Study on the economic impact of Generative AI in Music, and Audiovisual industries

Complete study

Current situation and 2028 perspective

November 2024

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PMP Strategy
positive impact

Content of the study

Disclaimer

1. This Study was prepared by PMP Strategy, an independent strategy consulting firm mandated by CISAC, to assess the economic impact of Generative AI on creation in the Music and Audiovisual sectors.

2. The study provides PMP Strategy's independent and objective view on the evolution and impact of the use of Generative AI services on the two repertoires considered up to 2028. The historical figures and forecast assumptions are based on market data, relevant benchmark and interviews with industry experts: Collective Management organizations (CMOs), creators, tech players, producers, publishers, DSPs, and institutional players representative of the two industries.

3. Inevitably, unanticipated events and circumstances may occur, and some of the assumptions used to develop the forecasts may not be realized. Consequently, while we consider that the information and opinion given in this Report are sound, PMP Strategy does not guarantee or warrant the conclusions contained in the Report.

4. The Study is valid at the date of completion, which may fall prior to publication. The authors do not take responsibility for any information or events after the Report's delivery date which may affect its contents.

1. Introduction

Context, objectives, methodology

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CISAC has commissioned PMP Strategy to assess the economic impact of Generative AI on creation in the Music and Audiovisual sectors

1 Market size

What will be the market size of Music and Audiovisual outputs generated by AI in 5 years (2028)?

Market penetration and market value (on both B2C and B2B segments) of Gen AI outputs

2 Revenue loss

What will be the associated loss of revenue for creators by 2028?

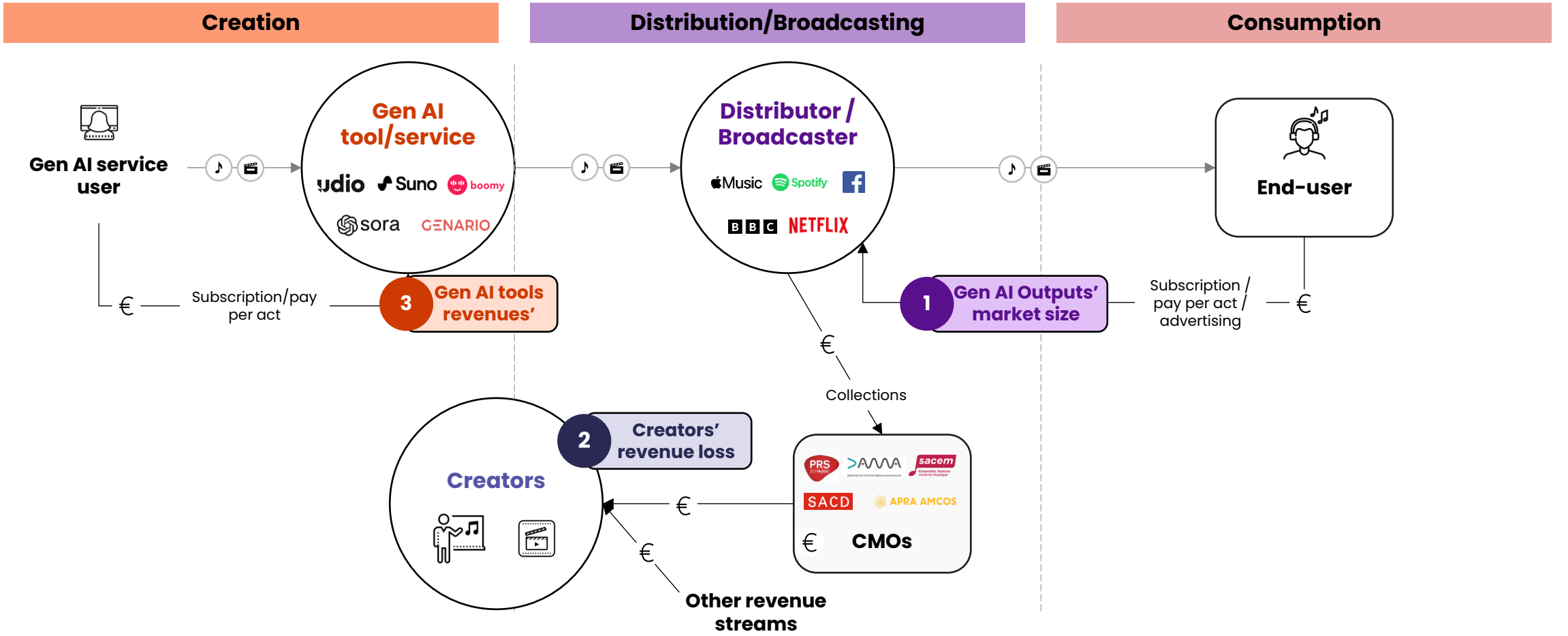
Potential cannibalisation of creator's revenue streams due to the substitution of human works by Gen AI outputs

3 Gen AI services' revenues

What will be the revenues of Gen AI tools/services providers by 2028?

Revenues of Gen AI tools aimed at the general public and professionals, offering either complete outputs generation and/or assistance in the creative process

The evaluation focuses on 1 the value of Gen AI outputs in the market, 2 the associated impact on creators' revenues, and 3 the revenues of the tools enabling outputs' generation



Source: PMP Strategy analysis

The study aims at identifying the main applications of Gen AI in these fields by 2028 and estimating their economic impact

Broad scope	Broad scope of the study: **2 repertoires, international footprint**
Exhaustive approach	**Quantitative and qualitative analysis**, based on interviews and insights from industry experts, existing studies / market data and workshops
Involvement of industry experts	**Strong involvement of CMOs and representatives from the industries**: 50 industry professionals interviewed or involved in workshops
Use cases & market trends analysis	Detailed analysis of **use cases and underlying factors / market trends** determining their evolution over the next 5 years
Two-level impacts analysis	Impact of **market penetration by Gen AI outputs** and **impact on creators' revenues** (both in terms of revenue loss due to cannibalisation and of revenue opportunity)
Transparent methodology	**Transparent methodology** and assumptions built and validated with CMOs and CISAC team

The study is based on experts interviews, internal and external data analyses, and workshops

Expert interviews

+50

…interviews with industry professionals from the Music and Audiovisual sectors between **July and September 2024**

(Creators, Producers, Publishers, Distributors, DSPs, CMOs, Tech & AI companies, institutional players)

Data sources

Public and private players' data sources

- Market data
- Studies and panels on use cases and trends in Generative AI
- Literature and main texts on regulatory context and copyrights issues

Workshops

8

Workshop sessions with **CISAC members** and **industry experts**

50 interviews were conducted with representative stakeholders from the 2 industries, across the value chain

Music

Audiovisual

Other institutions

2. Generative AI overview

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Generative AI overview

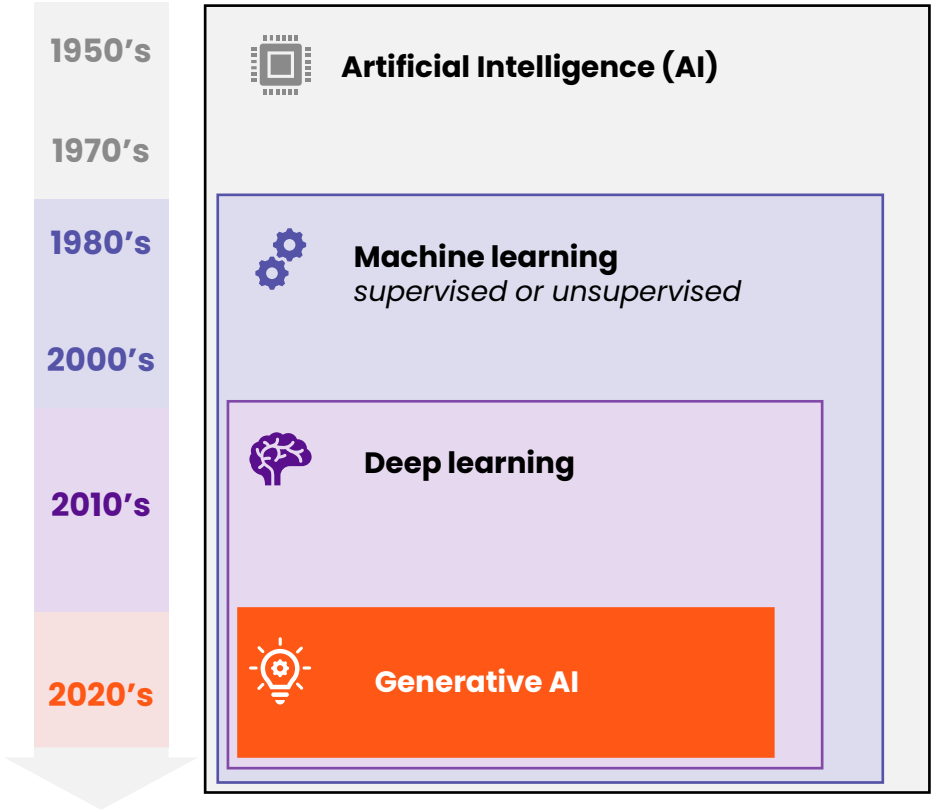
What is Generative AI?

Who are Gen AI services' providers in the field of creative industries and how is the ecosystem structured?

What are the issues at stake in terms of copyright management?

What are the main trends driving the growth of Generative AI in creation, today and by 2028?

Generative AI is the recent pinnacle of 50 years of progress in Artificial Intelligence



AI fields	Associated functionalities	Ex. of applications	
What are the different AI technologies? How do they interlock with each other?	*What are the main characteristics & specificities of each technology?*	*How do they translate concretely?*	
Artificial Intelligence (AI)	Ability given to machines **to mimic human intelligence and cognitive functions** to perform various tasks (problem solving, learning)	*n.a. (research field)*	
Machine learning *supervised or unsupervised*	Ability given to machines **to learn from structured datasets, without explicit programming, to detect patterns and make decisions/predictions**	Customer behaviour prediction	Weather forecasting
Deep learning	Ability given to machines **to learn complex patterns based on artificial neural networks**, from large and unstructured datasets	Facial recognition	Documents reading
Generative AI	Ability given to machines, **notably relying on LLMs**(1), **to learn complex patterns to generate new content**: language, visual and audio, etc.	Image/video creation	Human-like interaction

Key events popularizing AI technological advances

1996 IBM
G. Kasparov, world's chess champion, was defeated by Deep Blue, IBM's developed supercomputer relying on machine learning

2011 IBM
Watson, IBM's developed supercomputer relying on deep learning, won 1st place in US quiz show Jeopardy! against historic champions

2022 OpenAI
OpenAI publicly launches ChatGPT, an AI-powered chatbot engaging in conversational dialogues and providing responses to user queries

(1)Large language models, enabling to perform a variety of natural language processing tasks (generate human-like text, classify text, answer questions, etc.)

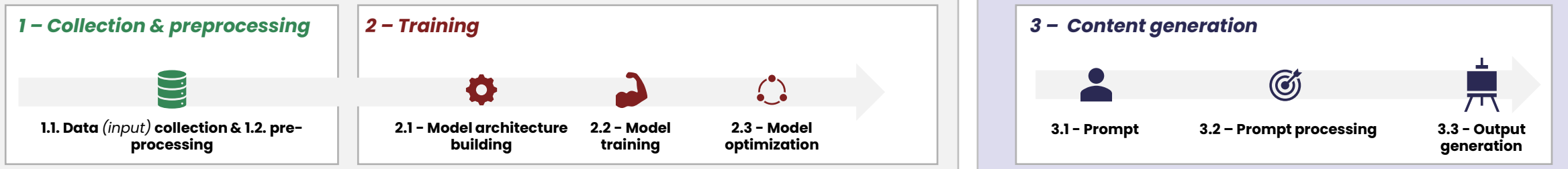
Source: Specialized press, Stanford University, PMPS Analysis

Generative AI models leverage deep learning on large datasets to generate new content (image, text, video, audio) upon the user's instruction

Key steps for the development and use of a Generative AI model

*AI model **development***

*AI model **production** and **use***



1.1. Data collection:

- **Selection of large datasets**, relevant to the type of output to be generated by the program
- Necessary **mass copying** and **storage of data**

1.2. Data preprocessing:

- Preparation of the raw data for analysis (**cleaning**, **normalising**, **labelling**, **enhancing**, etc.)

2.1. Model architecture building

- Selection and building of the **model architecture** (including GANs, VAEs, transformer-based : *see detail on next page*)

2.2. Model training

- Training of the model, taught from the pre-processed dataset
- Unsupervised learning

2.3. Model optimization

- Continuous/iterative **performance evaluation**
- **Adjustments/refinement** of parameters (to minimise difference between the output and real data)
- Improvement of the **model structure**

3.1. Prompt

- **Instruction of a prompt** by the user to the model (in the form of text, image, video or audio)

3.2. Prompt processing

- **Processing of the prompt** by the AI program, **leveraging the training phase**

3.3. Output generation

- **Generation of an output** (new content) in the form of text, visual or audio content

Source: Specialized press, PMPS Analysis

Most Gen AI programs today are based on 3 models - GANs, VAEs and transformer-based models, with specific applications and benefits

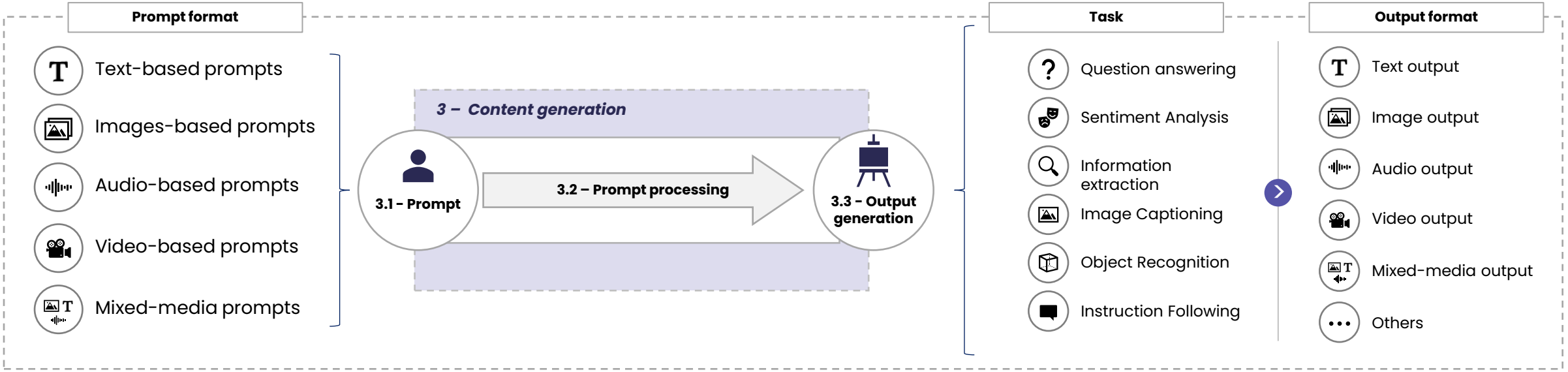
	Description	Main applications	Examples of AI Services
Generative Adversarial Networks (GANs)	Involvement of two neural networks in GANs: • The **generator**, which creates data (produces data so convincing that the discriminator cannot distinguish it from real data) • The **discriminator**, which evaluates it (becoming better at identifying fake data over time)	• Image creation • Realistic photographs generation • Art, and fashion designs • Video game environments • …	• DeepArt.io: Transforms user-uploaded photos into artwork in the style of famous painters using GANs • ThisPersonDoesNotExist.com: Generates lifelike human faces that don't belong to any real individuals
Variational Autoencoders (VAEs)	Two key phases in the VAEs' generative model: 1. **Encode input data** into a latent space 2. **Decode** to **generate new, similar data** Learning of complex data distributions and producing new instances similar to the input data	• Image generation • Synthetic datasets creation • Drug discovery • Music generation or other audio content • …	• Jukebox by OpenAI: Produces music in various genres and styles by sampling and processing audio in latent space • AIVA (Artificial Intelligence Virtual Artist): Composes original music scores suitable for films, games, and other content
Transformer-based Models	Use of **attention mechanisms** to process sequences of data (text or pixels), by focusing on different parts of the data at different times Generation of **coherent and contextually relevant content**	• Natural language tasks (translation, summarization, and text generation) • Image-related tasks • …	• GPT-3 by OpenAI: An advanced language model capable of understanding and generating human-like text (answers to questions and creates content) • DALL-E by OpenAI: Generates imaginative images and art from textual descriptions

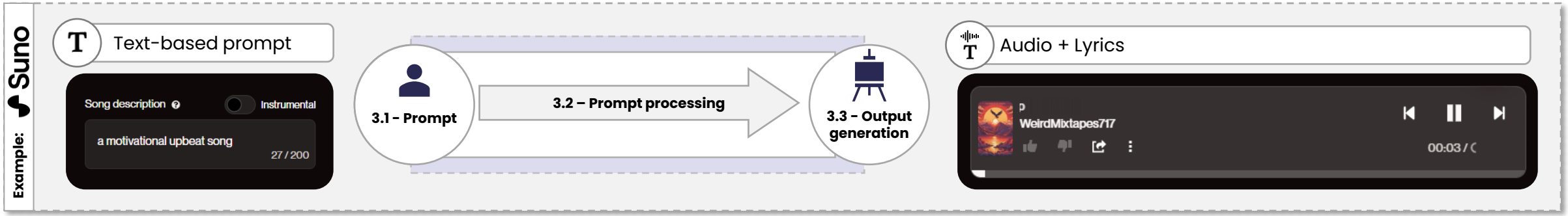
The field is rapidly evolving, with new models being developed regularly – other models include **autoregressive, diffusion models, RNNs, EBMs, and flow-based models**

 Source: Specialized press, PMPS Analysis

Generative AI engines can handle all data formats to generate increasingly diverse contents, and perform a wide range of tasks

Generation process of Gen AI outputs





Source: Specialized press, Suno website, PMPS Analysis

Recent cases have demonstrated the ability to generate content always closer to human creations

Illustration of Midjourney technology performance evolution | 2022 – 2023

Midjourney

Text & Image-based **prompt**

Image

Text prompt

vintage photo, girl smoking cigarette, irina nordsol kuzmina, a hazy memory, pixiv --ar 2:3

Image **output**

Feb 2022	*April 2022*	*July 2022*	*Nov 2022*	*Mai 2023*	***Dec 2023***
Midjourney V1	**Midjourney V2**	**Midjourney V3**	**Midjourney V4**	**Midjourney V5.1**	**Midjourney V6**
Initial version with raw results	Introduction of upscaling and variations, improved coherence	Improved lighting, reflections and realism. Added stylised and quality parameters	Photorealistic quality, ability to generate complex designs	V5.1 to V5.2: Greater realism and aesthetics	Improved image quality and prompt understanding

Source: All Midjourney Versions (V1-V6) Compared: The Evolution of Midjourney - Aituts

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Generative AI tools are thus increasingly questioning the very notion of creation

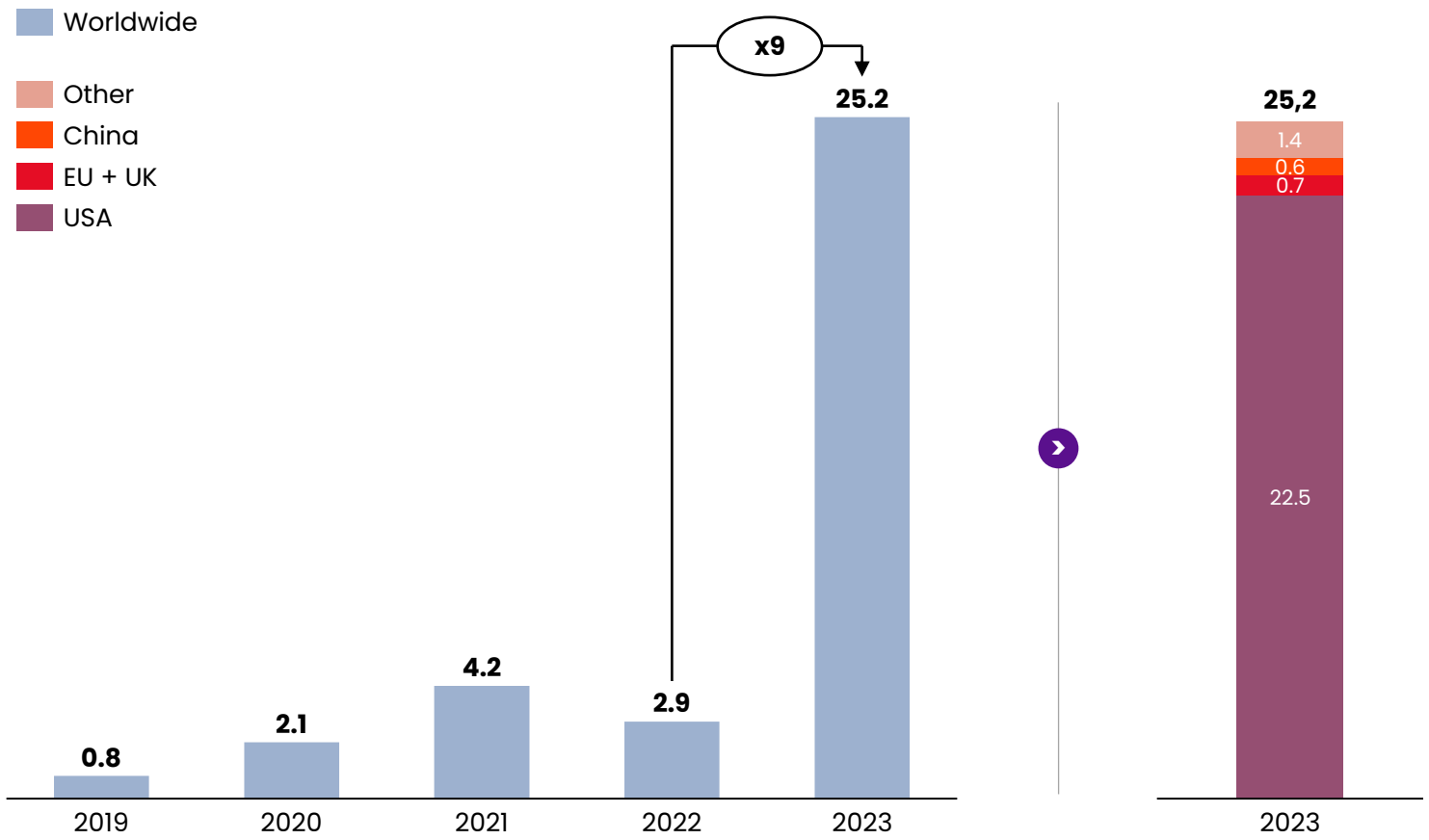
Extract of *Qianqiu Shisong*, China Media Group AI-generated animated series | 2022

