticated language detection methods can be applied if more granular use of the data is required. For instance, the **Lingua language detection package was tested**, which appeared to provide more reliable results. However, using such tools would require access to the actual lyrics text.

The Genius API only returns **URLs to the lyrics** hosted on its platform, making it necessary to scrape the content to obtain the full text. While scraping Genius would be technically straightforward, it is a controversial approach. Genius has previously taken steps to prevent such actions, raising potential legal and ethical considerations regarding the use of scraped content.

Editorial playlists

Database: chartmetric_playlists.db

Size: 635.8MB

For **editorial playlists**, focus was on **two MSS,** as these platforms provide playlists officially curated by editors affiliated with their services.

Recommendations

Database 1: recommendations_mss1.dbSize: 131KB

Database 2: recommendations_mss2.db

Size: 13.5MB

For **recommendations**, the study analysed a major MSS' **automated** recommendations system. It uses a **hybrid recommendation approach**, combining:

- **Content-based filtering**: Analyses intrinsic features of tracks (e.g., tempo, key, timbre) to recommend similar content.
- **Collaborative filtering**: Leverages user-generated data, such as playlists and listening habits, to identify relationships between tracks based on shared user preferences.

For **recommendations** retrieval, the official API was used, which allows for the generation of recommendations based on **seed lists** of up to **five tracks**. These recommendations were generated without any personalisation for a specific user,

meaning they did not fully reflect personalised recommendation experience. However, this approach provided the best proxy for studying recommendation system in a consistent and systematic way.

Experiment Design

- Seed Lists Creation:
    - For each country, 60 seed lists were generated (10 for each proportion of local/non local songs, see below) consisting of tracks that had appeared in charts for that country.
    - The seed playlists were created using a pseudo-random generation process, ensuring that the selection of tracks was reproducible (provided endpoint becomes operational again) and transparent.
- Varying Proportions of Local Songs:
    - A song was considered local if at least one of its artists was from the given country.
    - Seed lists were created with varying proportions of local songs, using the following distribution:
    - Proportions = [0, 0.2, 0.4, 0.6, 0.8, 1.0].
    - For example, a seed list with a proportion of 0.4 would contain 2 local songs and 3 non-national EU songs.
- Analysis Objective:
    - By comparing the proportions of local tracks in the seed lists to the proportions of local tracks in the recommended songs, it was aimed to assess how aligned MSS' recommendations are with the local content represented in the seed lists.

Limitations, Caveats, scope, range, representation

Official languages and language codes

The data on countries' official languages was obtained from 'World Languages,' an open data resource provided by the University of Groningen, and accessed via ResourceWatch.com[731]applewebdata://3BCD9846-41E1-42E4-BF8D-CCEB182A30FD/ - _ftn8. The language codes were obtained from the Language Coding Agency[732]applewebdata://3BCD9846-41E1-42E4-BF8D-CCEB182A30FD/ - _ftn9. See Table below for the details.

[731] University of Groningen, 'World Languages' (2016), *University of Groningen Open Data*, available at: https://www.resourcewatch.org/

[732] Library of Congress, 'ISO 639-2 Language Code List' (n.d.), ISO Standards, available at: https://www.loc.gov/standards/iso639-2/php/code_list.php

Table 3 Countries and their official languages

Country name	Country group	Official languages	Language codes
Austria	EU	German	de
Belgium	EU	Dutch, French, German	nl, fr, de
Bulgaria	EU	Bulgarian	bg
Croatia	EU	Croatian	hr
Cyprus	EU	Greek, Turkish	el, tr
Czech Republic	EU	Czech	cs
Denmark	EU	Danish	da
Estonia	EU	Estonian	et
Finland	EU	Finnish, Swedish	fi, sv
France	EU	French	fr
Germany	EU	German	de
Greece	EU	Greek	el
Hungary	EU	Hungarian	hu
Ireland	EU	Irish,English	ga, en
Italy	EU	Italian	it
Latvia	EU	Latvian	lv
Lithuania	EU	Lithuanian	lt
Luxembourg	EU	Luxembourgish, French, German	lb, fr, de
Malta	EU	Maltese, English	mt, en
Netherlands	EU	Dutch	nl
Poland	EU	Polish	pl
Portugal	EU	Portuguese, Mirandese	pt, mwl
Romania	EU	Romanian	ro

Country name	Country group	Official languages	Language codes
Slovakia	EU	Slovak	sk
Slovenia	EU	Slovenian	sl
Spain	EU	Spanish	es
Sweden	EU	Swedish	sv
Brazil	Other	Portuguese	pt
Canada	Other	English, French	en, fr
China	Other	Mandarin	zh
India	Other	Hindi, English	hi, en
Korea	Other	Korean	ko
Mexico	Other	Spanish	es
United Kingdom	Other	English	en
United States of America	Other	English	en

Annex 5: Book analysis methodology

Platform selection

The book market is highly fragmented, and as such (in contrast to the music sector) it is difficult to select services covering the EU in a consistent manner. The data availability and coverage of specific platforms and services were therefore examined in order to include, as far as possible, a varied group of countries and categories of platforms, and to be able to distinguish between local, EU patterns and international platforms operating primarily on foreign markets.