- In February 2024, Chinese state broadcaster, China Media Group (CMG), launched the country's **first animated series created with a Generative AI tool**, *Qianqiu Shisong,* which features ancient stories based on traditional Chinese poems and verses, and aims to showcase the country's traditional culture and aesthetics
- The series was produced using CMG's internal **text-to-video model** (Media GPT), trained on traditional Chinese poetry and video and audio material from China Media's catalogue
- The production studio indicated that **artificial intelligence was used at every step of the development and production process**, from design to video generation and post-production

Source: Experts' interviews, specialized press

While total investment in AI has recently slowed down, the Generative AI market is skyrocketing, with an unprecedented surge in 2023 highly driven by the US

Private investment in Generative AI | Worldwide, 2029 – 2023, $Bn



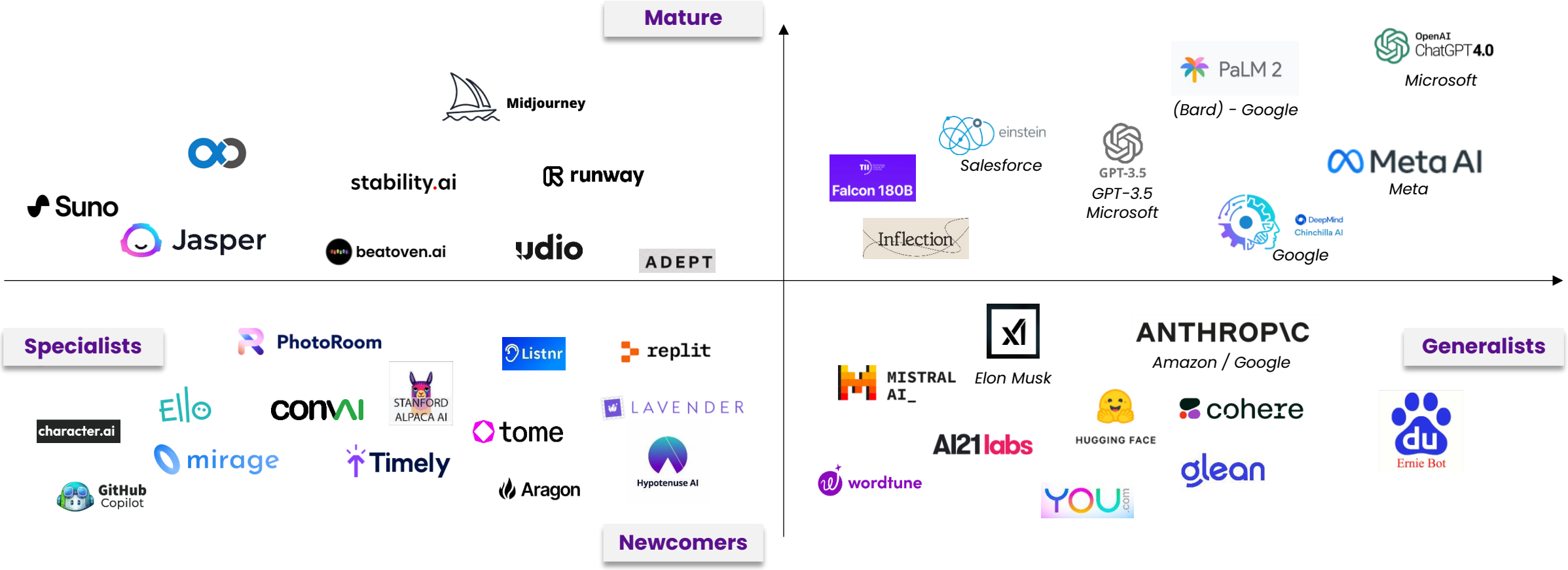
- **Investments in Gen AI have surged recently** as the technology demonstrates its potential to **transform industries** and reshape the business landscape
- **A wide range of startups and Gen AI applications are targeted by investments** in sectors such as technology, telecom, healthcare, financial services, energy, consumer goods, media, culture, and entertainment
- **Generative AI is becoming a key driver of innovation**, with applications that enhance operational processes and create new products and services, impacting nearly every aspect of the modern economy

> Over the past few years, we've witnessed a significant surge in investments in Generative AI by major tech companies and private investors. This trend is driven by the potential of Generative AI to revolutionize jobs in various sectors.
>
> **Tech Company**

Source: Stanford University – AI index report 2024, PMPS Analysis

Generative AI encompasses a fragmented and fast-developing ecosystem, with major generalist players mostly related to GAFAM and multiple smaller solutions serving specific purposes

Generative AI services mapping *(non-exhaustive)*



The ecosystem has seen an exponential growth in the last year, and is polarized around a few mature and powerful big players, mainly related to GAFAM *(~1bn visitors/month on OpenAI.com)*, and a very scattered network of small and specialized newcomers

Source: Specialized press, PMPS Analysis

Generative AI overview

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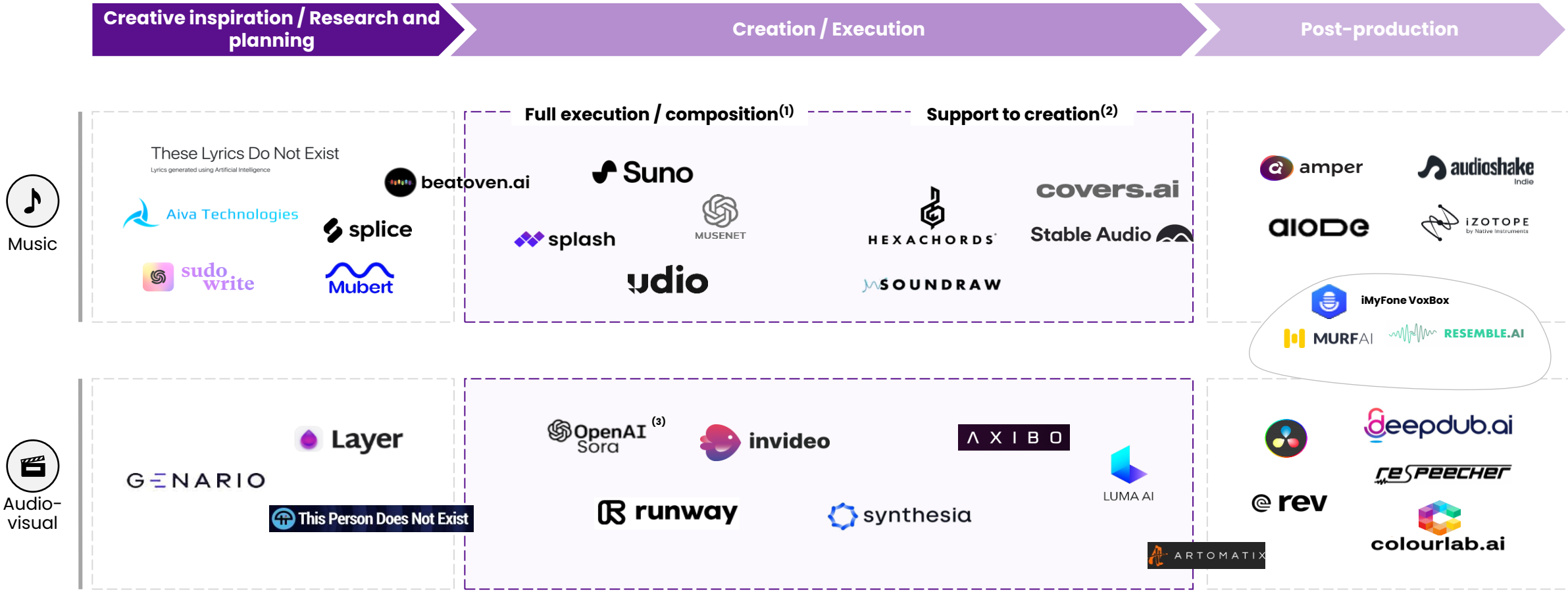
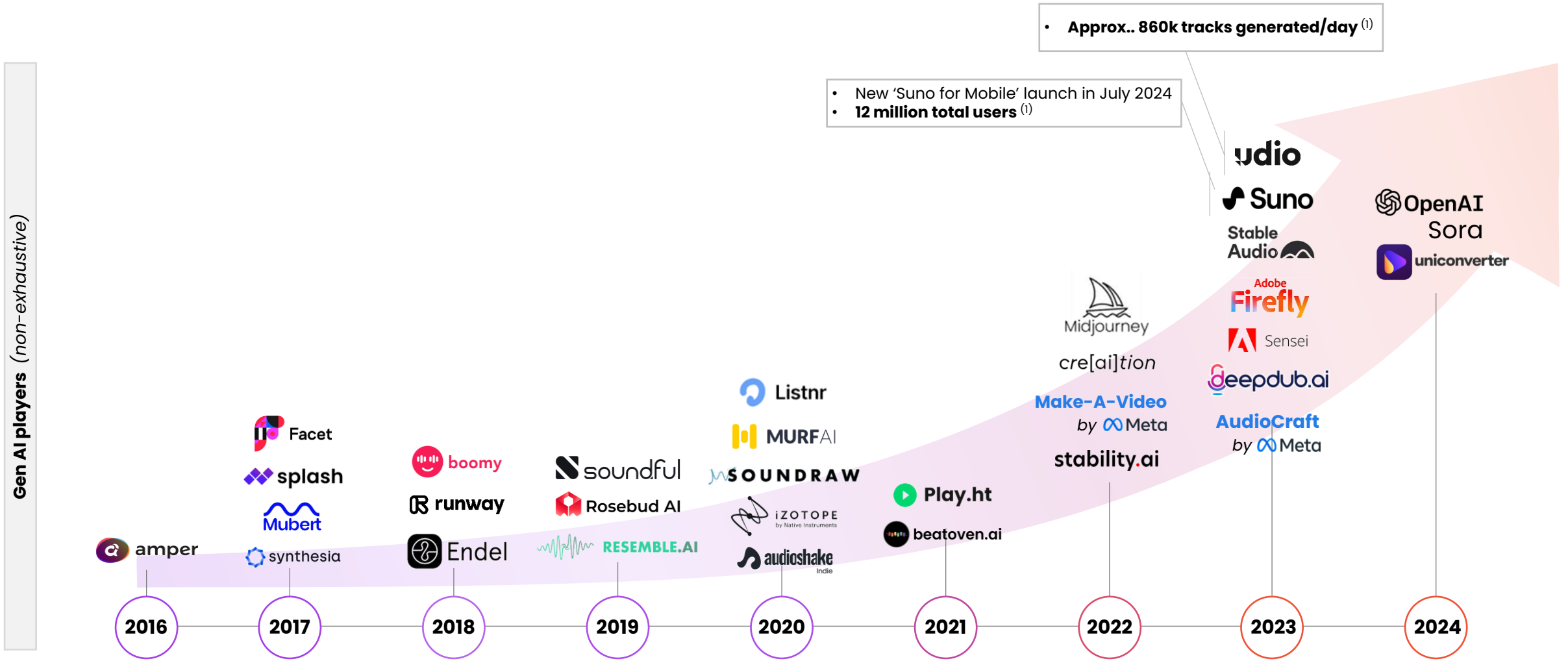
In Music and Audiovisual, Gen AI services have emerged with use cases ranging from assistance on specific tasks to fully automated complete outputs generation



(1) Mainly for general users (entertainment) | (2) Mainly for artists/professionals | (3) Not available yet

Source: Experts' interviews, specialized press

The ecosystem in these fields is mainly made up of very recent, fast-growing newcomers(1)



Note: (1) As of July 2024

Source: Specialized press, PMPS Analysis

Models vary according to the use cases addressed and target audiences, and have not all yet reached their full level of maturity

	Destinated to **mass public use**	Destinated to **industry professionals**	
Main Players	**Consumer tools, also suitable for professional use** Suno, udio, OpenAI Sora, synthesia • Mainly **newcomers**, **tech startups**	**Prosumer tools** beatoven.ai, boomy, invideo, runway • **Newcomers** / **tech startups** • **New tools** / **functionalities of traditional players**	**Professional tools/software** Layer, deepdub.ai, NVIDIA StyleGAN
Services/ Key features	• Mainly **complete prompt-to-output generation** (images, video, music)	• **Prompt-to-output** generation • **Gen AI tools / functionalities to automate specific tasks**	• **Gen AI tools / functionalities to automate specific tasks** :, mastering, editing, image enhancement, …
Economic model/ offer	• Mainly **free-use** and **freemium** (subscription-based) models • Revenues driven by **ads**, **external investments** and **subscriptions (freemium models)**	• **Free-use** and **freemium** (subscription-based) models • **Licenses** models	• **Mainly Licenses** (packages' purchase) models

Note: (1) Experienced amateurs

Source: Experts' interviews, specialized press

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The use of Gen AI in creative industries raises two main issues related to copyright management

AI models' **inputs**

- To what extent AI models have been **trained by using copyrighted works in their datasets**?
- How can creators be **remunerated for the use of their works to train Gen AI models?**
- What will be the implications of the increasing **use of synthetic data**?

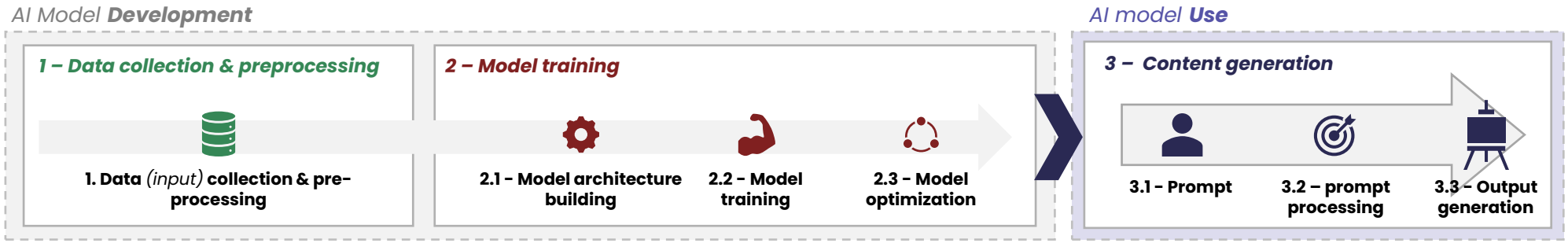
AI models' **outputs**

- **Do Gen AI outputs infringe copyright on existing works?**
  - e.g., creation of works "in the style of"
  - Who is/should be liable in case of copyright infringement?
- **What could be the ownership and "copyrightability" of Gen AI content?**
  - What can/should be considered as Gen AI content?
  - Should Gen AI outputs be protected? Who would own the rights on Gen AI outputs?

Source: Experts' interviews, specialized press, PMPS Analysis

There are widely varying degrees of transparency in the operation and construction of AI models

SUNO vs. JEN AI vs. Genario: a comparison of copyrights concerns along the Gen AI supply chain



	1 – Data collection & preprocessing	2 – Model training	AI model Use – 3 – Content generation
Suno	• No transparency on dataset • No compensation / licensing of the data used for training	• No publication or declarations on model functioning	• Outputs' ownership to Suno for free subs., and to users for Pro/Premier subs • No verification of the outputs
JEN	• Model trained on licensed catalogues (Fairly Trained certif.) • No licenses with creators' representatives	• Publication of research paper on how the model works	• Outputs' ownership to the user • Audio recognition and copyright identification of outputs
GENARIO	• License with SACD (audiovisual CMO) to remunerate authors for the use of their works in the models' training	• Publication of research paper on how the model works	• Outputs' exclusive ownership to the user • No outputs used to train the model

> When asked about OpenAI's training data sets, CTO Mira Murati responded: **"We used publicly available data and licensed data" .** However, publicly available data doesn't mean copyright-free data (ex: Youtube videos).

 Source: Specialized press, PMPS Analysis

The performance of Generative AI models is closely tied to their training datasets, ranging from in-house data to AI-generated synthetic data, raising copyright concerns

	Internal user generated content/data	External data source		AI-generated data source
	In-house data	*Public data/Open source*	*Proprietary*	***Synthetic** data source*
	*Used to **tailor models** to specific user base*	*Used for the **quantity** of resources available*	*Used for the **quality** of the catalogue*	*Used for the **constrained-free offer** : logistics, privacy and copyright etc.*
Catalogues & Players *(non-exhaustive)*	*User-generated content* Google, Spotify, YouTube	*Public datasets*: LAION, IMAGENET, Ffhq Dataset, COCO, FMA *Open-source repositories*: Sketchfab *Available via* Hugging Face	*Copyrighted works catalogues* Warner Music Group, shutterstock, Universal Music Group, BnF, Sony Music, gettyimages, Adobe Stock	*AI-generated content* datacebo, SDV, MOSTLY AI, CVEDIA
Specificities & risks	• Highly **relevant** and **personalized** datasets • Enables to improve user **engagement** and **satisfaction** • **Privacy** concerns • **Data bias** reflecting user base	• Broad **coverage** and **cost effective** • Promotes **transparency** and **reproducibility** • **Variable** quality and **reliability** • Potential for **outdated** or **irrelevant** data	• High **accuracy** and **reliability** • **Domain-specific** insights • **Expensive data** • **Licensing** restrictions • Potential **ethical concerns**	• **Cost** and **time efficient** (generated faster and more affordably) • **Non-copyrighted** material • Data **availability** • **Consistency** and control

- As **synthetic datasets** become more widespread, **transparency issues in the training process of Gen AI models** are becoming increasingly urgent
- However, **AI models will always need non-synthetic, human-made data for** bias mitigation, renewed creativity and staying in touch with current trends

 Source: Experts' Interviews, Specialized press, PMPS Analysis

Industry players have started taking legal action against Gen AI services for the unauthorized use of their catalogues in models training

Music

1. Major music groups vs. Suno & Udio

Warner Music Group, Universal Music Group, Sony Music vs. Suno, Udio

- In June 2024, Universal, Warner and Sony filed federal copyright infringement lawsuits against AI music generator platforms Suno and Udio.
- **The Majors accuse the platforms of "mass infringement of copyrighted sound recordings copied and exploited without permission."**

2. Majors & music groups vs. Anthropic

Universal Music Group, ABKCO, concord vs. ANTHROPIC

- Universal Music, Concord and Abkco have filed a copyright infringement lawsuit against the AI start-up Anthropic.
- They accuse the AI company **of using their artists' lyrics without permission to generate near-identical copies through its AI model Claude.**

Other examples

3. New York Times vs. ChatGPT

The New York Times vs. ChatGPT

- The New York Times filed a lawsuit against OpenAI and Microsoft for copyright infringement, **claiming that millions of its articles were used without authorization**
- These works were allegedly used to **train AI technologies like ChatGPT**, which now **compete with the newspaper as a source of reliable information**

4. Artists vs. Stability & Midjourney

vs. stability.ai, Midjourney, runway

- A trio of artists (Sarah Andersen, Kelly McKernan and Karla Ortiz) filed a lawsuit against AI companies **Stability AI and Midjourney** for **copyright infringement**
- Several artists have joined the legal action, including other AI services in the prosecution: **DeviantArt** and **Runway AI**

- In addition to legal action taken against Gen AI services, CMOs have started to **establish opt-out mechanisms to prevent the training of Generative AI models using copyrighted works of their members** (e.g., Sacem for Music)
- However, these mechanisms **only apply to future training of AI models** and are **made possible by laws mandating transparency** in the training processes of AI models

Source: Specialized press, Music Business Worldwide, Experts' interviews, PMPS Analysis

Overall, the regulatory framework is still in progress and remains heterogeneous across regions

Non-exhaustive list

United States

Generative AI Copyright Disclosure Act (April 2024):

A proposed law requiring AI companies to submit a list of all copyrighted works used for training their AI models

US Copyright Office Guidelines (March 16, 2023):

Clarified the necessity of human contribution to qualify for copyright protection, stressing that tools like AI can be part of the creative process, but human control over the expression is essential

Europe

Directive on copyright and neighbouring rights in the digital market (April 2019):

Directive allowing text and data mining (TDM) necessary for AI training under certain conditions:

- Article 3: Allows data mining for scientific purposes without special conditions.
- Article 4: Allows data mining for all purposes, including commercial, provided access to the data was lawful and rightsholders did not opt out

AI Act (April 16, 2024):

Introduces several obligations for AI systems:

- Ensuring respect of copyright, including for open-source foundational models
- Publishing detailed summaries of works used for AI training
- Identifying AI-generated content as such
- Extraterritorial application, effective from August 1, 2024, with phased implementation until 2027

Council of Europe Framework Convention on AI (May 17, 2024):

Focuses on respecting human rights in AI development, emphasizing transparency for enforcing intellectual property rights

Rest of the world

Guidance for Gen AI in education and research (UNESCO, Sept. 2023):

Calls for immediate actions and long-term policies to regulate the use of Gen AI in education & research, including text, image, video and music generation

Copyright Act – Art. 30-4 (Japan, May 2018):

Copyrighted works can be used in the training of AI models without requiring a license. Rightsholders do not have the option to opt out, and there is no obligation for transparency

Gen AI governance framework (Singapore, March 2024):

Advises policymakers to clarify the application of existing personal data laws to Generative AI. Aims to foster trusted Generative AI development.