Recommendation (social cataloguing) platforms

As described in the report, the recommendation platform market is fragmented. For a comprehensive look, two large international social cataloguing platforms and two national ones were selected. This selection is based on providing a broad picture, while at the same time ensuring that similar metrics can be considered across the set of platforms (e.g. most popular charts, reader awards, recommendations, some editorial work). At the same time, the selected platforms contained extractable information (through scraping or APIs) for broad catalogues of books and authors, allowing for as thorough as possible identification of writer nationalities and gender.

For local-level recommendation platforms the choice was also based on exploration of the market. Two platforms from those most popular in their local markets were selected based on data from SimilarWeb internet traffic rank. Both had similar features to the international platforms (thus allowing for comparisons). Platforms with low local popularity were omitted. The analysed sample did not cover all identified platforms, as developing separate tools for each individual platform would not be feasible as part of this project. Moreover, broader coverage would not necessarily allow for EU-wide comparisons as the platforms tend to differ in how they present content. This, coupled with different popularity (and likely audience demographics), would render broader comparisons inadequate.

Book-selling platforms

For book-selling platforms a large international online seller with dedicated storefronts in several EU countries was selected. Additionally, two internationally popular sellers distributing audiobooks and e-books were selected. The selection considers broad accessibility across EU countries, as well the accessibility of book-level metadata (e.g. ISBN identifiers). Moreover, to identify relevant internationally popular e-book and audiobook platforms, online rankings of the most often downloaded mobile apps in the Book category for iOS and Android systems were explored. The rankings came from Appfigures[733], a service compiling top apps across app stores (e.g. iOS and Google Play) and categories. For each EU country Top 20 apps in the ”Books” and ”Books & Reference” categories for iOS (on iPhones) and Google Play stores were collected, respectively. Afterwards, the e-book/audiobook apps that appeared across the most EU countries were identified (while omitting top-ranking apps with e.g. fan-fiction like Wattpad or Galatea or, e.g., Bible reading apps). The identified apps had dedicated storefronts in multiple EU countries and were top-ranking in most of them.

To summarise, in the quantitative analysis a choice was made to focus on a large retailer with international reach; two internationally popular e-book and audiobook distributors; two international social cataloguing platforms, and two highly popular local discovery platforms. Focus is on the representation of EU authors across the discovery pathways tied to these platforms, wherever data is publicly available. This includes looking at bestseller and ‘most popular’ lists, readers’ lists, automated recommendations, editorial picks, interviewee selection and the yearly choice awards. All data were retrieved with automated scraping, with additional historic data collected through archived copies of the websites available through the Internet Archive’s Wayback Machine. Relevant limitations of these data are discussed along with the findings in respective sections and in the following subsections.

Data and measures

Book consumption and readers’ preferences data

Market-level consumption data is not publicly available. Moreover, as this report focuses on the online environment, focus is on online platforms and services, and the consumption habits of their users. The primary choice for the analysis of book consumption (and the associated diversity of European titles) are bestseller lists at an international online retailer, as well as the most popular titles on several social cataloguing platforms and digital books providers.

The international retailer bestseller lists display current best-selling book titles in general and across specific book genre categories. In order to be able to also cover historic trends as well as broader sets of titles, the study relied on the

[733] https://appfigures.com/top-apps/ (accessed: 02.03.2025)

Internet Archive Wayback Machine - a service dedicated to the archival of past versions of web content. This allowed us to broaden both the timeframe and scope of the bestseller data. However, this approach also comes with several important limitations. First, national versions of the platform were introduced at different times. This means that the periods that can be covered for different countries differ significantly. Second, the Wayback Machine does not cover all URL addresses equally. The coverage seems to partially depend on the popularity of specific pages. This means that there is a higher frequency and coverage for larger countries and for broader book categories than for smaller countries and highly specific book categories. Still, the coverage can be randomly inconsistent with some years having numerous copies, while others none or few. Third, the bestseller lists were often split across several pages with only the first one archived - yielding only 30-50 titles per date point. Fourth, the front page evolved over the years, sometimes introducing changes to the number of titles per archived bestseller list. To reduce noise, the project team aggregated the identified time points to yearly levels and conducted analysis on the basis of unique titles appearing in each given year.

The study also looks at the most popular titles from three recommendation (social cataloguing) platforms: one international and two national local ones. The data come from weekly and monthly popularity rankings encompassing the 100 or 200 titles with most interactions, sometimes conditional on being new at the time of the ranking or on having a minimum rating score above a threshold.