AI policy on regulations & ethics (Israel , 2023):

Focuses on responsible AI innovation. Emphasizes on "soft regulation" with sector-specific guidelines. Aims to respect the rule of law, fundamental rights and public interests.

Legend

Mainly focused on input issues | Mainly focused on output issues

Source: Expert interviews, specialized press

Tools are also being developed to support industry players by helping them identify copyrighted works used as inputs, and detect Generative AI outputs

Input

Detection of copyrighted works used as inputs

Objective: Analyse Gen AI models to detect if copyrighted content has been used in their training

Method: Compel models to provide specific copyrighted works as outputs, with prompts designed to induce hallucinations, thus proving they have been used in the training process

Challenges: Difficult to scale/industrialize the process

Output

Detection of outputs generated by AI tools

Objective: Scan specific works or entire catalogues to identify whether they have been generated by AI

Method: Identify Gen AI models biases and patterns (usually specific to each model) and scan images/music/video catalogues to identify whether they have been AI-generated

Challenges: Detection tools need to be regularly trained on popular Gen AI models to ensure they remain performant

Example of tools

Spawning

Spawning AI is developing solutions to help identify whether a visual work has been used as Gen AI tools inputs (Have I been Trained?), help block AI web scrapping and enforce opt outs

ircam amplify

Ircam Amplify has developed a tool (AI-Generated Detector) allowing to identify and tag Gen AI musical outputs

DEEZER

Deezer is currently developing tools to:

- Identify whether a Gen AI model has been trained on specific tracks
- Detect music tracks generated by the world's largest music-generating LLMs

 Source: Expert interviews, Specialized press

Generative AI overview

What is Generative AI?

Who are Gen AI services' providers in the field of creative industries and how is the ecosystem structured?

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What are the main trends driving the growth of Generative AI in creation, today and by 2028?

The adoption of Generative AI tools and outputs in creative industries will be determined by the strategies and behaviour of players across the value chain

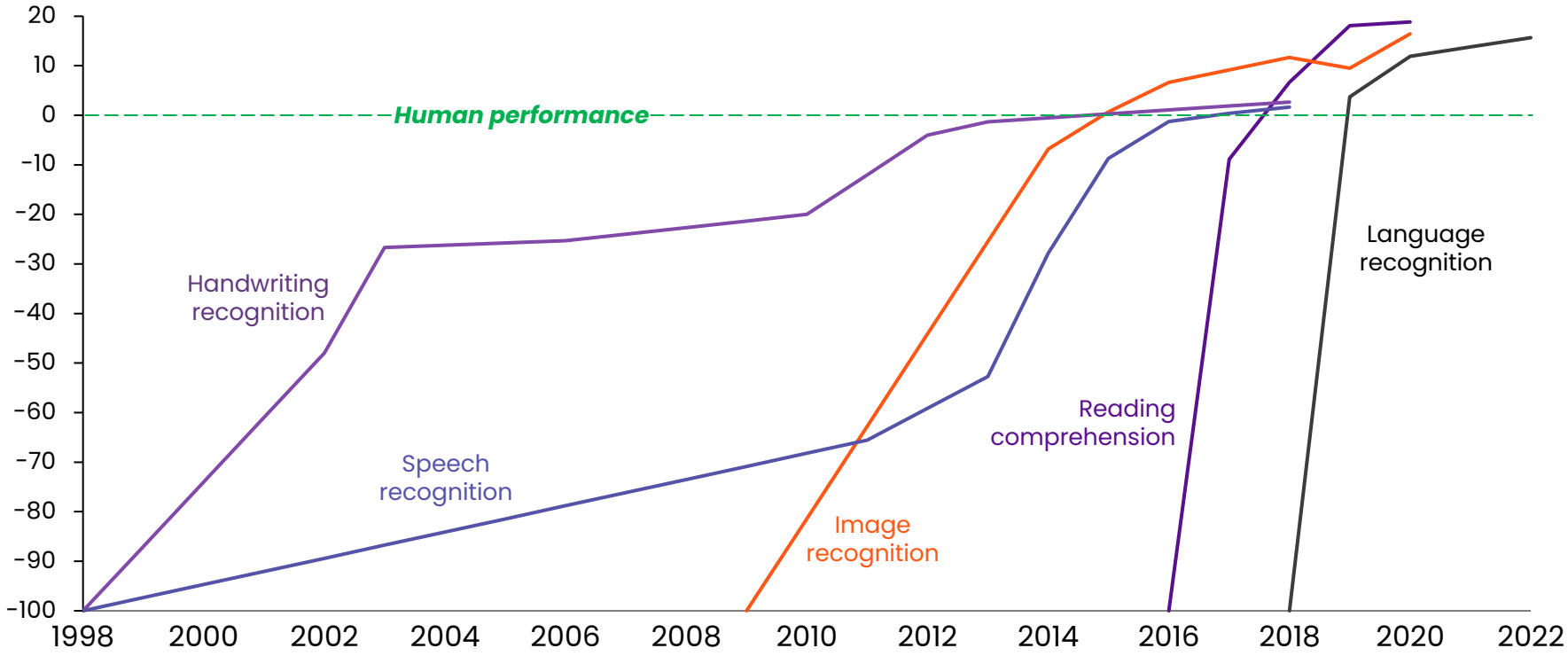
Positioning in the value chain	*Main drivers*	*Impact on Gen AI adoption*
Gen AI providers/Tech companies	**Technological progress**	• Rapid technical evolution of Generative AI models is expected to continue in the coming years, enhancing their capabilities beyond simple text or image generation to more complex, multi-modal outputs • Higher quality, more diverse, and personalized outputs, opening new opportunities across multiple industries
Creators	**Growth of the creator economy**	• Continued growth of user-generated content on social media, fostering the adoption of Gen AI tools to support content creators • Further reduction of the barriers to entry for creation in all creative industries driven by Gen AI tools
Consumers/ End-users	**Evolution of consumer habits**	• Growing demand for interactive, on-demand, and contextually relevant content reshaping consumption • Increasing trend toward passive content consumption, where digital platforms curate and recommend content to users rather than users actively selecting it themselves, with Gen AI likely to play a pivotal role in driving this shift
Distributors/ Broadcasters & B2B players	**Strategy and positioning of traditional players**	• Shift in traditional players' strategies and positioning to adopt Generative AI for competitiveness, in all industries • Integration of Generative AI by players across all segments of the creative industries' value chain: to introduce new offers, optimise content production and distribution, and renew business models
Legal bodies/CMOs	**Regulatory environment and ethical issues**	• Evolving regulatory frameworks addressing intellectual property, data privacy, ethics, and cultural diversity issues as Gen AI becomes more widespread, potentially impacting its growth • Increased awareness of end users regarding ethical issues related to copyright, fair pricing, and the proper remuneration of authors

 Source: interviews with industry professionals, Specialized press, PMP Strategy analyses

Recent technological progress have enabled AI and Gen AI models to outperform human performance in all basic capabilities, laying the foundation for continued progress in the coming years

Test scores of AI systems on various capabilities relative to human performance | 1998 - 2022

Within each domain, the initial performance of the AI is set to –100. Human performance is used as a baseline, set to zero.



- AI performances are above human for every **basic** (non-complex) **capabilities** analysed
- The later a capability started to be implemented, the faster it reached human-level performance:
  - **Speech recognition**: 19 years
  - **Handwriting recognition**: 17 years
  - **Image recognition**: 7 years
  - **Reading comprehension**: 1 year
  - **Language recognition**: less than 1 year
- Technological advancements **have paved the way for Generative AI** to revolutionize various sectors and domains, **including the creative industries**

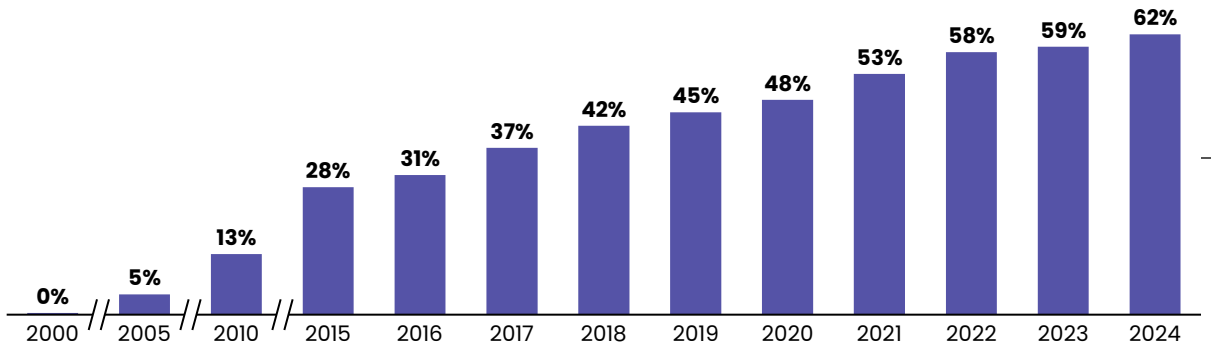
The **growth of Generative AI is expected to accelerate even further** in the coming years, with **widespread adoption and advanced technical capabilities anticipated by 2028**, driven by substantial investments in Gen AI models and their associated providers

Source: Kiela et al. (2023) & Our World in Data, PMP Strategy analysis

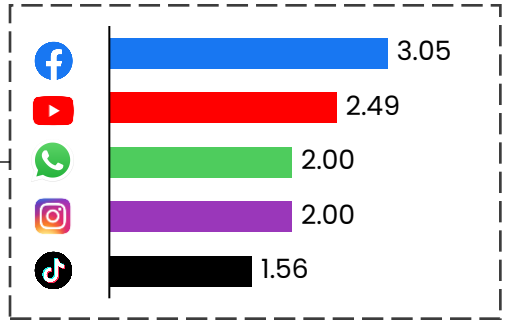
The significant increase in user-generated content on social media will likely drive the high adoption of Gen AI

Social media penetration worldwide and creator economy

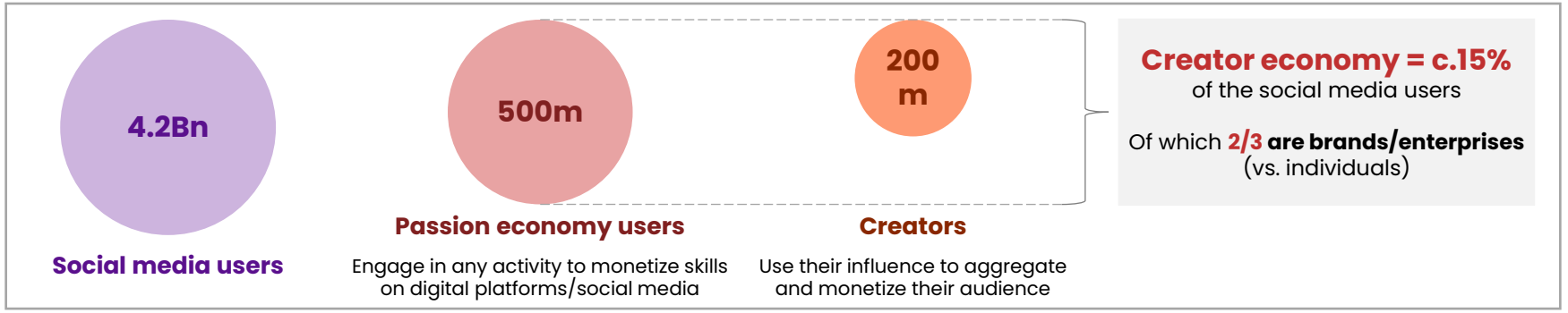
Social media penetration rate | %, Worldwide, 2000-2024



Top 5 social media in number of users | in Bn users



Number of players in the creator economy in social media & split by type of players



- The widespread adoption of social media has **driven the growth of the creator economy** across all disciplines
- The creator economy has been boosted mainly by **influencer marketing**, **content monetization**, **e-commerce** and **social selling**
- Approximately **15% of the 4.2Bn users of social media** (both individuals and businesses/brands) worldwide are considered part of the creator economy
- These creators, and particularly enterprises, are **more inclined to use Gen AI tools to produce more personalized content for their users at scale**
  - e.g., Nike and Coca Cola using Gen AI algorithms to create personalized and engaging advertising campaigns

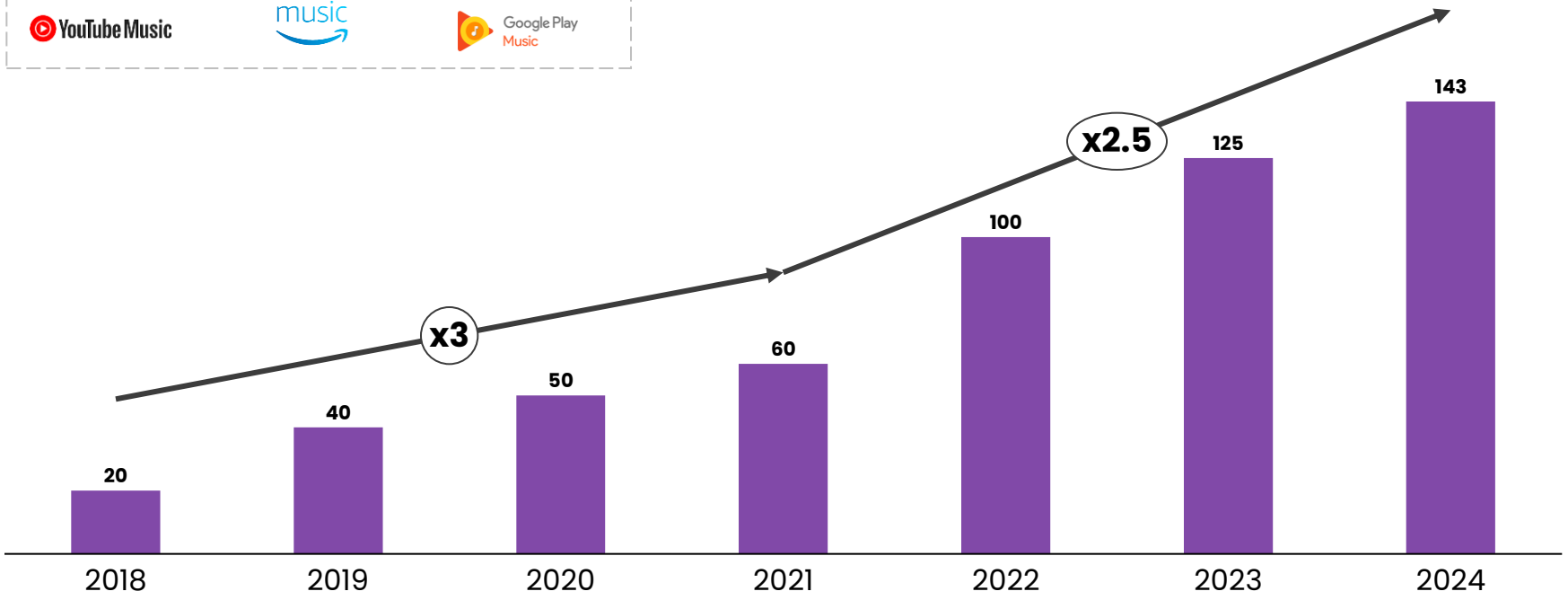
 Source: Specialized press, Experts' interviews, PMPS Analysis

New tools, formats, and distribution channels have significantly lowered barriers to entry in music creation in the last decade, a trend which will be further fostered by Gen AI tools

Approximate average number of tracks uploaded to DSPs each day | thousands, per year, 2018 - 2024

Music streaming providers (non-exhaustive)

Spotify, DEEZER, Music, YouTube Music, music, Google Play Music



- Music streaming platforms have **favoured the creator's economy in the music field**, with:
  - **Lower barriers to entry**: easier distribution for independent artists without the need of traditional record label
  - **Increased visibility and reach,** through algorithms and curated playlists
  - **Monetization opportunities**, through the creation of a new revenue stream with the streaming royalties
  - Access to **data & analytics**, **community & networking**, **creative freedom**…

The **streaming platforms and other digital players** (e.g., music distributors like CD Baby), combined with the advancements in Generative AI tools, are empowering artists to **produce, distribute, and monetize** their **music** more easily than ever before

 Source: Music Business Worldwide, PMPS Analysis

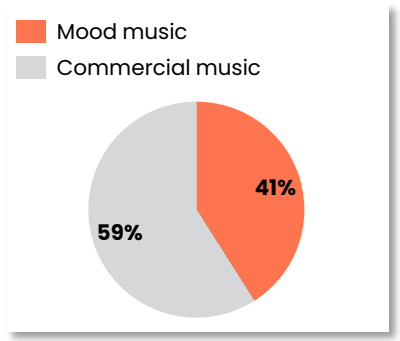
Growing demand for interactive, on-demand, contextually relevant content, and the increasing trend toward passive consumption is driving the adoption of Gen AI by streaming platforms (1/2)

Passive music consumption (mood playlists) in streaming platforms | Focus on Spotify

Spotify

Rank	Playlists' name	# of subs
1	Today's Top Hits	34M
2	Top 50 - Global	17M
3	RapCaviar	15M
4	Viva Latino	14M
5	Rock Classics	11M
6	Baila Reggaeton	10M
7	All Out 2000s	10M
8	Songs to Sing in the Car	10M
9	All Out 80s	10M
10	Beast Mode	10M

Rank	Playlists' name	# of subs
89	This Is Michael Jackson	3M
90	This Is One Direction	3M
91	Deep House Relax	3M
92	Hype	3M
93	Hot Hits Deutschland	3M
94	Warm Fuzzy Feeling	3M
95	Coffee Table Jazz	2M
96	Power Hour	2M
97	Intense Studying	2M
98	Chill Vibes	2M



- Music streaming platforms increasingly offer **curated playlists tailored to specific moods and activities**, enhancing user engagement
- These **mood playlists** provide a seamless listening experience that **requires minimal intervention from the user**
- End-consumers on streaming platforms are **increasingly gravitating towards passive music listening**, driven by **convenience**, **personalization**, and **discovery**
- In the top 100 Spotify playlists in terms of subscribers, **41%** are considered as **functional/mood playlists** (e.g., Morning Coffee), **favouring passive listening**

Legend
Mood playlists/passive listening

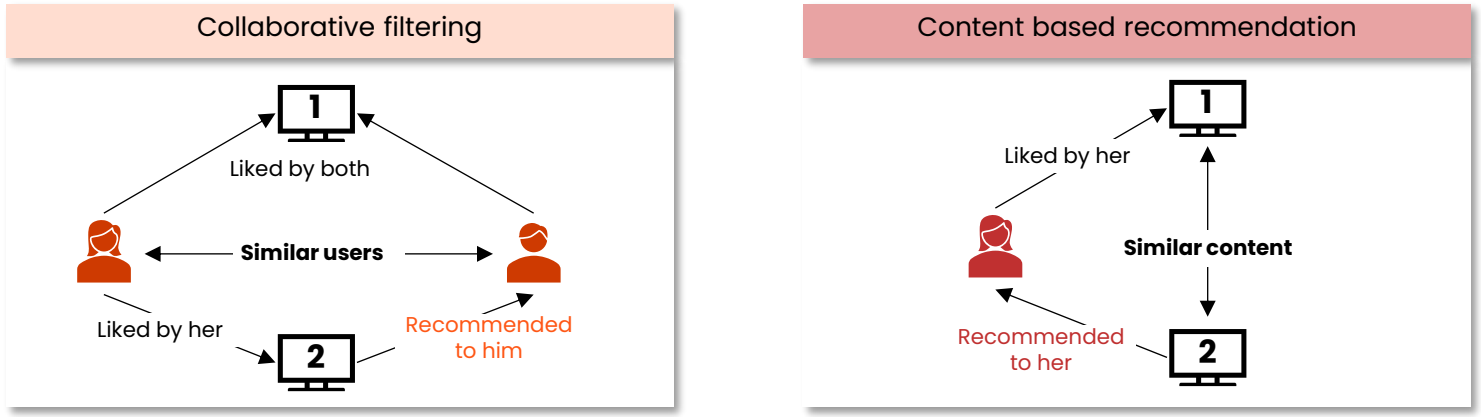
 Source: Music Business Worldwide, PMPS Analysis

Growing demand for interactive, on-demand, contextually relevant content, and the increasing trend toward passive consumption is driving the adoption of Gen AI by streaming platforms (2/2)

Video streaming recommendation | Example of Netflix NETFLIX

75% of Netflix viewership is driven by its **recommendation engine**

Diagram on **Netflix recommendation system : Collaborative filtering** vs. **content based**



- Netflix recommendation's algorithm includes :
  - **Data collection**: viewing history, user interactions, and demographic data
  - **Collaborative filtering**: user-user and item-item
  - **Machine learning models** : identification of pattern in the user preferences
  - **Content analysis** : metadata analyses, natural language processing
  - **Real-time personalization**
- This **directly influences user consumption behaviour**: increased engagement and enhanced user experience

- Consumers' appetite for recommended and personalised content is a **key driver for the use of Generative AI**, enabling even more advanced playlists and content with unlimited **tailored content, down to the individual level**

 Source: Netflix reports, Specialized press, PMPS Analysis

Stakeholders across the entire value chain of the creative industries are increasingly adopting Gen AI to optimize content production and distribution and to renew their value proposition

Examples of current and projected Gen AI use cases across the main segments of the creative industries' value chain

Artworks/Content aggregators

- **Music:** Music libraries using Gen AI to generate large number of new tracks, increasing catalog options and reducing prices
- **Audiovisual:** Stock photo/video agencies using Gen AI to create short videos content, cutting costs and speeding up availability

Commissioners of artworks/content

- **Music:** Press agencies using Gen AI to create background scores, lowering production costs
- **Audiovisual:** Advertising agencies using Gen AI to create personalized video ads, reducing costs and time

B2B distributors

- **Music:** Audiovisual production companies using Gen AI to produce background scores in audiovisual content, lowering production costs, mainly in lower budget works
- **Audiovisual:** Brands using Gen AI video outputs on social media, enhancing end-consumer experience with more tailored and personalized content

B2C distributors

- **Music:** Streaming platforms integrating Gen AI outputs in mood playlists, to create more tailored content with no copyright
- **Audiovisual:** VOD platforms using Gen AI videos to create trailers, cutting production costs

 Source: Specialized press, Experts' interviews, PMPS Analysis

3. Economic impact in Music and Audiovisual creation

CISAC

PMP Strategy
positive impact

Gen AI Economic impact

Approach and Methodology

What will be the economic impact of Generative AI in Music by 2028?