To cover e-books and audiobooks, additional information was collected from the front pages of two digital booksellers. Both platforms display available titles and group them into categories such as “Most popular,” “New releases,” or “Originals” (or sometimes leave categories unlabelled). The analysis focuses on the most popular category, separately for audiobooks and e-books. Although other categories might also be relevant, their organisation and underlying criteria are unclear and not always consistent across countries. As historic data was not directly accessible, the Wayback Machine was used to expand the available sample. All date points from the 2020s were examined to gather as many unique titles as possible; however, the number of date points was insufficient to provide a longer historical perspective. Consequently, the comparisons presented cover the years 2020–2025 or, for some platforms, 2023–2024.

The data used in this analysis comes with several important limitations. Across all available sources, only top-charting titles can be examined, as no dataset offers full coverage of the entire distribution of consumption. While some existing studies have utilised broader book sales data, these typically focus on a single country and a single point in time (e.g. Waldfogel and Reimers, 2015), and such data is not publicly available. To achieve consistent cross-country coverage, the analysis therefore relies on sources listing top titles across multiple markets. For recommendation platforms, three specific cases are examined to reflect variation in platform characteristics and national contexts. Although diversity patterns in the long tail of the distribution may differ from those observed among top titles,

the charts nonetheless provide valuable insight into overall trends in consumption of the most popular works and allow for cross-country comparisons within the EU.

Exploration of the recommendation platforms revealed that they largely rely on community-driven curation practices and editorial work (see Facilitators in the Conceptual Framework). Users can supply missing metadata on authors and books but are also encouraged to participate in creating lists or selecting the best works. This can take the form of managing an own virtual shelf for cataloguing your own reading history, but also of sharing your own reading history, reviews and ratings with others.

Service editors' curatorial practices data

Many of the book-related platforms provide editorial recommendations in a variety of forms, including essays, blog posts, lists or interviews highlighting either specific books or authors. Of the platforms analysed in this report, the international online retailer, one of the international and two local social cataloguing platforms provide frequent editorial recommendations of some type.

An important challenge with this sort of information is that it does not fully follow a standardised structure. The way recommendations are presented might have changed over time as the platform changed its own editorial practices or as the website layout evolved. Titles are sometimes mentioned within the body of the posts and sometimes as a list after an introduction to the theme of the specific selection (e.g. "6 books for the upcoming seasonal holiday").

Automated recommendations data

The book platforms examined include a range of automated recommendation features in addition to community or editorial curation. These recommendations may be based on users' reading histories or on the behaviours of other readers (see also *Interpreters* in the Conceptual Framework). Testing fully personalised recommendations was not feasible within the scope of this study, as this would require a more complex methodological design—such as deploying automated "sock puppet" accounts with differentiated profiles—and significantly greater resources. Instead, the analysis focuses on non-personalised recommendations displayed directly on book pages.

These non-personalised recommendations are generated based on the currently viewed book and typically refer to works considered similar, or to books read by other users who engaged with the same title. Data of this type was collected from three social cataloguing platforms (one international and two local). Genuinely popular titles were used as the starting set for retrieving recommendation lists. For each popular title, the associated recommendation lists were extracted, and metadata for all recommended works was subsequently collected.

The platforms offer multiple types of recommendation modules on each book page. Only those recommendation types that remained fixed—i.e., those not influenced by user browsing history—were selected for analysis. Although this approach omits the effects of personalisation, it makes it possible to identify

structural connections embedded in platform algorithms and underlying databases, particularly with regard to author nationality patterns. The collected recommendations were categorised under labels such as “Readers also enjoyed,” “What to read after …,” and “Similar books”.

For one of the local platforms, the number of unique recommendations was exceptionally small. After a short investigation it seemed that the recommendations were provided purely on the basis of book genre. Still, despite the restriction, it still means that these are the titles users are exposed to when navigating the platform.

Identifying European books

Challenges

The book market is characterised by rich metadata. At the same time, however, the data on the origin of particular titles is difficult to collect and presents several challenges. Much of the structured data on authors is provided by communities, with additional information sometimes available through unstructured biographical notes. In this context, social cataloguing platforms are a valuable source of information. However, even then the data is often inconsistent or simply missing. These problems affect the way EU titles might be discovered but also how interaction with these titles can be utilised by platforms (see the role of Interpreters in discovery).

Conceptualising the identifier of European works, as described in chapter 2, thus poses notable challenges due to data availability and coverage. More specifically, the following challenges were encountered when trying to identify the country of origin for books in the data:

Missing information on authors

For many authors the information on their nationality or birthplace is not available from the online platforms. This meant combining different sources and to seek identification through other means. Still, the resulting coverage does not provide information on the country for as few as 1% title appearances in some analyses to as many as 75% in some others.