What will be the economic impact of Generative AI in Audiovisual by 2028?

CISAC has commissioned PMP Strategy to assess the economic impact of Generative AI on creation in the Music and Audiovisual sectors

1 Market size

What will be the market size of Music and Audiovisual outputs generated by AI in 5 years (2028)?

Market penetration and market value (on both B2C and B2B segments) of Gen AI outputs

Key figure 1

2 Revenue loss

What will be the associated loss of revenue for creators by 2028?

Potential cannibalisation of creator's revenue streams due to the substitution of human works by Gen AI outputs

Key figure 2

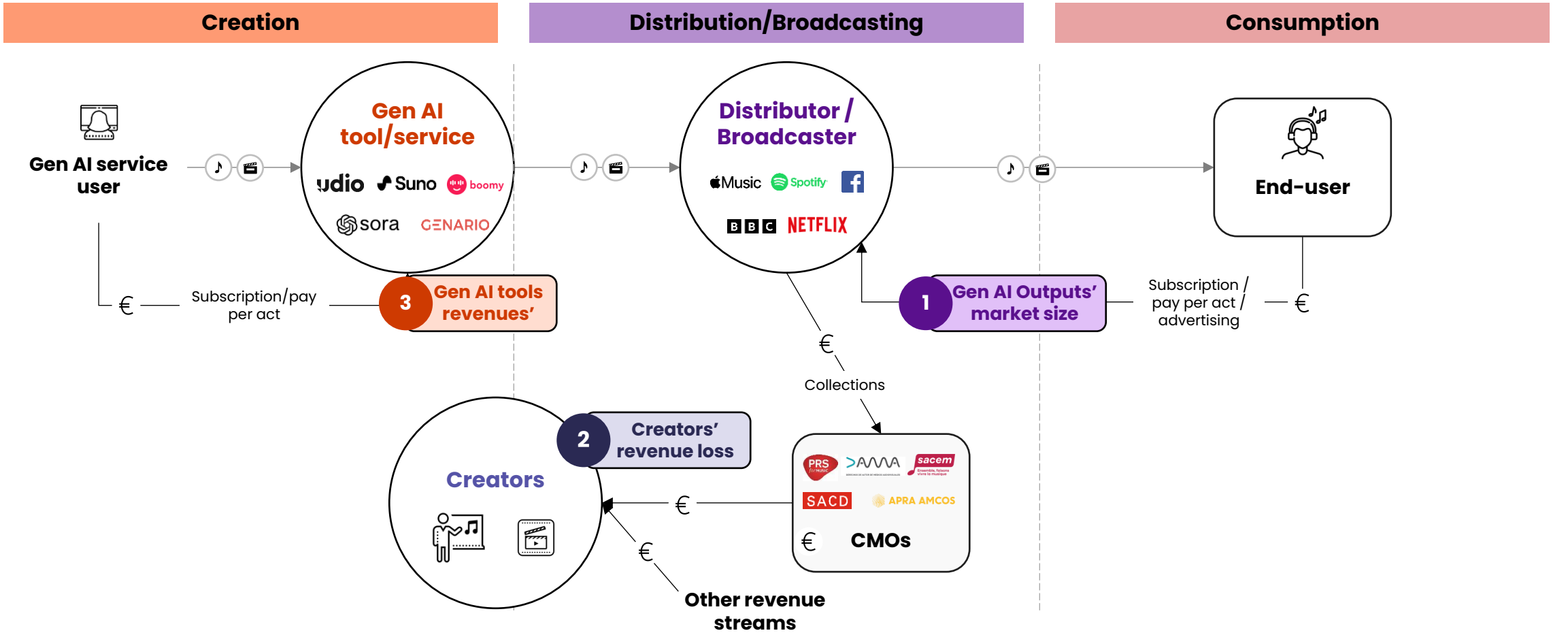
3 Gen AI services' revenues

What will be the revenues of Gen AI tools/services providers by 2028?

Revenues of Gen AI tools aimed at the general public and professionals, offering either complete outputs generation and/or assistance in the creative process

Key figure 3

The evaluation focuses on 1 the value of Gen AI outputs in the market, 2 the associated impact on creators' revenues, and 3 the revenues of the tools enabling outputs' generation



 Source: PMP Strategy analysis

The methodology relied on qualitative and quantitative analyses, fuelled by interviews with industry players and workshops with CMOs

Qualitative approach

Use cases identification and prioritisation

- **Identification of the most significant generative AI use cases** for creation in both fields
- Prioritisation of these use cases based on their potential **adoption level** to determine the ones with the most **significant economic impact**

Quantitative approach

Economic impact estimation

- **Qualitative analysis used to feed the quantitative part** (market hypotheses and impact estimates)
- **Identification of market segments where generative AI has a significant impact**
- **Translation of qualitative assessments into quantitative estimates**

 Source: PMP Strategy analysis

Generative AI has numerous applications in the filed of creative industries and can intervene at all stages of the creative process, from ideation to post-production

Generative AI use cases examples in Music and Audiovisual *(non-exhaustive)*

Scope of the study

	Creative inspiration	Research & Planning	Creation/execution	Post-production	Distribution & diffusion
Music	• Melody generation • Lyrics creation	• Trend analysis • Sample discovery	• Collaborative composition • Arrangement optimization • Prompt-to-music generation through AI	• Automated mixing and mastering • Pitch correction • Voice cloning, synthesis	• Playlist recommendation/ optimization • Targeted marketing
Audiovisual	• Screenwriting exploration • Storyboard generation	• Scene visualization • Script analysis	• Animation generation • Special effects creation	• Video editing • Colour correction • Translating/Adapting	• Content recommendation • Audience analysis

 Source: Experts' interviews, specialized press, PMPS Analysis

More generally, use cases fall into 2 categories: fully automated prompt-to-output applications or assistance in the creative process

	Fully Gen AI outputs	Grey area	AI-assisted work creation
	• **Fully automated generation** of musical or audiovisual outputs via the use of Gen AI services • **No human input** beyond the prompt (or marginal intervention)		• **Creation of musical, visual or audiovisual works** with the assistance of Gen AI tools, enhancing human work • **Significant human involvement** in the creative process ("augmented artist")
	• **Prompt-to-song tools** such as Suno or Udio		• Pitch **correction**, **editing**, **mastering**, etc. (AudioShake, iZotope)
	• **Prompt-to-video** tools such as Sora (OpenAI) or InVideo		• Actor **rejuvenation**, video **restoration** & **colouring**, **sound**, **digitalisation**, etc. (Respeecher) • **Prompt-to-script** tools (Genario) • Automated **dubbing-subtitling** (Veed)

- In the **market size calculation**, only fully Gen AI outputs are considered, as **their distribution will affect the market by replacing human-created works**.
- For the **creators' loss calculation**, (i) In the music sector, fully AI-generated outputs will cannibalize creators' revenues in specific market segments; (ii) whereas in the audiovisual sector, complete AI outputs and reduced production budgets due to Gen AI tools (e.g., screenwriting, translation) will lead to revenue losses
- There is **a grey area** where semi-automated works may still be considered as human creations. The study does not aim at estimating the Gen AI contribution in human works

 Source: Experts' interviews, specialized press, PMPS Analysis

Gen AI impact estimation methodology: Market size of Gen AI outputs in 2028

1 Market size

What will be the market size of Music and Audiovisual outputs generated by AI in 5 years (2028)?

i.e. market penetration and market value of Gen AI outputs

Key questions to be answered

- What will be the **Music and Audiovisual market segments impacted by Gen AI use cases** in the next 5 years?
- **What will be the penetration rate and market value** of Gen AI outputs in 5 years?
- **Can we expect an "AI boost"** (additional growth) due to Gen AI?
- **What will be the share of existing players'** (distributors) **revenues** driven by Gen AI outputs?

Calculation methodology

- **Segmentation** of the **Music and Audiovisual distribution markets** (both B2C and B2B – including new Gen AI based services and current distributors)

⬇

- **Estimate of 2023 market size** for all the distribution segments likely to be impacted by Gen AI outputs

⬇

- **Forecast to 2028** based on historical growth and market trends

✖

- Estimate of **Gen AI outputs' penetration rate** for **each segment in 2028** based on the **prioritised use cases**

〓

1 **Market size** of Fully Gen AI outputs by 2028

 Source: PMP Strategy analysis

Gen AI impact estimation methodology: Creators revenue loss due to Gen AI cannibalisation

2 Revenue loss

What will be the associated loss of revenue for creators by 2028?

i.e. risk of cannibalisation of creators' traditional revenue streams

Key questions to be answered

- What would be the **evolution of creators' revenues in the next 5 years without Gen AI**? - based on current remuneration rules and historical trends
- What will be the **share of this revenue at risk due to the cannibalisation** or substitution of human-made works by Gen AI outputs?

Calculation methodology

CMO-collected revenues (for both repertoires)

- **Breakdown of CISAC collections in segments** and **sub-segments**
- **Estimate of 2023 revenues for each sub-segment and forecast to 2028**
- Estimate of **cannibalisation rates** due to Gen AI outputs by sub-segment

Other revenues (only for Audiovisual)

- **Share of the production budget / dubbing-subtitling market going to audiovisual creators/authors**
- Estimate of **cannibalisation rates** due to Gen AI outputs by type of author

2 Potential revenue loss for creators by '28 compared to a no Gen AI scenario

Source: PMP Strategy analysis

Gen AI impact estimation methodology: Creators revenue loss due to Gen AI cannibalisation

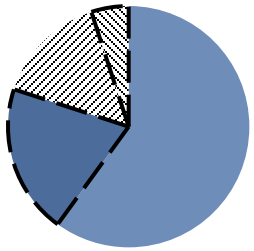
2 Revenue loss

What will be the associated loss of revenue for creators by 2028?

i.e. risk of cannibalisation of creators' traditional revenue streams

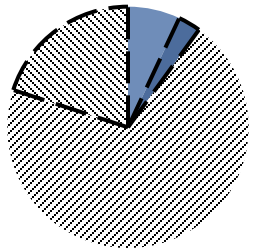
Creators' revenue streams considered for Music and Audiovisual repertoires

Music creators' revenue split



- The perimeter of rights managed by CMOs is very **homogenous between regions/geographies**
- **CMOs collection account for a significant share of creators' revenues**
- For the Music field, the scope for the revenue loss calculation is hence **the CMO-collected revenues**

Audiovisual creators' revenue split



- The perimeter of rights managed by CMOs is very **heterogeneous between regions/geographies**
- **Only in a few countries do CMOs account for a large share of creators' revenues**
- For the Audiovisual field, the **scope has been extended** to capture a better proportion of creators/authors' revenues

Legend

CMO-collected rights
Impact of Gen AI on CMO-collected rights
Rights from upfront payments and other revenues
Gen AI impact on upfront payments and other revenues

 Source: PMP Strategy analysis

Gen AI impact estimation methodology: Revenues of Gen AI services

3 **Gen AI providers' revenues**

What will be the revenues of Gen AI tools/services providers by 2028?

Key questions to be answered

- What will be the **evolution of the Gen AI ecosystem** in the Music and Audiovisual fields by 2028?
- What will be the **market penetration of AI-assisted music and audiovisual/video creation tools** among professionals by 2028?
- **How many fully Gen AI prompt-to-outputs tools will exist by 2028,** and what will be their user base and pricing?
- What will be the **overall revenue generated by both AI assistance and fully prompt-to-output** tools by 2028?

Calculation methodology

AI-assisted creation tools

- **Estimate of the professional Music and Audiovisual software markets** (editing, post-production…) in 2023, forecast to 2028

✖

- **Gen AI penetration rate on this segment**

✚

Full prompt-to-outputs tools

- **Number of services** providing fully automated prompt-to-music tools

✖

- Forecast of the **average number of users and average revenue per user to 2028**

〓

3 Estimated **revenue of Gen AI tools and services** by 2028

 Source: PMP Strategy analysis

Gen AI impact estimation methodology: Revenues of by Gen AI services

3 **Gen AI providers' revenues**

What will be the revenues of Gen AI tools/services providers by 2028?

Gen AI tools and service providers have been split in 2 categories

Music

Full prompt-to-outputs tools

- Prompt-to-songs generator

udio, Suno

AI-assisted creation tools

- Gen AI tools for music ideation, mastering, editing, post-production…
- Includes Gen AI tools providing prompt-to-music as one of their services, but mainly for professionals

iZOTOPE, boomy

Audiovisual

Full prompt-to-outputs tools

- Prompt-to-video complete outputs generator
- Prompt-to dubbing Gen AI providers
- Prompt-to-scripts Gen AI providers

runway, deepdub.ai

AI-assisted creation tools

- Gen AI tools for video ideation, mastering, editing, post-production…
- Includes Gen AI tools providing prompt-to-videos as one of their services, but mainly for professionals

GENARIO, synthesia, LUMA AI, colourlab.ai

 Source: PMP Strategy analysis

Economic impact in Music creation

Approach and Methodology

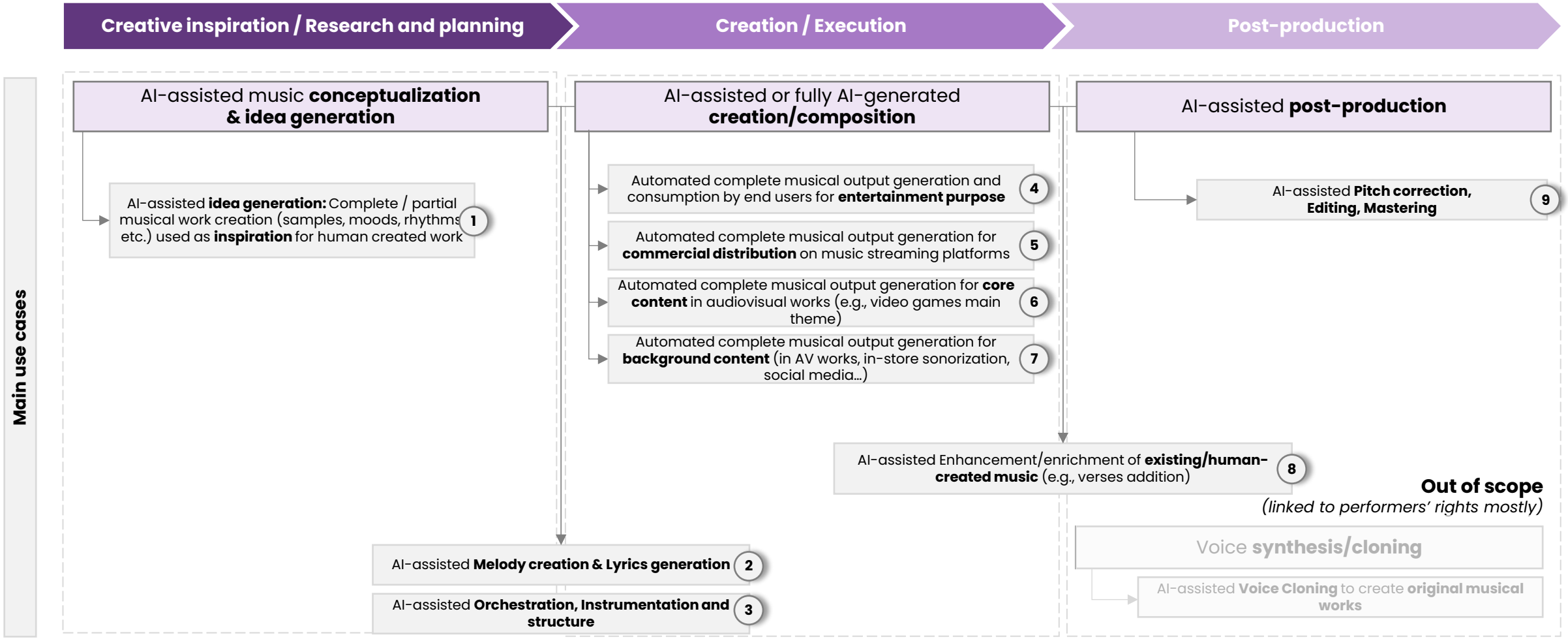
What will be the economic impact of Generative AI in the Music field by 2028?

Main Applications

2028 forecast

What will be the economic impact of Generative AI in Audiovisual by 2028?

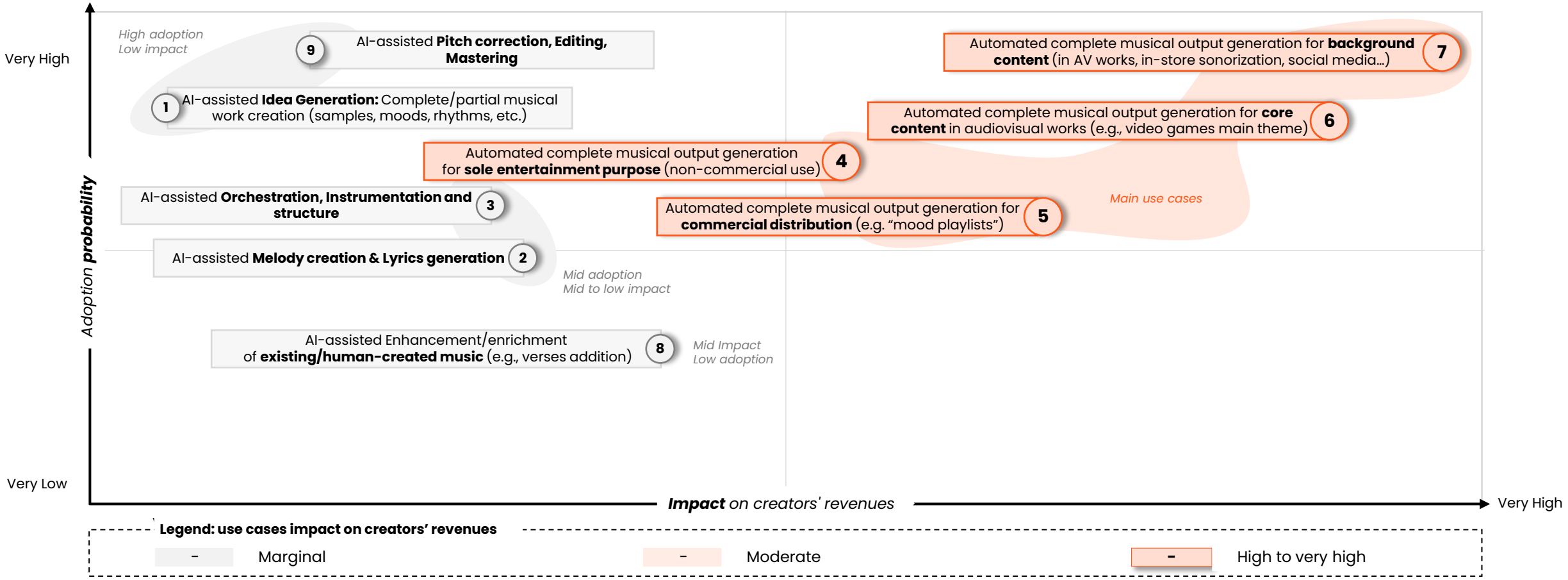
Identification of Gen AI main applications in the music creation process



 Source: Experts' interviews, specialized press, PMP Strategy analysis

Prioritisation of Gen AI use cases in the Music field

Prioritisation of use cases based on expected impact on creators' revenues and adoption probability – Matrix Analysis



 Source: PMP Strategy Analysis

Transformation of music streaming: end-users become music curators

4 Automated complete musical output generation for **sole entertainment purpose** (non-commercial use)

Current application

- **Tools like Suno Audio, designed for the general public,** allow users to **generate and listen to music tracks created from a simple text prompt.**
- For now, these tools are mainly used on an **ad hoc basis** for **entertainment purposes** among friends, colleagues etc.