Selection in information availability

Notably, despite gaps in the available data, most title appearances across the analyses are nonetheless captured. This reflects both an advantage and a limitation of the approach. In general, more popular authors are more likely to have complete and structured metadata available. They are also more likely to have produced a larger number of books, and these books tend to appear repeatedly across multiple sources such as curated lists, Readers’ Choice awards, and bestseller rankings. Consequently, the availability of information for

popular authors enables broad coverage of title appearances included in the study.

However, this dynamic also introduces important limitations. Because the accessible data is disproportionately concentrated among popular authors, the resulting dataset is skewed toward higher-profile creators. This may lead to systematic biases if authors with missing information are more likely to come from specific regions—for example, European countries, particularly in the case of platforms whose catalogues are not centred on European content. Such imbalances should be considered when interpreting cross-country or cross-regional patterns in the findings.

Inconsistent information on authors

The information on authors is not always consistent. For some authors it was possible to collect data on their nationality, while for others the place of birth was provided instead. This is problematic in the sense that the birthplace is not always indicative of the eventual country a writer settles in. Moreover, the provided information varies in detail and might refer to a city, a state, a country or region. Finally, as much of the information is curated through inputs from the community, it results in sometimes different approaches to how it is specified, including with additional annotations, etc. This forced us to define automated identification approaches that are able to standardise the large majority of the data but not all of them.

Matching books with author data across platforms

The author data is not available through all platforms, and the study combines the information from different sources. This means conducting matching procedures. However, there are no global author identifiers, while matching on names could result in spurious matches of same-named writers. This forced us to identify author identifiers through additional steps, by seeking out books based on their ISBN identifiers across different platforms and then collecting information on the associated authors. This approach suffers from slower progression and the risk that certain book editions might be available in one platform but not in another. This forced us to seek these connections across different books and to construct a cross-walk of connections between different, platform-specific author IDs and associated ISBN-13 or ISBN-10 or platform-specific title IDs.

Data quality issues and erroneous information

As the author data are largely curated by platform user communities, it is likely that some of the provided information is in fact erroneous or at least not comprehensive. While this problem pertains to a minority of cases, there is no way for us to account for that other than try and prioritise the sources that seem most reliable.

Identifying the original publication

There is no perfect source for matching book editions. While such data exist and are provided by existing book industry platforms and services, even they do not have a 100% coverage and can, e.g., provide a more comprehensive coverage of Western economies. This poses a challenge because it prohibits us from reliably identifying the original publication of specific titles, which could have been a way of identifying the language and publisher country for the original and - consequently - the author's country of origin.

Approach in this study

To ensure broad coverage of country-level information, data from multiple sources across the analysed platforms were combined. The resulting measure integrates information from direct nationality and birthplace indicators, country references found in biographical notes, country-of-origin tags, and original titles and languages. Because these variables originated from different platforms, it was necessary to match author and book entries across services. To minimise the risk of erroneous matches—for example, conflating authors who share the same name—unique global and platform-specific identifiers were used. ISBN codes, which represent the common standard available across all services in this study, served as the central matching tool. Each book was searched via its ISBN, allowing the retrieval of corresponding author and book identifiers within each platform and enabling consistent extraction of relevant indicators while avoiding spurious matches.

The process of determining author country information began with author-level data, prioritising direct nationality information from one of the international platforms, as nationality may differ from birthplace. When available, map-based country indicators returned through one of the platform's API were also used. If these sources lacked sufficient information, birthplace data from a second international platform was used next, followed by birthplace data from the first platform. The second platform was prioritised in these later stages due to its larger user base and potentially more consistent metadata. When birthplace information was unavailable, biographical notes from the second platform were examined for country names or country adjectives. All identifiable country names were then matched to ISO-2 country codes.

A number of limitations were encountered. Many entries contained incomplete geographical information, such as U.S. state names without explicit country names; these were manually assigned to the United States. No comprehensive or reliable automated method could be applied to harmonise other inconsistently formatted locations. Furthermore, platforms varied in their treatment of historical regions and states (e.g. Ancient Greece, the Austro-Hungarian Empire, the Holy Roman Empire), and no viable automated approach existed for consistently categorising these in relation to current country classifications. As the appropriate designation of such entities—especially those extending beyond the European

continent—was ambiguous, the analysis was limited to countries that could be directly matched to current EU Member States.

Despite these efforts and the combination of author-country information from two major platforms, a substantial number of observations still lacked identifiable author data. As a second step, book-level tags were therefore used, which in some cases indicate the country of origin of specific titles. Priority was given to the largest platform, followed by the two local platforms.

As a final major approach, author identifiers were supplemented with information on the original language of each book. Although original language is not a definitive indicator of nationality—for example, a book written in French may originate from France, Belgium, or Canada—it can provide a useful additional signal for many languages (the information was not used for languages constituing official ones in more than one country). This information was identified through several methods. First, the “original book language” field from an international platform was used when available. When missing, the language of the “original title” strings was detected using data from two international platforms and one local platform, applying the R implementation of Google’s Compact Language Detector 2 (cld2 package).