Current level of adoption/maturity

- **Technology & Output Quality:** The tools are user-friendly and intuitive, but the quality of the outputs is still limited compared to traditional commercial music
- **Usage/Adoption:** Usage remains primarily occasional and for entertainment purposes

2028 potential application

Two possible scenarios :

1. **Tools like Suno and Udio evolve to become new players in the music streaming industry**
2. **Existing music streaming platforms integrate these new AI-powered content generation features themselves**

2028 est. level of adoption/maturity

- **Techno & quality of outputs:** Improvement of the technology leading to increasingly higher-quality outputs
- **Usage/adoption:** Widespread adoption and a shift from occasional, ad hoc use to regular use, similar to traditional streaming platforms

Example

AI-powered platform allowing end-users to both produce and listen to AI-generated music (Suno app, see next page)

Example of service providers

Suno udio

> With the perfecting and democratization of text-to-song and voice cloning tools, end-consumers are moving from simple users to music curators, thus questioning the very notion creator.
>
> **Tech company**

2028 main economic impacts identified

1	Market size / Gen AI penetration	**Market boost** : monetization of these new features (for DSPs) or services (for AI tech companies)
2	Revenue loss	**No direct impact** but dilution of human-created tracks in the overall revenues of streaming
3	Gen AI providers' revenues	**Direct revenues** for Gen AI providers, either directly providing services, or internalized in DSPs

2028 impact on creators' revenues

Source: Experts' interviews, Specialized press, PMPS Scenario Planning

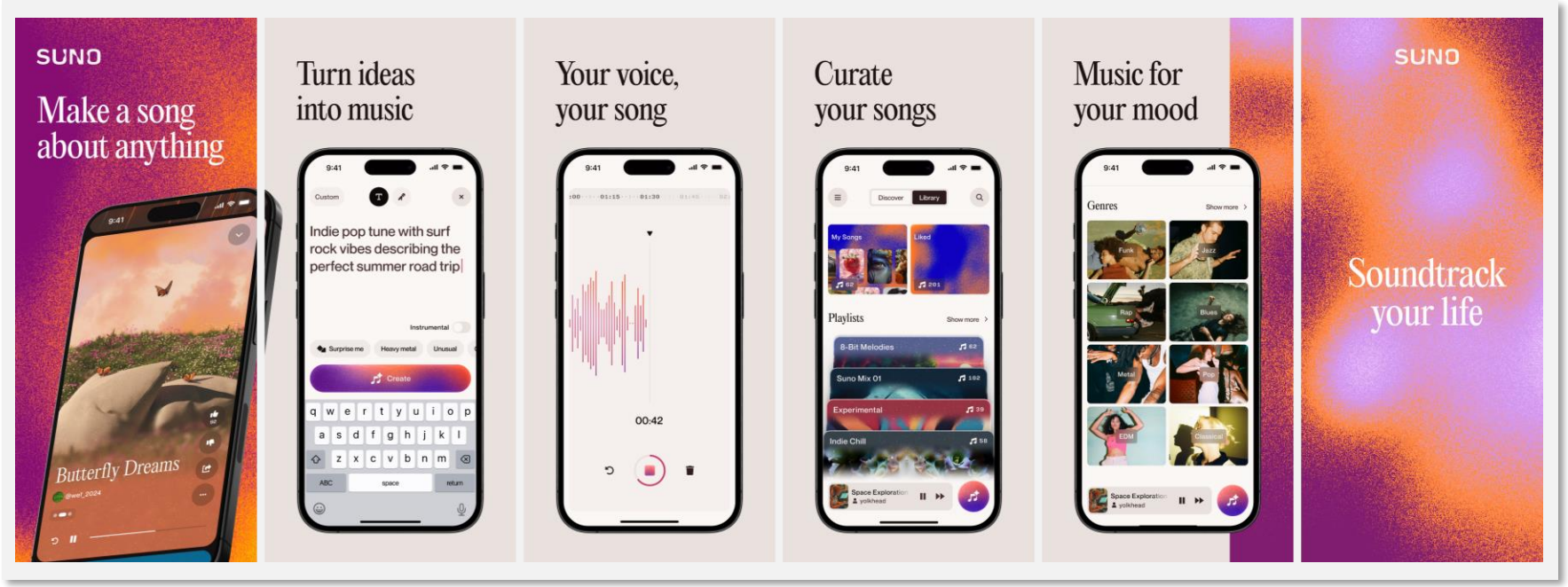
Legend: Low Mid High

Example - Suno's latest app launch transforms passive music listening into an interactive experience

4 Automated complete musical output generation for **sole entertainment purpose** (non-commercial use)

Suno

Suno launched its 'Suno for mobile' app in July 2024, offering enhanced functionalities



'Suno for mobile' promotion – Suno.com

> I suspect that the strategy of both Suno and Udio is to become new streaming platforms. […] where users can engage [with the content], create their own versions of it, republish it and become curators and creators themselves.
>
> **– Music and AI expert**

The Suno mobile app allows users to create and share music in new and innovative ways.

The key functionalities of the app include:

1. **Music Creation**
   - **Text-to-song :** users can generate songs by inputting lyrics or descriptions
   - **Audio recordings :** The app allows the user to record an audio and use it for the song
2. **Music Streaming**
   - **Music curation** : The app provides tools to curate and collect music that the user enjoys from other creators

 Source: Suno.com website

Penetration of AI-generated music on music streaming platforms

5 Automated complete musical output generation for **commercial distribution** (e.g. "mood playlists")

Current application

- Generative AI tools are already being used to **create full music tracks for mainstream distribution** on **streaming platforms**, often included in functional playlists.

Current level of adoption/maturity

- **Techno & quality of outputs:** Current tools can already produce good quality music for such purposes
- **Usage/adoption:** Usage is still limited but the adoption remains difficult to quantify

2028 potential application

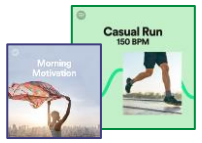
- **AI-generated music could represent a significant portion of mainstream music, particularly in functional music and passive listening** through suggested playlists (mood/contextual playlists)
- **DSPs might even use AI themselves to generate tracks**, create and curate playlists based on user preferences and moods

2028 est. level of adoption/maturity

- **Techno & quality of outputs:** Improved technology with increasingly higher-quality outputs
- **Usage/adoption:** high adoption potential for functional music and "passive" listening, for both individual and corporate customers

Example

AI-generated tracks produced to feed a DSP's contextual "Morning Motivation" or "Casual Run" playlist



Example of service providers

boomy Suno udio

> Generative AI represents a potential opportunity for DSPs to generate royalty-free tracks and integrate them into their playlists. This approach could significantly boost their margins by drastically reducing copyright costs.
>
> **Tech company**

2028 Main economic impacts identified

1	Market size / Gen AI penetration	**Moderate penetration rate** in volume and value on streaming platforms, particularly in mood playlists
2	Revenue loss	**High potential cannibalisation** of music creators' streaming revenues
3	Gen AI providers' revenues	**Revenues** driven by **subscription fees** from prompters, or by the internalization into DSPs

Expected impact on creators' revenues

 Source: Experts' interviews, Specialized press, PMPS Scenario Planning

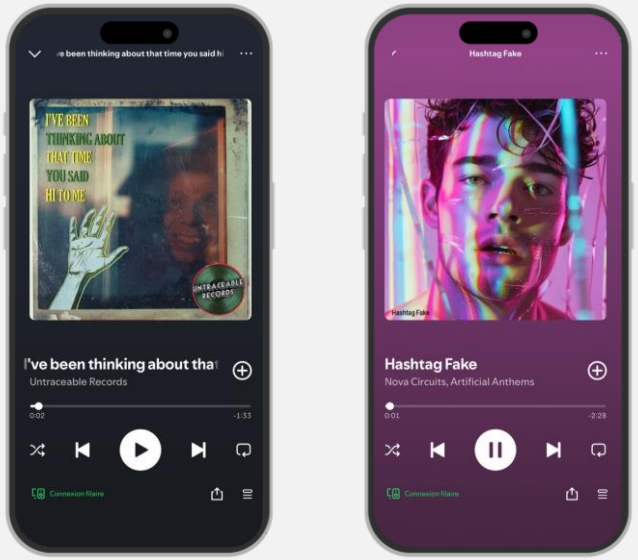
Legend: Low Mid High

Example – 100% AI-generated music is already streamed on DSPs

5 Automated complete musical output generation for **commercial distribution** (e.g. "mood playlists")

Spotify's catalogue now includes AI-generated music created and uploaded by third parties

Example of AI-generated songs on Spotify



Boomy is a platform allowing the creation of AI-generated music to be uploaded on DSPs

Boomy allows users to :

1. **Create** and edit songs
2. **Release** created music on DSPs
3. **Use** the musical work for :
   - Non-commercial purposes in video, livestreaming, and other songs
   - Commercial purposes in podcasts and social media and social media advertising

- In 2023, **Boomy had created 14.4 million songs.**
- **The platform retains the copyright for all songs created**, while users receive an 80% share of the royalty distribution fees

- **AI-generated tracks are already circulating on streaming platforms**, often featured in suggested playlists, with some generating substantial streams
- **Tools from third-party players** such as Boomy **facilitate the creation and upload** of these Gen AI tracks on DSP platforms
- **The impact** of this phenomenon, in terms of volume of tracks and streams, **has yet to be quantified**
- This raises questions **about how platforms should handle these tracks** (whether they should be tagged for user identification and/or removed)
- **Managing this influx is challenging,** as streaming services now receive about **1 million new songs each week**

 Source: Spotify, Boomy, Expert interviews, Specialized press, Music Business Worldwide

Rise of tailored AI-generated music for social media content

7 Automated complete musical output generation for **background content** (AV works, in-store, social media…)

Current application

- **Music generation for social media content using Gen AI-powered tools is already underway**
- **Platforms are already investing in this technology** (e.g., TikTok, with the acquisition of Jukedeck in 2019) **or developing their own tools** (e.g., Meta with AudioCraft)

Current level of adoption/maturity

- **Techno & quality of outputs:** Current services can produce quality musical content for such purposes
- **Usage/adoption:** Mass use remains limited as these tools are not fully integrated within major social networks functionalities

2028 potential application

- In addition to the current prompt-to-music system, Gen AI will allow to provide **instant, context-aware music for user-generated content across all social media platforms**
- Platforms will continue to invest in and **promote Gen AI (copyright-free) music** in their music libraries for content creators

2028 est. level of adoption/maturity

- **Techno & quality of outputs:** Improved technology with increasingly higher-quality outputs, with tools that are already user-friendly, easy to use, and feature advanced UX
- **Usage/adoption:** Widespread use can be expected with the integration of AI music generation tools into major social networks

Example

A TikTok video with AI-generated music specifically tailored to the video's content

Example of service providers

Generalist players: udio, Suno

Specialized players: Loudly, SOUNDRAW

Internal tools: Jukedeck (3), AudioCraft by Meta

> Thanks to Generative AI, content creators can quickly create royalty-free music perfectly suited to their YouTube videos for instance
>
> **CMO**

Main economic impacts identified

1	Market size / Gen AI penetration	**Very high penetration rate** of Gen AI outputs in **user-generated content** on social media
2	Revenue loss	**High potential cannibalisation** of a portion of music creators' social media revenues
3	Gen AI providers' revenues	**Revenues** driven by **B2B subscription fees** and **direct orders** (brands, content creators…)

Expected impact on creators' revenues

 Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low, Mid, High

Widespread adoption of Gen AI music for background content in audiovisual works or public places

7 Automated complete musical output generation for **background content** (AV works, in-store, social media…)

Current application

- Gen AI tools are already used to generate **background scores for various projects and applications** (e.g., advertising, sound systems in public places etc.) but remain limited so far

Current level of adoption/maturity

- **Techno & quality of outputs:** Current tools can already produce good quality music for such purposes
- **Usage/adoption:** Penetration rates remain limited so far

2028 potential application

- In addition to the use **for background scores,** Gen AI could provide **customizable and context-sensitive background music services** for a wide range of multimedia

2028 est. level of adoption/maturity

- **Techno & quality of outputs:** Improved technology with increasingly higher-quality outputs
- **Usage/adoption:** High potential for adoption by B2B clients to reduce costs

Example

AI-generated jingle for a TV show

Example of service providers

Loudly · SOUNDRAW · splash · beatoven.ai · Mubert · soundful

> Generative AI has the potential to significantly impact background music, particularly in tasks where high volumes and quick production times are key, much like traditional music libraries.
>
> **CMO**

Main economic impacts identified

1	Market size / Gen AI penetration	**Very high penetration rate** of Gen AI outputs in the music library market segment
2	Revenue loss	**High cannibalisation rates**: replacement of human produced "**production music**" for B2B use
3	Gen AI providers' revenues	Gen AI tools' revenues driven by **B2B subscription fees and direct orders**

Expected impact on creators' revenues

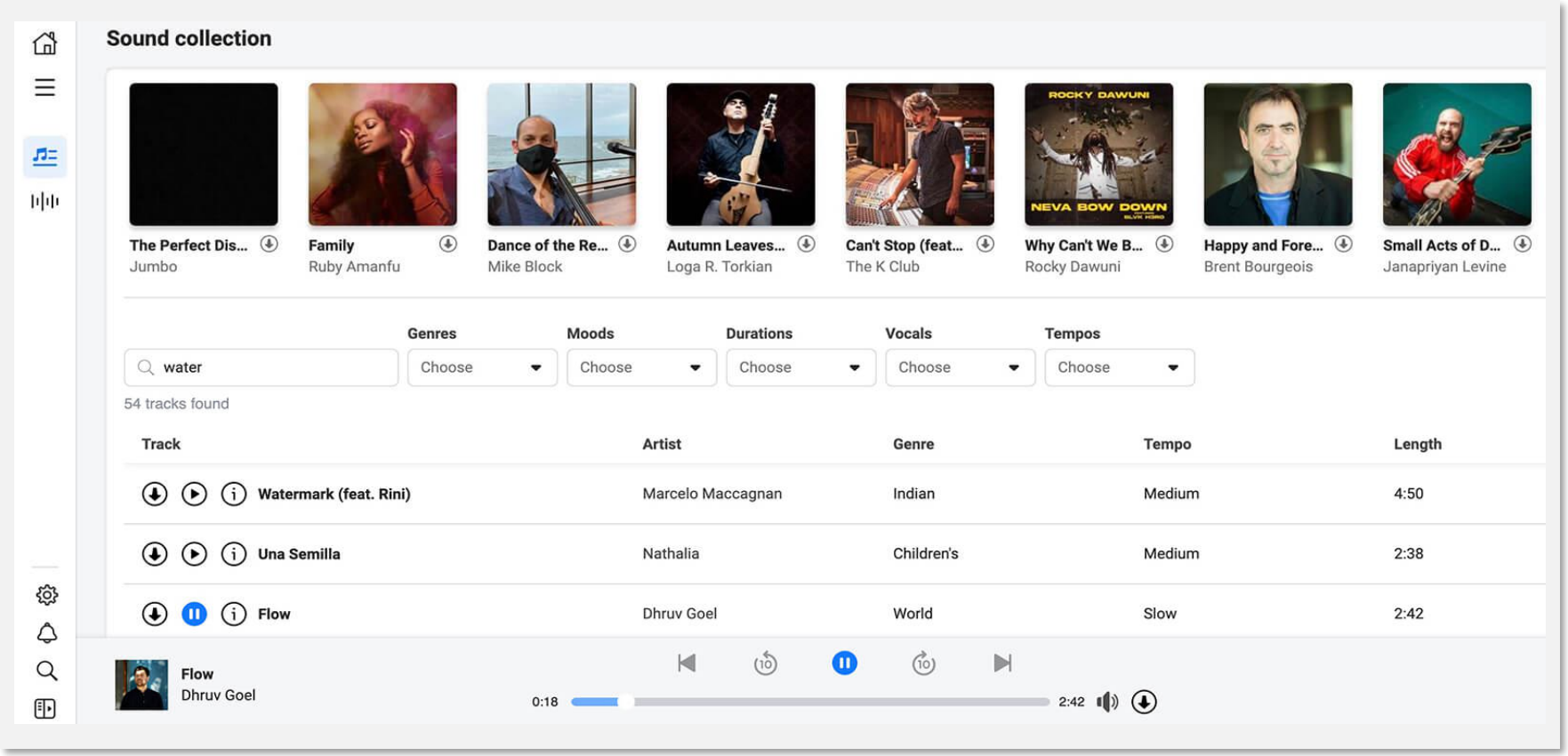
Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low · Mid · High

Example - Meta invests in AI to improve its music library and enhance content creators experience

7 Automated complete musical output generation for **background content** (AV works, in-store, social media…)

Meta's free access music library for social media posts



Meta has been active in the library music market since 2017:

- The **Meta Sound Collection** offers a **library of Meta-owned audio clips available for free**

In parallel, Meta invests in AI to expand its collection of copyright-free music content :

- In 2023, **Meta launched AudioCraft,** an open-source AI model allowing the generation of high-quality, realistic audio and music from text-based user inputs

 Source: Photo credit : Social Media Examiner

Moderate penetration of Gen AI music for core content in audiovisual works

6 Automated complete musical output generation for **core content** in audiovisual works (e.g., video games main theme)

Current application

- **Very limited applications today,** with substantial musical content for audiovisual works remaining mostly commissioned compositions

Current level of adoption/maturity

- **Techno & quality of outputs:** Current services can produce quality musical content, but they are not always considered sufficient to fully replace high-impact and high-budget commissioned creations
- **Usage/adoption:** Use remains limited

2028 potential application

- Gen AI is used to generate outputs replacing commissioned works for core content in certain audiovisual works (lower production budget)
- In addition, Gen AI could be used for **more advanced personalization and real-time music creation** (e.g., video games)

2028 est. level of adoption/maturity

- **Techno & quality of outputs:** Gen AI services will rapidly be able to offer highly qualitative content
- **Usage/adoption:** Expected to become a more widely used tool in audiovisual production for all application types such as series, movies, video games etc., except for high-budget projects requiring the support of famous industry names

Example

AI-generated substantial musical soundtrack for a video game production

Example of service providers

INFINITE ALBUM

> Generative AI enables advanced personalisation and real-time music creation. In video games for instance, it can generate continuous music streams in a specific style, adapting the sound to match in-game events
>
> **Tech Company**

Main economic impacts identified

1	Market size / Gen AI penetration	**High penetration rate** of Gen AI outputs for background music in AV works, for cost reduction
2	Revenue loss	**High potential cannibalisation of** revenues for audiovisual music composers (less orders / commissioned works)
3	Gen AI providers' revenues	Revenues driven by B2B **subscription fees** and **direct orders** mainly from B2B producers

Expected impact on creators' revenues

Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low / Mid / High

Economic impact in Music creation

Approach and Methodology

What will be the economic impact of Generative AI in the Music field by 2028?

Main Applications

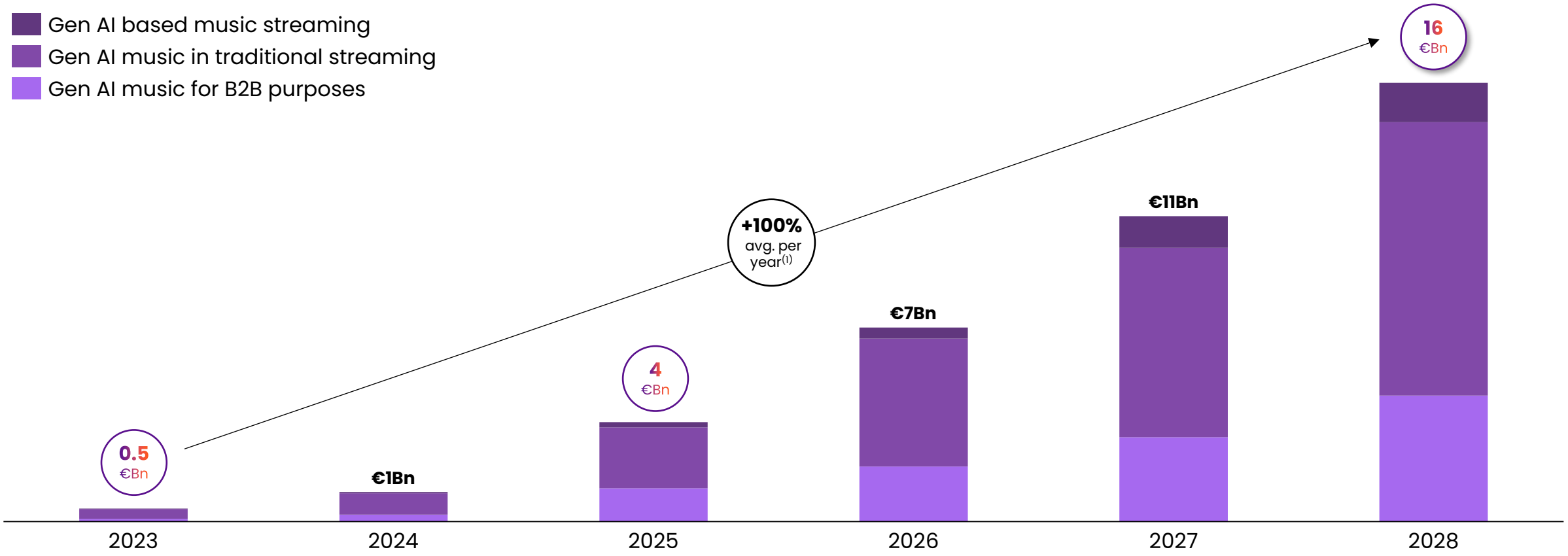
2028 forecast

What will be the economic impact of Generative AI in Audiovisual by 2028?

Fully Gen AI outputs in Music are expected to be worth c.€16Bn in 2028, doubling on average each year

1 Market size

Projected evolution of Gen AI music outputs market size | €Bn, 2023 - 2028



Note: In this market size calculation, no distinction is made whether the music outputs are copyrightable or not | (1) 2023-2028 CAGR

Source: PMP Strategy analysis

This market will be mostly driven by Gen AI music on streaming platforms and Gen AI music for B2B purposes

1 Market size

Fully Gen AI music outputs market size | €Bn, 2028

Gen AI based music streaming

> With the perfecting and democratization of prompt-to-"songs" (outputs), end-consumers are moving from simple users to music curators, thus questioning the very notion of the creator. **New "streaming" possibilities will likely emerge** from this.
>
> **Tech company**

Gen AI music in traditional streaming

> Generative AI represents a **potential opportunity for DSPs** to generate royalty-free tracks and integrate them into their playlists. This approach could significantly boost their margins by drastically reducing copyright costs.
>
> **Tech company**

> Gen AI platforms like Boomy are disrupting the distribution system. They offer **prompter users** the chance to **directly distribute their creations** (outputs) directly on Spotify.
>
> **CMO**

Gen AI music for B2B purposes

> Generative AI has the potential to **significantly impact background music**, particularly in tasks where high volumes and quick production times are key, much like **traditional music libraries**.
>
> **Tech company**

Note: In this market size calculation, no distinction is made whether the music outputs are copyrightable or not

 Source: PMP Strategy analysis

Market saturation will be significant on the music library segment (c.60%), with B2B clients looking to reduce costs

1 Market size

Market segments	Fully Gen AI penetration rate in 2028(1)	Use cases supporting the penetration of Gen AI outputs
Gen AI based music curation and streaming		• **New services** allowing both music listening and **curation/creation** (see associated use case) • 2 potential scenarios: (i) Tools like **Suno** and **Udio** become **new players** in the music streaming industry, (ii) Existing music streaming platforms **integrate and monetize these new Gen AI features**
Gen AI music in traditional streaming platforms		• Penetration of Gen AI outputs in DSPs catalogues, generated by third parties or by the streaming platforms themselves (see associated use case) • High potential in **mood music playlists** (e.g., "Morning Coffee", "Beast Mode" on Spotify) where end-users adopt a more **passive listening**
Gen AI music for B2B purposes *(audiovisual, social media, public places sound system, brands)*		• Use of fully Gen AI music for **background music** in audiovisual works, advertising, social media, in-store sonorization (see associated use cases) • High adoption rates fostered by B2B clients looking for costs reductions and the **unlimited potential** of these Gen AI outputs for **B2B consumers** (brands, audiovisual professionals, content creators, etc…)

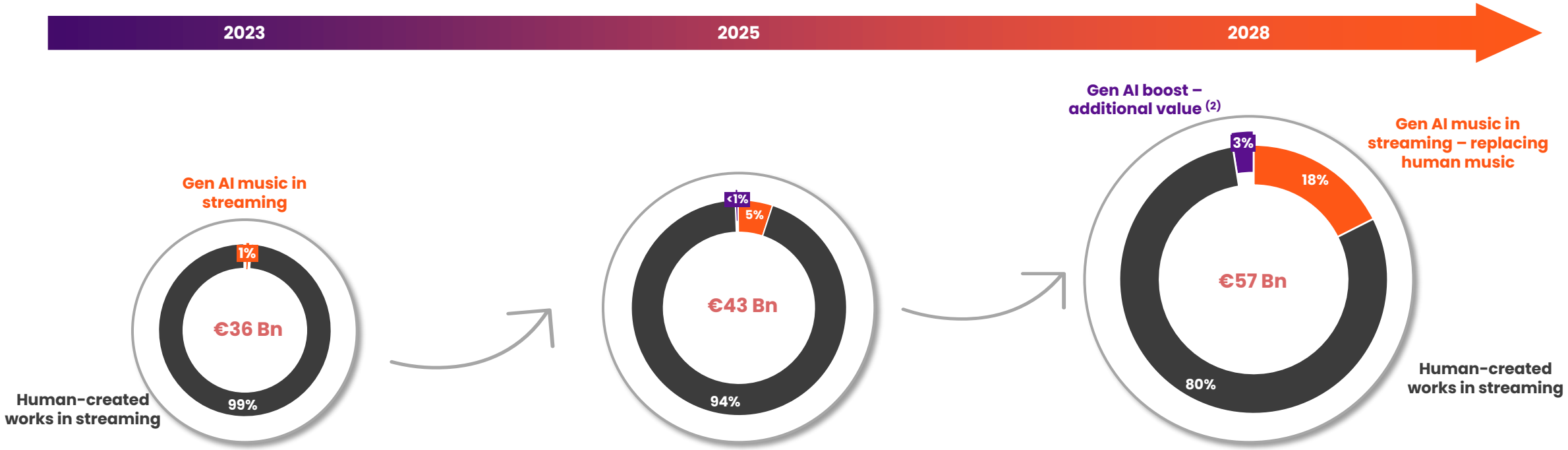
Note: (1) Weighed penetration rates of subcategories analysed

 Source: PMP Strategy analysis

A Gen AI boost is expected on the music streaming segment, due to new usage and functionalities which will be monetized by traditional or new players

1 Market size

Music streaming B2C(1) revenues, generated by human created works vs. Gen AI outputs | €Bn, 2023 - 2028



In the current market, **99% of the € 36Bn music streaming market** is generated by human creations

Gen AI outputs penetrate the market in the **traditional music streaming platforms** and in **new Gen AI based streaming services**

In 2028, Gen AI outputs could create an estimated **additional €1.4Bn in the market**, but the major part (c.€10Bn) of the revenue generated will be a **substitution of human-created works' revenues**

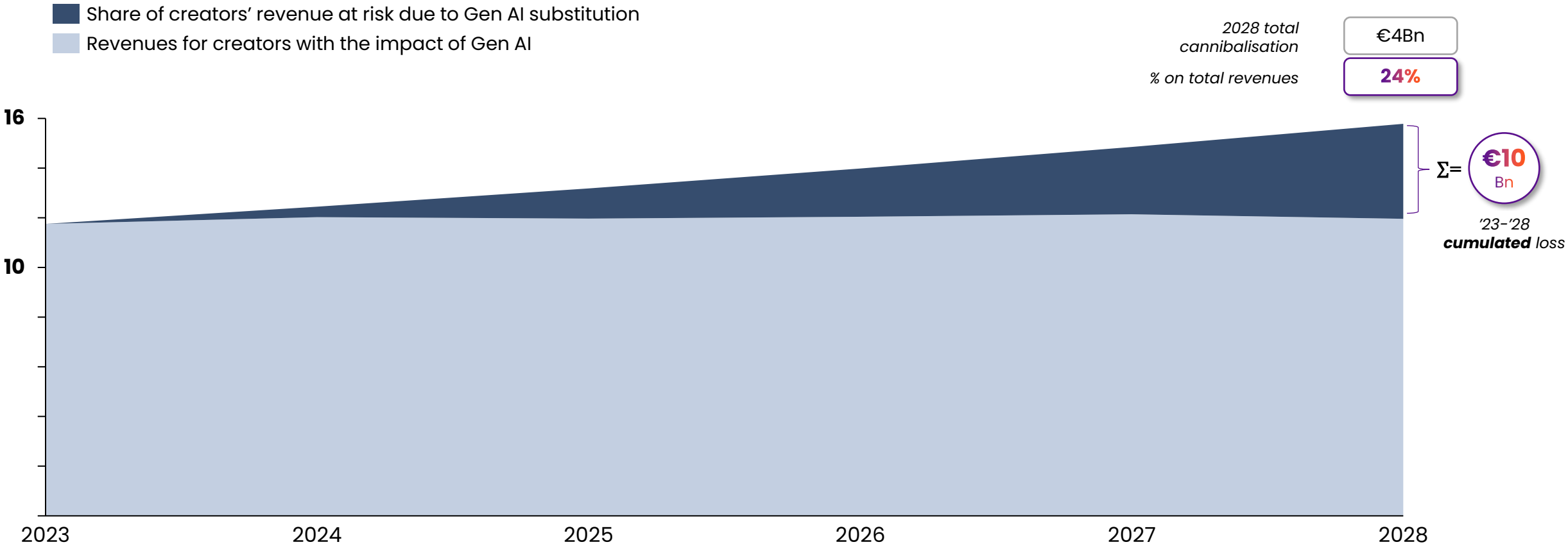
Note: (1) Music streaming platforms B2B revenues (brands, in-store sonorization…) have been excluded of this analysis (included in the B2B segment of the market size calculation) | (2) Gen AI based music platforms (new Gen AI platforms or new offers of traditional DSPs)

Source: PMP Strategy analysis

Under current conditions, this market penetration by Gen AI outputs could put 24% of Music creators' revenues at risk by 2028

2 Revenue loss

Revenues for Music creators with and without the impact of Generative AI | €Bn and %, 2023 - 2028



Note: In this analysis, creators' revenues are represented by CMOs collections

Source: PMP Strategy analysis, CISAC global collections report

The potential impact will be strong on Digital collections (up to 30% cannibalisation), TV & Radio and Background (c. 22% of collections)

2 Revenue loss

Music creators' revenue streams	Gen AI cannibalisation rate in 2028[1]	Use cases explaining cannibalisation levels
Digital	30%	• Gen AI music in **social media** content, **audiovisual streaming** (AV works' background music), music **streaming** (mainly in mood music) and **video games**
TV & Radio[2]	22%	• Gen AI music for **background content** in audiovisual works (mainly in lower production budget works)
Live & Background	22%	• Gen AI music for the **sonorisation of public places** (stores, malls, restaurants; using personalised and unlimited Gen AI outputs to reduce costs)
CD & Video	21%	• Gen AI music in **video games** (use case with high level of adoption, due to new unlimited tracks for games – by moods, styles – enabled by Gen AI)
Other streams		*Marginal to no economic impact*

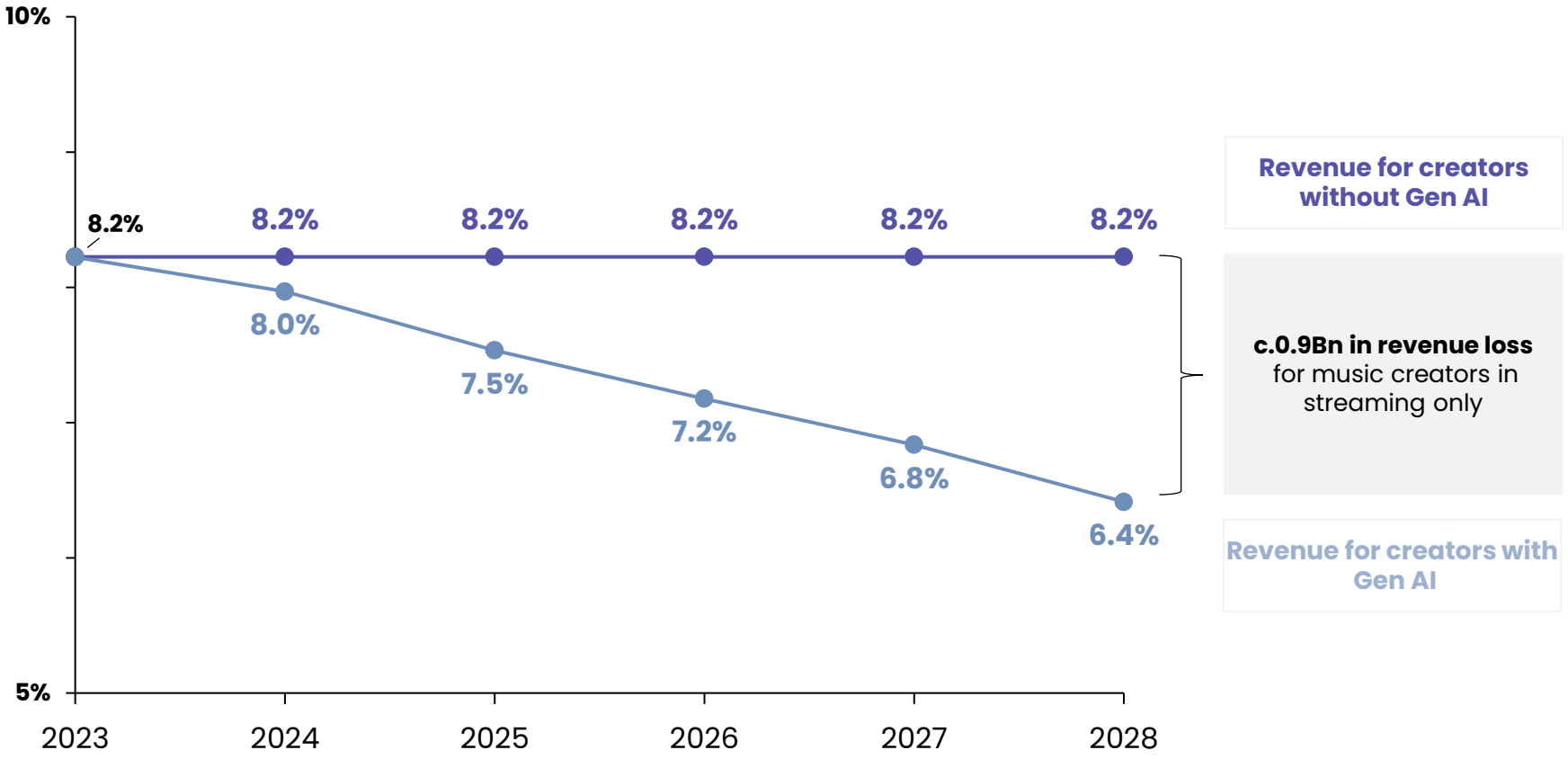
Note: [1] Cannibalisation rates estimated based on interviews and workshops with CMOs and industry experts

Source: PMP Strategy analysis

In a growing music streaming market, creators' share will thus decrease further due to Gen AI (-1.5pts)

2 Revenue loss

Music creators' revenue share in the music streaming market | €Bn, 2023 - 2028



- In 2023, the share of creators' revenue in the streaming market amounts to **approximately 8%**
- In 2028, this share could **decrease to c.6%,** on a significantly higher market
- This dilution could represent a loss of c.**€0.9Bn** for creators in 2028 and a cumulated loss of c.**€2.3Bn** in the five coming years

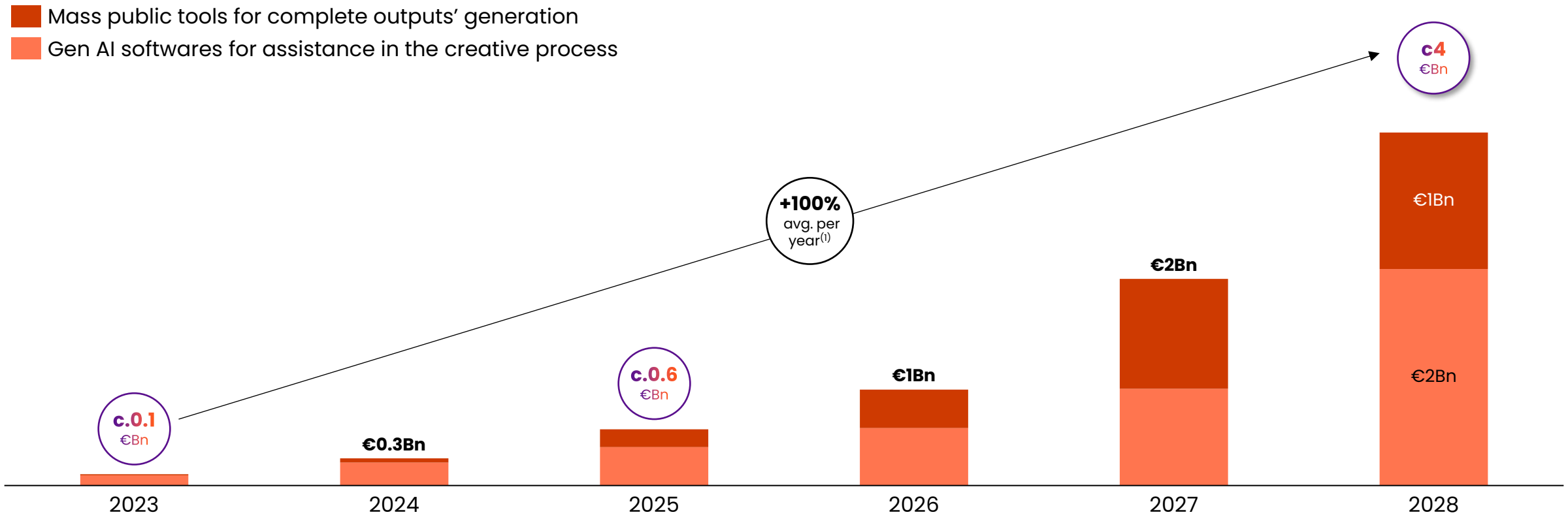
Note: (1) Music streaming platforms B2B revenues (brands, in-store sonorization…) have been excluded of this analysis (included in the B2B segment in the market size calculation

Source: PMP Strategy analysis, CISAC global collections report,

Gen AI providers' revenues in Music could reach c.€4Bn in 2028, doubling on average each year from 2023 to 2028

3 Gen AI services revenues

Music Gen AI providers' revenues | €Bn, 2023 - 2028



Note: (1) 2023-2028 CAGR

Source: PMP Strategy analysis

Study key takeaways – Music

1 Market size

€16Bn

Estimated market value of Gen AI outputs in Music in 2028

Gen AI outputs in Music will be worth a cumulative **€40Bn over the next five years**, rising to an annual value of €16Bn in 2028

By 2028, Gen AI music will account for around 20% of traditional music streaming platforms' revenues and around 60% of music libraries revenues

2 Revenue loss

€4Bn | 24%

Creators' revenues at risk in 2028 compared to a no Gen AI situation

Under current conditions, this market penetration by Gen AI outputs could put 24% of Music creators' revenues at risk in 2028

This represents a cumulative loss of **€10Bn over the next 5 years**, and an annual loss of €4Bn in 2028

2 Gen AI services' revenues

€4Bn

Estimated revenues of Gen AI Music services in 2028

Gen AI services are projected to generate exponential revenue growth, reaching an estimated €4Bn in 2028, with a cumulative total of **€8Bn over 5 years**

Economic impact in Audiovisual creation

Approach and Methodology

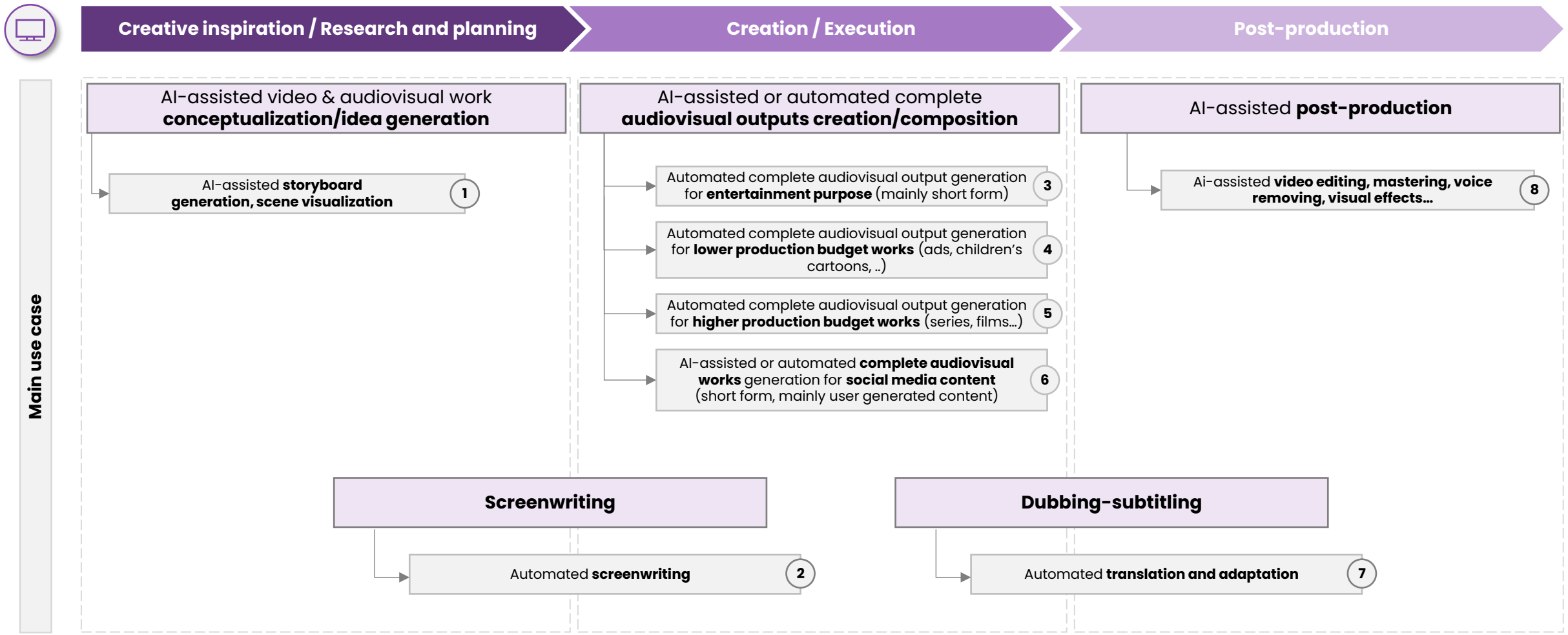
What will be the economic impact of Generative AI in the Music field by 2028?