For one local national platform, an additional identification method was applied using metadata on edition languages, dates of first publication, dates of first publication in the platform language, and translator names. This approach enabled the identification of originally national works, defined as those written in the local language with no translator involvement, or those whose first publication date matched the publication date in that local language.

Drawing on this combination of methods, the majority of titles included in the analyses could be classified as national, European, or non-European. However, because data-coverage challenges were more pronounced in certain cases or years, analyses are sometimes accompanied by information on coverage levels and the share of titles for which author information remains missing.

Annex 6: Stakeholder list and consultation process

Stakeholder consultation was a central component of the project, ensuring that the perspectives of a broad range of actors across the music, publishing, and wider cultural and creative sectors were represented throughout the study. The consultation process was designed to be iterative and inclusive, combining different formats of engagement to gather both qualitative and quantitative insights.

Interviews and Meetings

- In the initial months of the project, a Stakeholder Community was established, bringing together a wide range of sectoral representatives.
- A series of in-depth interviews was carried out with community members to gather detailed information on sector-specific approaches, challenges, and opportunities regarding content discoverability.
- Additional interviews and bilateral consultations were held, including in-person meetings in Brussels, to ensure coverage of key perspectives.

Focus Groups and workshop

- Two focus groups were organised in December 2024 to explore the effects of industry practices on diversity and discoverability in music and book services.
- Each session lasted two hours and combined short presentations with structured questions and open discussions.
- A workshop to help develop recommendations took place in Brussels (and online) in October 2025.
- All members of the Stakeholder Community were invited, alongside additional experts, representatives of the European Commission, and members of the project's scientific board.

Conferences and Events

- Members of the research team attended key sectoral events and conferences.
- Insights from these events were fed into the consultation and informed the project's analytical outputs.

Engagement with Other EU Projects

- Regular exchanges took place with other EU-funded projects to ensure synergies and avoid duplication of efforts.

Final Remarks

- Over the course of the project, the stakeholder community expanded significantly, with continuous input from new organisations and experts.
- By the conclusion of the project, the consultations had provided a comprehensive, representative, and multi-level evidence base that was critical in shaping the study's conclusions and recommendations.

Summary of key stakeholders Consulted (Organisations)

- AEPO-ARTIS – Performers' Organisations
- AER – Association of European Radios
- Amazon
- Artenso
- CAE – Culture Action Europe
- CEPIC – Centre for Picture Industry
- CISAC – International Confederation of Societies of Authors and Composers
- CNM – Centre national de la musique
- Cyanite
- Deezer
- DME – Digital Music Europe (incl. Spotify, Deezer, Soundcloud, etc.)
- DOTEurope
- EBLIDA – European Bureau of Library, Information and Documentation Associations
- ECSA – European Composer & Songwriter Alliance
- Editeur
- EIBF – European and International Booksellers Federation
- EMC – European Music Council
- EMEE – European Music Exporters Exchange
- EMMA – European Music Managers Alliance

- ETC – European Theatre Convention
- European Coalitions for Cultural Diversity
- European Visual Artists
- Europeana
- EWC – European Writers' Council
- FEP – Federation of European Publishers
- FNAC / Cultura
- GESAC – European Authors' Societies
- Google
- IFCCD - International Federation of Coalitions for Cultural Diversity
- IFPI – International Federation of the Phonographic Industry
- IMPALA – Independent Music Companies Association
- Libri
- Liveurope
- MétaMusique (Discoverability Index)
- Michael Culture Association
- Music Story
- Music Tech Europe
- Music Tomorrow
- Musiio
- Other EU-funded projects (e.g. FairMusE, OpenMusE)
- Panodyssey
- Pass Culture
- Pearle* – Live Performance Europe
- Reflection Group on the Diversity of Cultural Expressions in the Digital Environment
- Soundcharts

- Universität Salzburg
- University of Leeds
- Warner Music France
- World Intellectual Property Office

Annex 7: Consumer survey methodology

The consumer survey was designed to assess preferences, behaviours, and satisfaction levels regarding the discoverability of diverse cultural content on online services. Specifically, the survey aimed to gather insights on:

- Consumers' experiences accessing diverse European cultural and media content.
- Attitudes towards curated lists and algorithmic recommendations in terms of diversity.
- Broader cultural consumption patterns, including media, music, and reading behaviours.

The survey covered the **entire European Union**, while also receiving some responses from outside the EU. A total of **417 respondents** completed the survey. A total of **417 valid responses** were received. Below, the characteristics of the sample are presented in detail.

Overall, the survey reached a diverse and digitally active group of European citizens. Respondents were predominantly young to middle-aged, well educated, urban-based, and financially secure. Participation was particularly high in **Poland, Spain, and the Netherlands**, which together accounted for over 60% of the sample. This profile provides an interesting basis for analysing consumer perspectives on the discoverability of diverse European content in the digital environment.

Annex 8: Consumer survey questionnaire

1. Introduction

Thank you for agreeing to participate in our survey! The survey is a part of a project conducted for the European Commission on the discoverability of European music and books in the digital environment. It should take approximately xx-xx minutes to complete.

The general objective of the survey is to understand how book readers and music listeners interact with online services, automated and editorial recommendations, as well as how this translates into the discovery of new titles in general and, notably, of European titles. For more details see here. [https://culture.ec.europa.eu/it/news/european-commission-launches-study-on-discoverability-and-promotion-of-cultural-diversity-online]

Throughout the rest of the survey, when a question mentions:

- ***European*** *music/books* or *artists/authors*, it concerns titles authored or performed by one or more creators from an **EU Member State** (excluding book translators).

- ***Discovery*** and ***discovering***, it concerns learning about a previously unknown title (whether intentionally – e.g. via search, or unintentionally – e.g. via automated recommendations).

2. General questions

Please answer a few short questions about yourself.

1. Choose the preferred language of the survey [list]

2. In which region or country do you primarily reside?

(Drop down box of EU Member States and also including 'other' – please specify) - Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the UK, Other (please specify)

3. What is your home country?

(Drop down box of EU Member States and also including 'other' – please specify) - Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the UK, Other (please specify)

4. Gender

(Drop down box - Male / Female / Non-binary / Other / Prefer not to say)

5. Age

(Drop down box - 18-24 years old / 25-34 years old / 35-44 years old / 45-54 years old / 55-64 years old / 65-74 years old / 75 years or older / Prefer not to say)

6. Education

(Radio buttons - "Lower secondary or lower", "Upper secondary or equivalent", "Tertiary")

7. Would you say you live in a...?

1. Rural area or village

2. Small or middle-sized town

3. Large town or city

8. How do you assess your financial standing and that of your household?

(Single-choice question)

1. I/We don’t have enough money even for our basic needs

2. I/We have to be very economical on a daily basis

3. I/We have enough money for our daily life, but have to save for more serious purchases

4. I/We can afford to buy things without saving much

5. I/We can afford some luxury

9. How much time do you spend listening to music in a typical week?
    a. None at all (0 hours)
    b. 1-10 hours
    c. 11-20 hours
    d. 21-25 hours
    e. More than 25 hours

10. How many books have you read in the last 12 months?

a. None

b. 1-3 books

c. 4-8 books

d. 9-15 books

e. 15 or more

3. [if BOOK==0 and MUSIC==0] Thank you

As the survey is dedicated to the discovery of music and book content, any further questions are targeted to consumers of one or the other (or both). Thank you for your time and interest in the study.

[Randomise the order of the Books and Music sections for each responder]

4. [if MUSIC==1] Music

11. How important would you say are the following sources for your discovery of music?

[Note: some services may include features from more than one category (e.g. streaming and online communities). Please mark a respective category as important only if you use the described feature.]

	Don't use	Not important	Somewhat important		Very important
Music streaming services (e.g. Spotify, Deezer, Apple Music, YouTube Music)					
Music cataloguing / discovery services (e.g. Last.fm, Shazam)					
Online communities or forums (e.g. Facebook groups, Reddit)					
Recommendations from friends and family					
Live events (e.g. concerts, music festivals)					
Press (e.g. expert blogs or magazines)					
AI chats (e.g. ChatGPT prompted for recommendations)					
Social media platforms with video sharing (e.g. Instagram, TikTok, YouTube)					
Radio					
Other types of media (e.g. film, TV, video games)					
Other sources (what kind? [open])					

12. How likely are you to listen to music in the following languages?

	Not at all likely	Somewhat likely	Very likely	Don't know
Your native language				
English				
Another European language (different from you native language or English)				

13. What are the reasons why you are unlikely to listen to music in European languages other than your own or English? (mark all relevant)

- I don't like listening to music in unfamiliar languages
- There isn't much music from other European countries that I like
- No particular reason, I just don't often hear or read about such music
- No particular reason, such music just doesn't get recommended to me
- No particular reason, other music is just more easily available

- Other reasons (what? open)
- Don’t know

5. [if MSS == 1] Music streaming services

For the following questions please consider the music streaming service (such as Spotify, Deezer, Apple Music, YouTube Music) that you use most often.