What will be the economic impact of Generative AI in Audiovisual by 2028?

Main Applications

2028 forecast

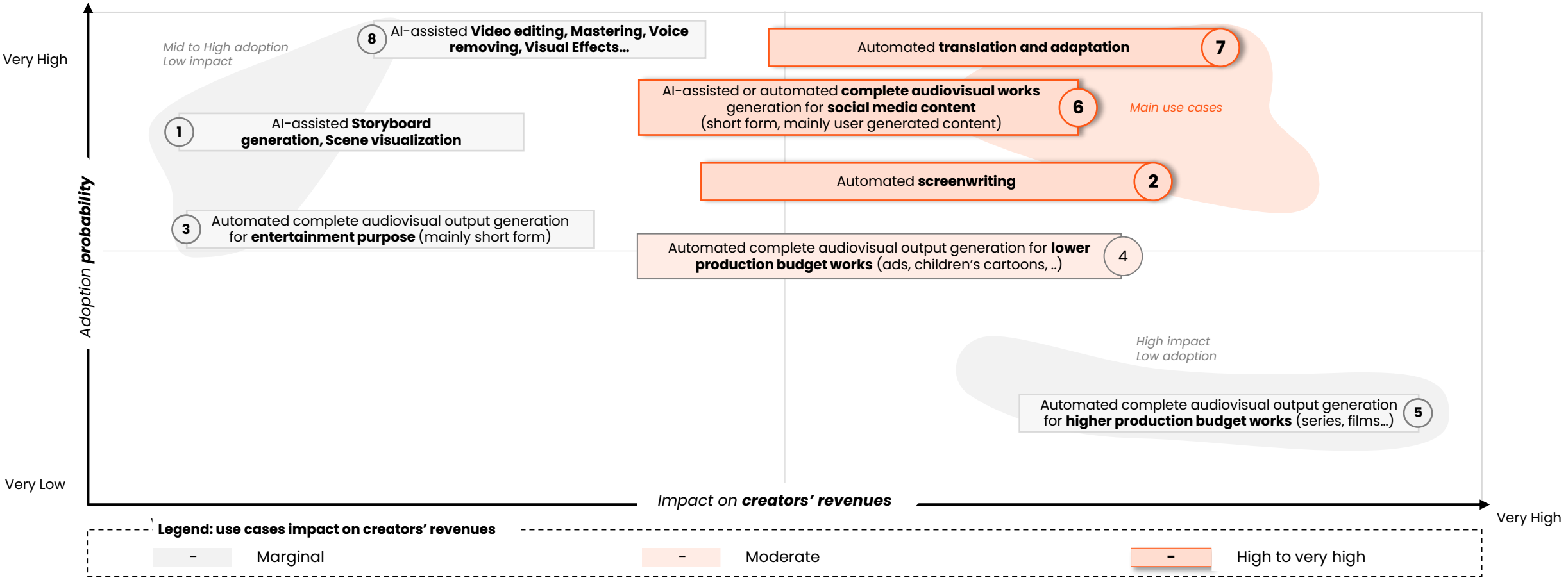
Identification of Gen AI main applications in the audiovisual creation process



Source: Experts' interviews, specialized press

Prioisation of Gen AI use cases in the Audiovisual field

Prioisation of use cases based on expected impact on creators' revenues and adoption probability – Matrix Analysis



 Source: PMP Strategy Analysis

Widespread adoption of Gen AI tools for video content generation on social media

6 AI-assisted or automated **complete audiovisual works** generation for **social media content** (short form, mainly user generated content)

Current application

- **Generation of illustrative, moderate quality videos that support and enhance various types of content**
- Automating tasks like adding relevant visuals, animations, and effects, **allowing them to produce engaging content more efficiently**

Current level of adoption/maturity

- **Techno & quality of outputs:** Currently, AI services cannot produce complex and highly customized visuals using the prompt-to-video method
- **Currently, adoption is low**, as the technology is still developing

2028 potential application

- Generation of **high quality, longer video sequences with minimal input**

2028 est. level of adoption/maturity

- With expected strong improvement in technology capacities, by 2028, **the adoption is expected to be very high**, with AI-assisted tools becoming standard in the content creation process, particularly for creators who need to produce high-quality, visually rich content on tight deadlines

Example

Illustrative videos supporting a history-themed video on YouTube

Example of service providers

Make-a-Video by Meta · invideo · OpenAI Sora · synthesia

> Gen AI will democratize creation and increase user-generated audiovisual content. If technology allows it, we'll have tools enabling to create affordable, high-volume short videos for social networks which will flood the market.
>
> **Audiovisual institution**

Main economic impacts identified

1	Market size / Gen AI penetration	**High penetration rate and market growth** with the use of Gen AI video mainly for content creators
2	Revenue loss	**High cannibalisation** of creators' revenues from **traditional video production services**
3	Gen AI providers' revenues	**Revenues** driven by **subscription fees** from content creators and other social media users

Expected impact on creators' revenues

Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low · Mid · High

Improving technology for the automation of translations and adaptations

7 Automated **translating/adapting**

Current application

- **Automating speech translation, subtitles synchronisation** and **voice dubbing generation**
- Application is currently focused on **non-substantial video due to technology capacity**

Current level of adoption/maturity

- **Techno & quality of outputs:** Currently, AI services can produce complex and highly customized visuals using the prompt-to-video method
- **Currently, adoption is low for complex** and high-quality **audiovisual works** but is **high for lower value content**

2028 potential application

- **High-quality real-time translations and lip-syncing** that are **indistinguishable from human performance**

2028 est. level of adoption/maturity

- **By 2028, adoption is expected to be very high,** with automated dubbing and subtitling becoming more qualitative and therefore a standard practices in the industry, particularly for streaming platforms and global content distributors.

Example

Gen AI automated subtitling for a documentary production

Example of service providers

deepdub.ai reSPEECHER MURFAI

> If the technology improves, Gen AI could be used to produce high-quality content. However, as of now, automated subtitling and dubbing are still limited to low added-value applications.
>
> **Dubbing and Subtitling Agency**

Main economic impacts identified

1	Market size / Gen AI penetration	**High penetration rate** of Gen AI DB/ST; potential **shrinking** of the overall market (cost reduction)
2	Revenue loss	**High cannibalisation of revenues** for DB/ST authors and less orders for DB/ST agencies
3	Gen AI providers' revenues	**Revenues** driven by **subscription fees** from audiovisual producers for DB/ST works

Expected impact on creators' revenues

Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low Mid High

Generative AI as an assistant and/or a substitution for screenwriting in audiovisual works

2 Automated **screenwriting**

Current application

- **Current tools allow to automate / facilitate a number of tasks related to scriptwriting**: scenario analysis, research, rewriting, …

Current level of adoption/maturity

- **Techno & quality of outputs:** easy to use tools
- **Currently, adoption is still pretty low** as tools are mostly used for assistance / idea generation or rewriting

2028 potential application

- **The progress of tools will allow to generate more quality scripts and automate the full generation of scenarios for certain contents**

2028 est. level of adoption/maturity

- **By 2028, adoption is expected to be very high especially on lower production value segments,** with AI tools allowing to create ever more complex stories based on specified criteria

Example

Fully Gen AI automated screenwriting for a TV soap opera

Example of service providers

GENARIO

> The main concerns about the impact of Gen AI often arise from screenwriters among our members: the profession is likely to be heavily impacted in the coming years.
> **Audiovisual CMO**

Main economic impacts identified

1	Market size / Gen AI penetration	**High penetration rate** of Gen AI scripts; potential **shrinking** of the overall market (cost reduction)
2	Revenue loss	**High cannibalisation of revenues** for screenwriters as Gen AI scripts become more cost-effective
3	Gen AI providers' revenues	**Revenues** driven by **subscription fees** from audiovisual producers for screenwriting works

Expected impact on creators' revenues

Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low Mid High

Rise of Gen AI content for lower budget audiovisual productions, fostered by producers' willingness to gain efficiency

4 Automated complete audiovisual output generation for **lower production budget works** (ads, soap opera..)

Current application

- **First creations of entire audiovisual outputs** in animated fiction films & series
- **Ads** or **Music clips generation,** with enhanced possibilities but mid production quality

Current level of adoption/maturity

- **Techno & quality of outputs:** Currently, AI services cannot produce quality audiovisual content
- **Currently, adoption is low**, due to the poor quality of AI-automated audiovisual outputs generation

2028 potential application

- **High-quality audiovisual content** that is indistinguishable from human-made productions
- **Potential seamless integration** into some audiovisual production sectors (soap operas, advertising, music clips, animated works…)

2028 est. level of adoption/maturity

- **Mid- to high adoption**, depending on the evolution of the quality of the audiovisual content/output

Example

Extract of *Qianqiu Shining*, China Media Group AI-generated animated series in 2022

Example of service providers

OpenAI Sora

synthesia

> Adoption depends on the technology's capabilities. Currently, producing a high-quality audiovisual work from start to finish, especially a two-hour film, is beyond reach, while it is already feasible for a short-animated film.
>
> **Audiovisual institution**

Main economic impacts identified

1	Market size / Gen AI penetration	**High penetration** rate of Gen AI; **shrinking** of the **traditional market** (cost reduction)
2	Revenue loss	Very **high impact on audiovisual creators/authors** due to productions' budget decrease
3	Gen AI providers' revenues	**Revenues** driven by **B2B subscription fees** from audiovisual production companies

Expected impact on creators' revenues

Source: Experts' interviews, Specialized press, PMPS Scenario Planning

Legend: Low · Mid · High

Economic impact in Audiovisual creation

Approach and Methodology

What will be the economic impact of Generative AI in the Music field by 2028?

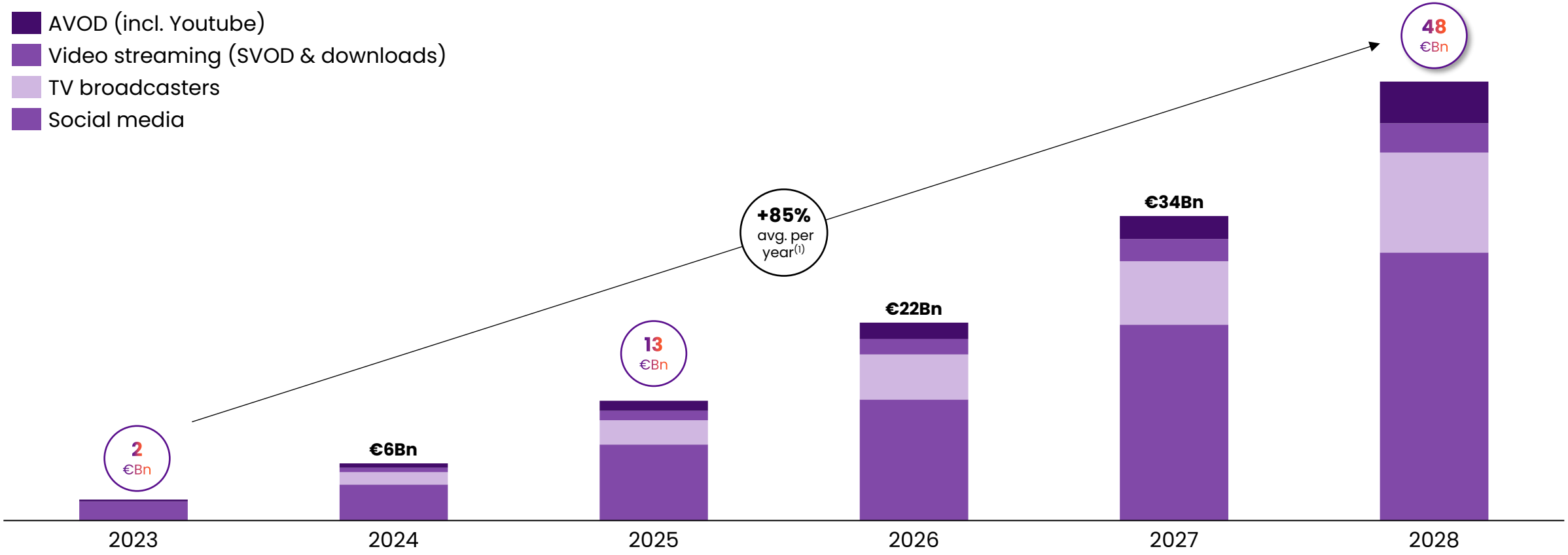
What will be the economic impact of Generative AI in Audiovisual by 2028?

Main Applications

2028 forecast

Fully Gen AI audiovisual outputs are expected to be worth c.€48Bn in 2028, with an average growth of c.85% each year

Projected evolution of Gen AI audiovisual outputs market size | €Bn, 2023 - 2028



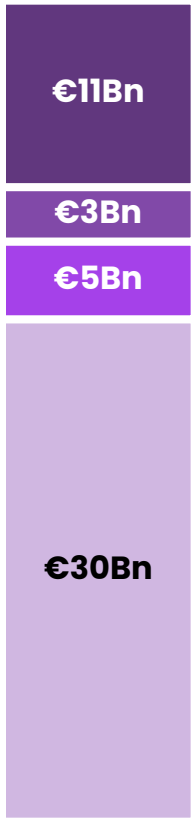
Note: In this market size calculation, no distinction is made whether the Gen AI outputs are copyrightable or not, and only Fully Gen AI audiovisual/video outputs are considered | (1) 2023-2028 CAGR

Source: PMP Strategy analysis

The market will be mostly driven by the penetration of Gen AI outputs on social media and in lower production value TV programmes

1 Market size

Fully Gen AI audiovisual outputs' market size | €Bn, 2028



TV broadcasters (1)

SVOD

AVOD (incl. Youtube)

Social media

> There is a risk that some audiovisual production with lower budget might be replaced in the future by Gen AI outputs, for example some soap operas, low-budget advertising & clips, or animated content for kids… Producers of these content will be looking to reduce costs by leveraging Gen AI tools.
>
> **CMO**

> Some specific YouTube creators now have the potential to produce fully Gen AI videos, enabling them to deliver high-quality, engaging content on complex topics with minimal effort. For instance, a channel dedicated to science education can leverage Gen AI to generate fully automated content.
>
> **Audiovisual institution**

> Gen AI will democratize creation and increase user-generated audiovisual content. If technology allows it, we'll have tools enabling to creating affordable, high-volume short videos for social networks which will flood the market.
>
> **Audiovisual institution**

Note: In this market size calculation, no distinction is made whether the Gen AI outputs are copyrightable or not | (1) includes SVOD, FAST, Pay-per-view, EST (downloads)

Source: PMP Strategy analysis

Market saturation by Gen AI complete audiovisual outputs will remain more limited than for Music

Market segments	Fully Gen AI penetration rate in 2028[1]	Use cases supporting the penetration of Gen AI outputs
TV Broadcasters	4%	• Leveraging of **Gen AI content to produce lower budget and more personalized programmes** (lower budget TV shows, advertisings, kids animated, …) allowing to keep up with audience demand at reduced costs
SVOD	2%	• Penetration of **Gen AI audiovisual outputs in SVOD platforms catalogues**
AVOD	8%	• Use of Gen AI tools to produce audiovisual outputs for **short and viral content on AVOD platforms** (mainly YouTube)
Social media	13%	• Use of Gen AI tools to automate the generation of **short form videos on social media, and produce engaging and personalized content** more efficiently by adding relevant visuals, animations, and effects

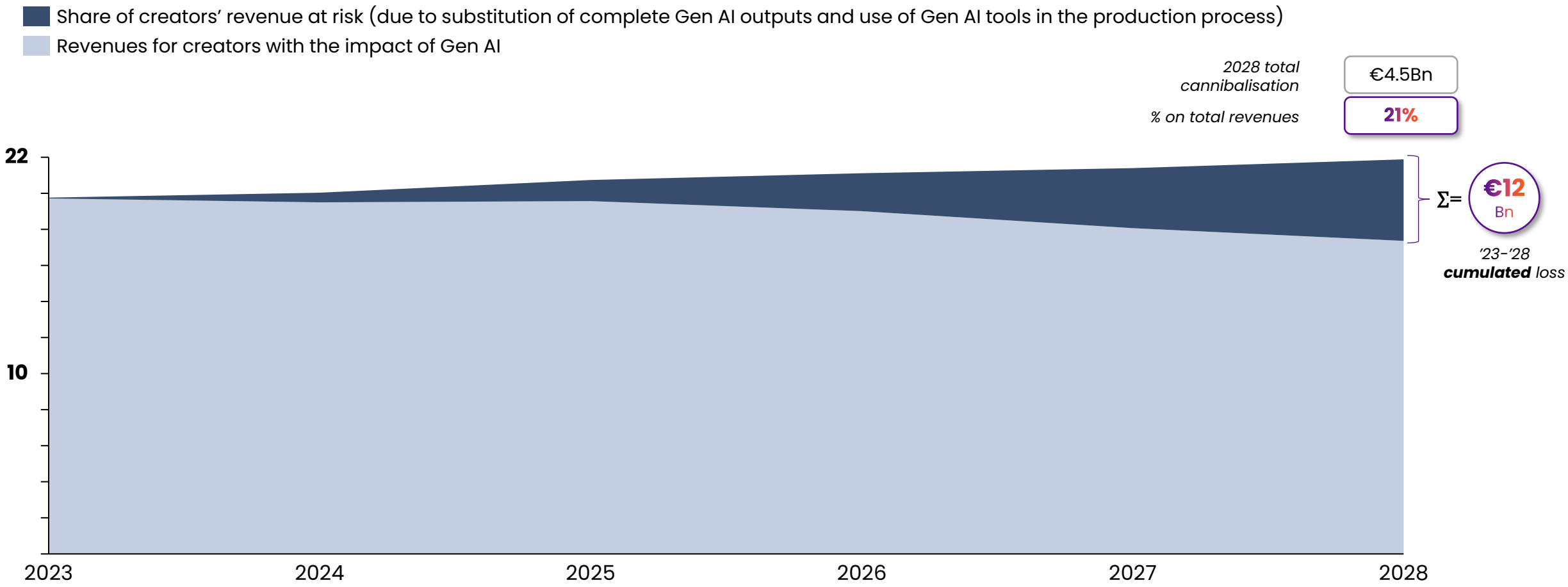
Note: [1] Weighed penetration rates of subcategories analysed

Source: PMP Strategy analysis

The use of Gen AI tools to automate tasks in the production process could put 21% of audiovisual creators' revenue at risk by 2028

2 Revenue loss

Revenues for Audiovisual creators with and without the impact of Gen AI outputs | €Bn and %, 2023 - 2028



Note: In this analysis, revenues include both CMOs collections and other revenue streams (upfront payments)

Source: PMP Strategy analysis, CISAC global collections report

The potential impact will be particularly strong for Translators and Adapters (c.56% of cannibalisation rate)

2 Revenue loss

Audiovisual creators / authors' categories	Gen AI cannibalisation rate in 2028[1]	Use cases explaining cannibalisation levels
Directors & other co-authors	15%	• **Widespread use of Gen AI tools to automate directors and other co-authors' tasks**, fostered by producers' willingness to gain efficiency and reduce costs • **Complete audiovisual outputs replacing human-created works** on certain categories of audiovisual content
Screenwriters	20%	• **Use of Gen AI screenwriting assistance tools**, supporting authors in their work but also pushing producers to reduce the budget spend for screenwriting
Translators / Adapters	56%	• **Use of Gen AI tools for automatic translation and adaptation**, with outputs increasingly closer to human work at a decreasing cost

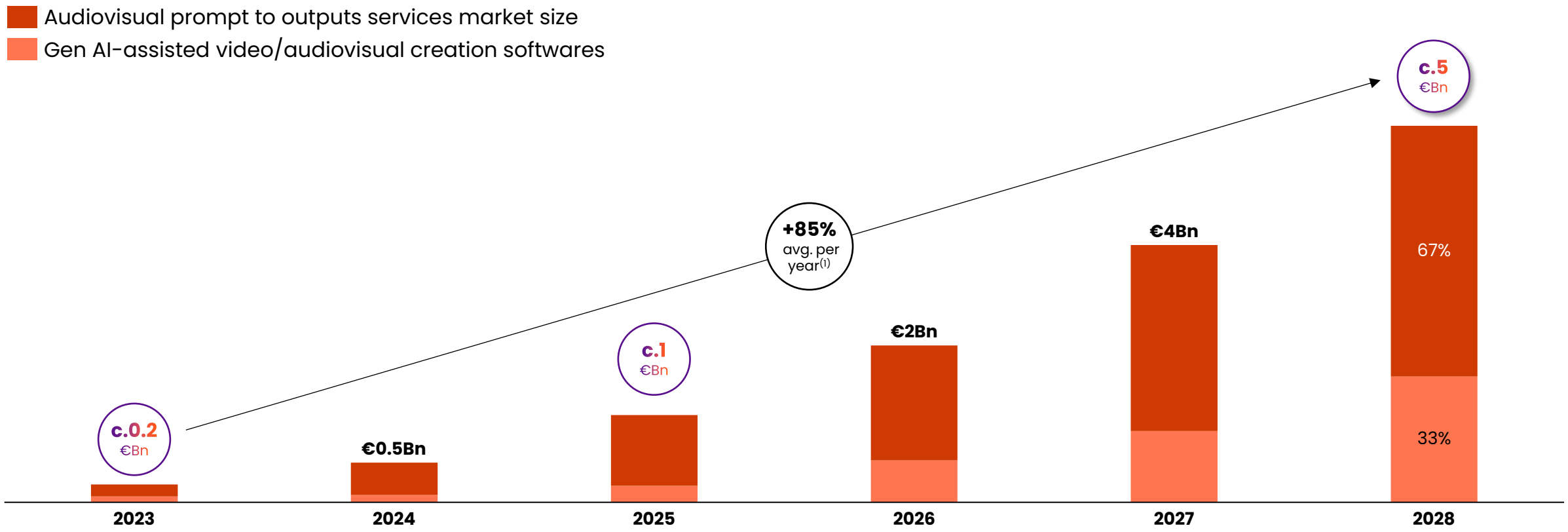
Note: [1] Cannibalisation rates estimated based on interviews and workshops with CMOs and industry experts

Source: PMP Strategy analysis

In Audiovisual, Generative AI providers' revenues could reach €5Bn in 2028, driven by Gen AI prompt-to-outputs tools

3 Gen AI services revenues

Audiovisual Gen AI providers' revenues | €Bn, 2023 - 2028



Note: (1) 2023-2028 CAGR

Source: PMP Strategy market model, Experts' interviews

Study key takeaways – Audiovisual

1 Market size

€48Bn

Estimated market value of Gen AI outputs in Audiovisual in 2028

AI-generated complete Audiovisual outputs are expected to be worth **c. €48Bn in 2028.**

Audiovisual outputs generation for social media and TV will account for the lion's share of the market.