For the following questions, when we mention:

- **Manually curated / editorial playlists,** we refer to playlists with music that is hand-picked - typically by experts working for the service (e.g. Fresh New Indies, New Music Friday)
- **Automated playlists**, we refer to the playlists that are prepared by algorithms, and which are thus based on user’s listening history (e.g. “Daily mix”, “Made for You”) or updated regularly without human editors (e.g. “Music for driving”)

14. When using the streaming service, what kind of playlists provided by the service do you use? (please mark all relevant)
    - Manually curated / editorial playlists **[mark MPE = 1]**
    - Automated playlists **[mark MPA = 1]**
    - I don’t know if they are editorial or automated **[mark MPP = 1]**
    - I don’t use any of the playlists provided by the service
15. In a typical week, how often do you…

	Never	Sometimes	Often
… manually search the service for a song, album or an artist that you already know			
… manually search the service for previously unheard music of an artist you already know			
[If MPE == 1]… select playlists manually curated by the service editors			
[If MPA == 1]… select automated playlists			
[If MPP == 1]… select playlists prepared by the streaming service			

… select own playlists or bookmarked music			
… listen to recommendations provided on-the-go (e.g. songs selected automatically after or in-between the songs that you picked)			

16. When using the streaming service how easy would you say it is for you to…

	Difficult	Neither difficult or easy	Easy	Don't know
… find artists from your home country?				
… find artists from the UK?				
… find artists from other European countries?				
… find music with lyrics in your native language?				

6. Automated recommendations

For the following questions, consider automated recommendations you receive in the streaming service (e.g. on the front page, after or in-between tracks, automated playlists).

17. Typically, how satisfied are you with the automated music recommendations you receive in the streaming service?

    - Very satisfied
    - Satisfied
    - Neither satisfied or dissatisfied
    - Dissatisfied
    - Very dissatisfied
    - Don't know

18. To what extent do you agree with the following statements about automated recommendations in the streaming service? Thanks to automated recommendations…

	Disagree	Neither disagree nor agree	Agree	Don't know
I discover more music in general				
I discover more music from my home country				
I discover more music in my native language				
I discover more music from other European countries				
I discover more diverse music in terms of artist nationalities				
I discover more diverse music in terms of lyrics languages				

7. [if MSM == 1] Social media platforms

For the following questions please consider the social media platform (e.g. Instagram, TikTok, YouTube) at which you discover music most often.

19. In a typical week, how often do you…

	Never	Sometimes	Often
… look for music recommendations on social media platforms			
… unintentionally discover relevant music on social media platforms			

20. To what extent do you agree with the following statements about the music you discover in the social media platform? Thanks to the platform…

	Disagree	Neither disagree nor agree	Agree	Don't know
I discover more music in general				
I discover more music from my home country				

I discover more music in my native language				
I discover more music from other European countries				
I discover more diverse music in terms of artist nationalities				
I discover more diverse music in terms of languages of the lyrics				

8. [if BOOK==1] Books

21. How important would you say are the following sources for your discovery of books?

[Note: some services may include features from more than one category (e.g. cataloguing and online communities). Please mark a respective category as important only if you use the described feature.]

	Don't use	Not important	Somewhat important	Very important
Online stores with books (e.g. Amazon, Allegro or local online bookstores)				
Social cataloguing / discovery websites (e.g. Goodreads, Storygraph or similar national websites, e.g. Gleeph, Lubimyczytać)				
Online communities or forums (e.g. Facebook groups, Reddit)				
Reading apps (apps with e-books or audiobooks, e.g. Kindle, Apple Books, Storytel, Audible)				
Recommendations from friends and family				
Recommendations at local bookshops or libraries				
Press (e.g. expert blogs or magazines)				
AI chats (e.g. ChatGPT or similar tools prompted for recommendations)				
Social media platforms with video sharing (e.g. Instagram, TikTok, YouTube)				
Other types of media (e.g. film, TV, video games)				
Other sources (what kind? [open])				

22. How likely or unlikely are you to read books by authors from the following countries and regions?

	Not at all	Somewhat likely	Very likely	Don't know
Your home country				
Your country of residence				
The UK				
Other European countries				
Elsewhere				

23. How likely are you to read books in the following languages?

	Not at all likely	Somewhat likely	Very likely	Don't know
Your native language				
English				
Another European language (different from you native language or English)				

24. What are the reasons why you are unlikely to read books by authors from other European countries than your own? (mark all relevant)

- It's hard to find translations to my language
- There are not many books by authors from other European countries that I like
- No particular reason, I just don't often hear or read about such books
- No particular reason, such books just don't get recommended to me
- No particular reason, other books are just more easily available
- Other reasons (what? open)
- Don't know

9. [if BOS == 1 or BDS == 1 or BRA == 1] Book services

For the following questions please consider the service (online store, social cataloguing service, reader apps), that you use most often.

25. When looking for a book, how often do you…

	Never	Sometimes	Often
… browse through the bestseller/most popular lists			
… look at the platform editorial picks (e.g. Editors' Choice or "Featured" categories)			
… look at lists or recommendations from other service users			
… look at the automated recommendations based on specific books (e.g. "Readers also bought/liked…" sections)			
… look at the personalised recommendations (e.g. "For you" lists based on current browsing, shelves or purchase history)			
… search for books from already known authors			
… search for books discovered from different sources (e.g. friends' recommendations, other services)			

26. When using the store how easy would you say it is for you to…

	Difficult	Neither difficult or easy	Easy	Don't know
… find books by authors from your home country?				
… find books by European authors from other countries?				
… find book editions published in your native language?				

10. Automated recommendations

For the following questions, consider the automated recommendations you receive in the online store.

27. **[if BRU == 1 or BRP == 1]** Typically, how satisfied are you with the platform's recommendations you receive (e.g. "Readers also bought/liked/read", "For you")?

    - Very satisfied

- Satisfied
- Neither satisfied or dissatisfied
- Dissatisfied
- Very dissatisfied

28. **[if BRU == 1 or BRP == 1]** To what extent do you agree with the following statements about the platform's recommendations you receive based on specific titles (e.g. "Readers also bought")? Thanks to these recommendations…

	Disagree	Neither disagree nor agree	Agree	Don't know
I discover more books in general				
I discover more European authors				
I discover more authors from my home country				
I discover more diverse books in terms of author nationalities				

11. [if BSM == 1] Social media platforms

For the following questions please consider the social media platform (e.g. Instagram, TikTok, YouTube) at which you discover books most often.

29. How often do you…

	Never	Sometimes	Often
… look for book recommendations on social media platforms			
… unintentionally discover books that you would like to read on social media platforms			

30. To what extent do you agree with the following statements about the books you discover in the social media platform? Thanks to the platform…

	Disagree	Neither disagree nor agree	Agree	Don't know
I discover more books in general				
I discover more authors from my home country				
I discover more authors from other European countries				
I discover more diverse books in terms of author nationalities				
I am more likely to read books in English language				

12. Open-ended

31. Do you have any comments about the survey and question design? Do you feel that anything was unclear, confusing, or didn't represent your personal experiences?

[Open-ended]

32. Do you have any other comments about the topics covered by this survey?

[Open-ended]

33. If you'd like to be informed about the results of the survey, please provide your e-mail address below:

[Open-ended]

13. Exit screen

Thank you for your time and thoughtful answers. We'd be grateful if you considered sharing the survey in whatever way you find suitable: <link>

Annex 9: Agenda for workshop on the discoverability of diverse European cultural content

On October 7th, the consortium held a workshop as part of the ongoing Study on the Discoverability of Diverse European Content in the Digital Environment, commissioned by the European Commission (DG EAC).

This one-day workshop was designed to provide a forum for exchange between stakeholders from across the cultural and digital sectors in order to feed in the finalisation of the study. The objective was to:

- Explore and reflect on the conceptual model for discoverability and its implications for policy;
- Review evidence and trends in the music and book sectors as regards the discoverability of diverse European cultural content online, including the impact of recommender systems on diversity of exposure;
- Discuss potential policy options and areas for action to strengthen the discoverability of diverse European cultural content.

AGENDA

9:30 – 10:00 | Arrival & Registration / Online Log-in

- Light refreshments and networking
- Tech check and informal welcome for online participants

10:00 – 10:15 | Welcome and Introduction

Speakers:

- European Commission (DG EAC)
- Project coordinator/workshop hosts

10:15 – 11:00 | Session 1 – Conceptual Model & Policy Landscape (Plenary session)

Presentation 10:15-10:35 followed by plenary discussion:

- Conceptual framework of discoverability (dimensions, actors, dynamics)
- Key policy issues

11:00 – 11:15 | Coffee Break

11:15 – 12:00 | Session 2 – Key Trends and Evidence: Music, Books and other CCS (Plenary session)

Presentation includes:

- Consumption trends and exposure diversity in music and book sectors
- Role and impact of recommender systems
- Evidence from user data and platform behaviour

12:00 – 13:00 | Session 3 – Focus Areas and Policy Options (Part 1) (Breakout session)

- 12:00 – 12:15 | Presentation
- 12:15 – 13:00 | Interactive Discussion (Breakout groups)

13:00 – 13:45 | Lunch Break

13:45 – 14:30 | Session 4 – Focus Areas and Policy Options (Part 2) (Breakout session)

- Continuation of interactive discussion (Breakout groups)

14:30 – 14:40 | Coffee break

14:40 - 15:30 | Session 5 – Next Steps and Policy Implications (Plenary session)

- Synthesis of earlier inputs: A summary of the key points discussed during the earlier sessions
- Forward-looking dialogue on implementation, monitoring, and support needs

15:30 – 15:45 | Closing Remarks

- Wrap-up of main takeaways
- Explanation of how the inputs will feed into the final report
- Thanks and closing by Commission and project team

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