2 Revenue loss

€4.5Bn | 21%

Audiovisual creators' revenues at risk in 2028 (compared to a no Gen AI situation)

The widespread use of Gen AI tools throughout the production process of audiovisual works could put 21% of creators' revenue at risk by 2028.

This represents a cumulative loss of **€12Bn over the next 5 years**, and an annual loss of €4.5Bn in 2028.

2 Gen AI services' revenues

€5Bn

Estimated revenues of Gen AI Audiovisual services in 2028

Gen AI services in Audiovisual (both mass public and professional tools/softwares) are projected to generate exponential revenue growth, reaching an estimated €5Bn in 2028, with a cumulative total of **€13Bn over 5 years.**

Appendix

Detailed methodology and assumptions – Music

Glossary

Detailed list of interviews conducted

PMP Strategy presentation

Use cases analysis has allowed to identify the Music market segments most likely to be impacted by Gen AI in the next 5 years

1 Market size

Market segmentation and impact of Gen AI use cases done by crossing 3 dimensions

Music works distribution channel

B2C / B2B2C:

- Concerts/Festivals/Music shows (Live audience)
- **Digital** – current streaming platforms
- **Digital –** New AI-based streaming platforms
- Digital – other downloads
- Physical sales (CDs, vinyls…)

B2B – Music for audiovisual, social media, in-store sonorization, brands…:

- **Music libraries**
- Direct commissioned works

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Type of musical artwork

- Commercial music
- **Mood music**
- **Background music/sound effects** (for social media, audiovisual, public places)
- **Core music** in audiovisual content

×

Production budget of the works

- Higher budget works
- Lower budget works

Legend: expected impact of Gen AI outputs on the market segment (market penetration of Gen AI outputs)

- Marginal to low
- Moderate
- High to very high

For each of these segments, a Gen AI penetration rate has been estimated based on use cases expected adoption and impact (from low to very high)

1 Market size

		2023 market size and 2028 forecasts on segments impacted by Gen AI		x	Fully Gen AI outputs Penetration rate in 2028		=	2028 Fully Gen AI music outputs' market size
		'23 market size	'28 forecasts			Weighed penetration rates considering :		
B2C/B2BC2	New Gen AI music streaming platforms[1]	<0.1Bn	1.4Bn		100%	• New Gen AI based streaming platforms allowing listeners/users to curate and listen to Gen AI music and/or new offers in current streaming platforms		€1.4Bn
B2C/B2BC2	Music streaming platforms	€36Bn	€55Bn		20%	• Commercial music • Mood music		€10Bn
B2B	Music libraries[1] – for **audiovisual**, social **media**, public places **sonorization**, **brands**	€5Bn	€7.8Bn		57%	• Licensed music – commercial/preexisting tracks • Licensed music – background/sound effects • "Royalty free" music (buy out)		€4.5Bn
						Total Gen AI market size for musical outputs		c. €16Bn

- We consider here the "public price" of music for B2B clients buying / commissioning musical works for audiovisual content, public places sonorization, etc.
- The impact on the value driven by the diffusion of this music in audiovisual works (by SVOD platforms, TV/Radio broadcasters) is considered as part of question 2/
- The market size calculation includes **royalty-free** music content

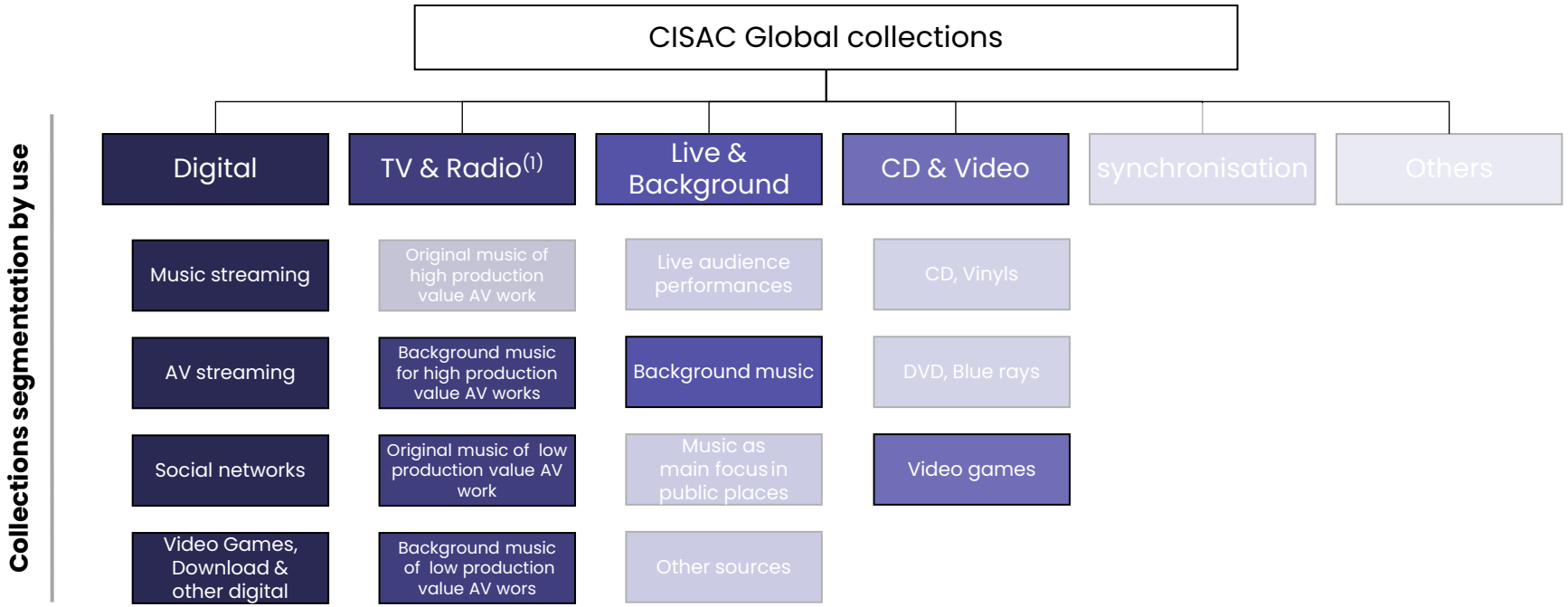
Note: [1] Does not include all AI-based music services, but only new platforms on which end-users/subscribers are both music listeners and creators (Udio, Suno) | [2] Also includes music libraries from majors (e.g. Universal Music Production), and from DSPs

Source: PMP Strategy market model, financial reports, Specialized press, Experts' interviews

Revenue cannibalisation for Music creators has been calculated based on a segmentation of the global CMOs collections

2 Revenue loss

Music market segmentation on segments impacted by AI generated outputs



Rationale

- Exclusion from the calculation (*blurred boxes*) of the collections' subsegments where the human created works are unlikely to be replaced by AI:
  - E.g. : it is estimated that the music used for live shows will remain predominantly human-created, as the audience always associates itself with a musician when attending a live event

Key methodology insights

- **Segmentation approach** to measure AI outputs' cannibalisation on creators' revenues:
  - **Breakdown of CISAC 2023 global Music collections by categories** (e.g Digital) **and subsegments** (e.g Music streaming platforms, SVOD platforms, Social networks, etc.)
  - **2028 collections forecast for each subsegment** based on historical growth rates and future market trends
  - **For each subsegment: estimated cannibalisation rate in 2028** based on use cases and market estimates conducted as part of question 1/

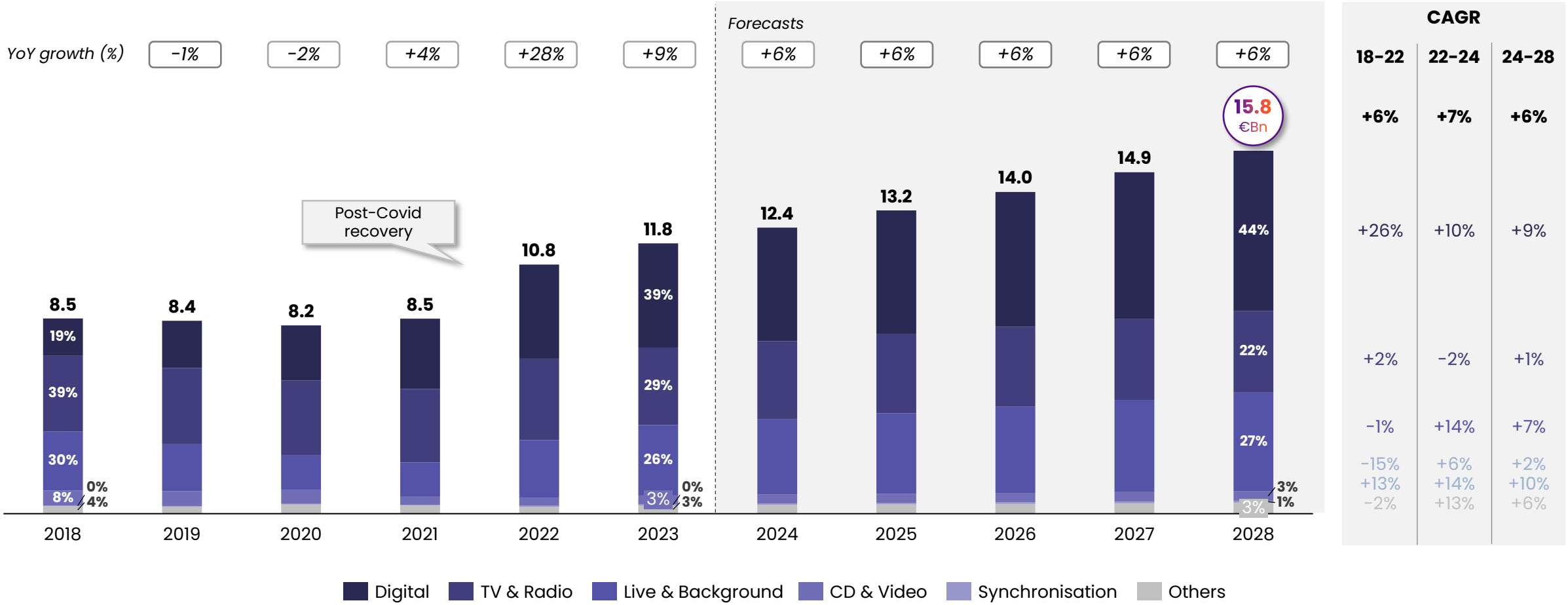
Note: (1) Segmentation of this category crossing the type of audiovisual content on which it is played and the importance of the music in the AV work

Source: PMP Strategy market model, Experts' interviews

Based on historical growth and future market trends, CISAC collections for Music are expected to reach c. €15.8Bn by 2028

2 Revenue loss

CISAC Music collections evolution by music usage in current market evolutions | €Bn, 2018-2028



CAGR	18-22	22-24	24-28
	+6%	+7%	+6%
	+26%	+10%	+9%
	+2%	-2%	+1%
	-1%	+14%	+7%
	-15%	+6%	+2%
	+13%	+14%	+10%
	-2%	+13%	+6%

Note: Forecasts CAGR based on historical collections and upcoming trends

Source: PMP Strategy market model, Experts' interviews

To estimate the revenue loss for Music creators, key assumptions have been made on Gen AI cannibalisation rates by collections subsegments

2 Revenue loss

Revenue sub-streams [1], 2023 collections and 2028 forecasts	'23 collections	'28 forecasts	x	Gen AI outputs 2028 cannibalisation rates	Weighed cannibalisation rates considering :	=	2028 revenue loss for creators
Digital	€4.5Bn	€6.9Bn		30%	• Music streaming • AV streaming • Social media • Video Games		€2Bn
TV & Radio[1]	€3.4Bn	€3.5Bn		22%	• Original music for higher budget AV works/ music tracks on radio • Background music for higher budget AV works • Original music for lower budget AV works • Background music for lower budget AV works		€0.7Bn
Live & Background	€3.1Bn	€4.2Bn		21%	• Live audience performances • Music as main focus in a live audience (clubs…) • Background music (sonorization of public places)		€0.8Bn
CD & Video	€0.4Bn	€0.4Bn		21%	• CD, Vinyls • DVD, Blue-rays • Video games		€0.1Bn
Other sub-streams	€0.3Bn	€0.7Bn		*Marginal to no impact*			
	€11.8Bn	**€15.8Bn**				**Total revenue loss for music artists in 2028**	**c. €3.8Bn** (24%)

Total collections

Note: [1] AV works in the cannibalisation rates consider both TV & radio works

Source: PMP Strategy market model, CISAC collections, Specialized press, Experts' interviews

Gen AI tools providers have been segmented in 2 categories to assess their revenues

3 Gen AI services revenues

Music Gen AI tools providers' revenues – 2023-2028, €Bn

	Number of Gen AI based services in 2028	x	Average Number of users in 2028 and % of paying subscriptions	x	Average annual price of the subscription	=	2028 associated players total revenues
1. Mass public tools	4		60m (10%)		€60		**€1.4Bn[1]**

	Audio/Music software market size			x	2028 Generative AI tools penetration rate	=	2028 associated players total revenues
	2023		2028				
2. Gen AI tools/software as an assistant	€2.3Bn	▶	€4.2Bn[2]		**60% / High**		**€2.3Bn**

Note: [1] Calculated in question 1, representing new AI based streaming platforms (and described as the use case: end-user as curators) | [2] High growth rate as new services (providing both prompt-to-outputs and assistance in the creation – such as Boomy and Beatoven) will lead to revenue growth on the market

Source: PMP Strategy market model, Experts' interviews, Specialized press, Business Research Insights

Appendix

Detailed methodology and assumptions – Audiovisual

Glossary

Detailed list of interviews conducted

PMP Strategy presentation

Use cases analysis has allowed to identify the Audiovisual market segments most likely to be impacted by Gen AI in the next 5 years

Audiovisual market segmentation[1] and impact of Gen AI use cases done by crossing 3 dimensions

Audiovisual works distribution channels/media

- Cinema
- TV broadcasters
- Radio broadcasters
- Digital - AVOD
- Digital - SVOD
- Digital - Social Media
- Physical sales (DVD, Blue-ray, …)

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Type of audiovisual content

Complete Audiovisual content :

- Films / Series
- TV magazines/TV news/weather/ sports event
- Animated works/Kids shows
- Soap Opera
- Music clips
- Advertising
- **Short forms / User-generated content**

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Artistic value of the works / Nature of the programmes

- Higher budget works
- Lower budget works
- Flow programmes*
- Stock programmes*

** Stock programs can be rebroadcast (e.g., fiction, documentaries), while flow programs are usually aired once (e.g., news, sports, games)*

Legend: expected impact of Gen AI works on the market segment (market penetration of Gen AI works)

- Marginal
- Moderate
- High to very high

Note: [1] Audiovisual market excluding audio podcast and video games

For each of these segments, a Gen AI penetration rate has been estimated based on use cases expected impact (from low to very high) – Focus on complete AV outputs

1 Market size

2023 market size and 2028 forecasts on segments impacted by Gen AI			x	Fully Gen AI artworks Penetration rate in 2028		=	2028 Fully Gen AI AV works' market size
	'23 market size	'28 forecasts		Weighed penetration rate, including[1]:			
TV broadcasters	€327Bn	€298Bn		4%	• Flow programmes of which news, weather, feature stories…) • Flow programmes of which sports events, games… • Ads & clips (lower budget works) • Stock programmes – of which films, series… • Stock programmes – of which kids animated works…		€11Bn
Digital - SVOD	€107Bn	€161Bn		2%	• Higher budget AV works (films for cinema…) • Lower budget complete AV works (daily soap opera, reality TV…) • Animated works/Kids' content		€3Bn
Digital - AVOD	€37Bn	€60Bn		8%	• Music/covers videos • Educational/tutorial • Gaming videos • Corporate videos • Others (incl. vlog, comedy)		€4.5Bn
Digital - Social Media	€186Bn	€230Bn		13%	• Short form videos (Reels, TikTok) • Long-format videos		€30Bn

Total Gen AI market size for complete audiovisual productions **c. €48Bn**

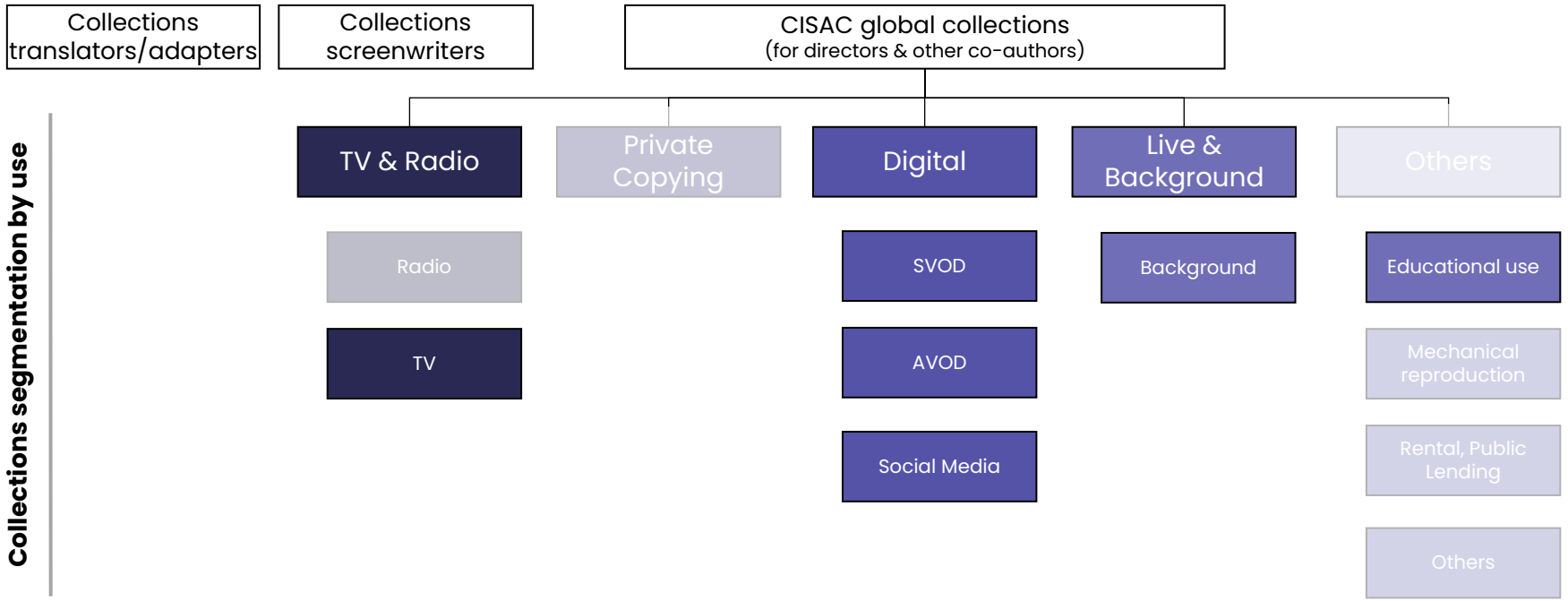
Disclaimer: Market size including **royalty-free audiovisual content** (mainly videos)

 Source: PMP Strategy market model, financial reports, Specialized press, Experts' interviews

Revenue cannibalisation for creators has been calculated based on a segmentation of Audiovisual global collections

2 Revenue loss

Audiovisual collections segmentation and identification of segments on which AI impact is marginal



Rationale

- Exclusion (or marginal impact on the total) from the calculation of the collections' subsegments where the AI generated works are unlikely to be cannibalized by Gen AI (*blurred boxes*):
  - E.g., (i) Marginal impact on radio collections as few collections from radio components likely to be impacted by AI (audio podcasts) (ii) Private copying works may shrink due to shrinking of global revenues but collections will still be from human creations

Key methodology insights

1. Isolation of collections for translators/adapters and screenwriters, and calculation of the revenue loss of these categories based on **cannibalisation rates assumptions for each AV works represented**

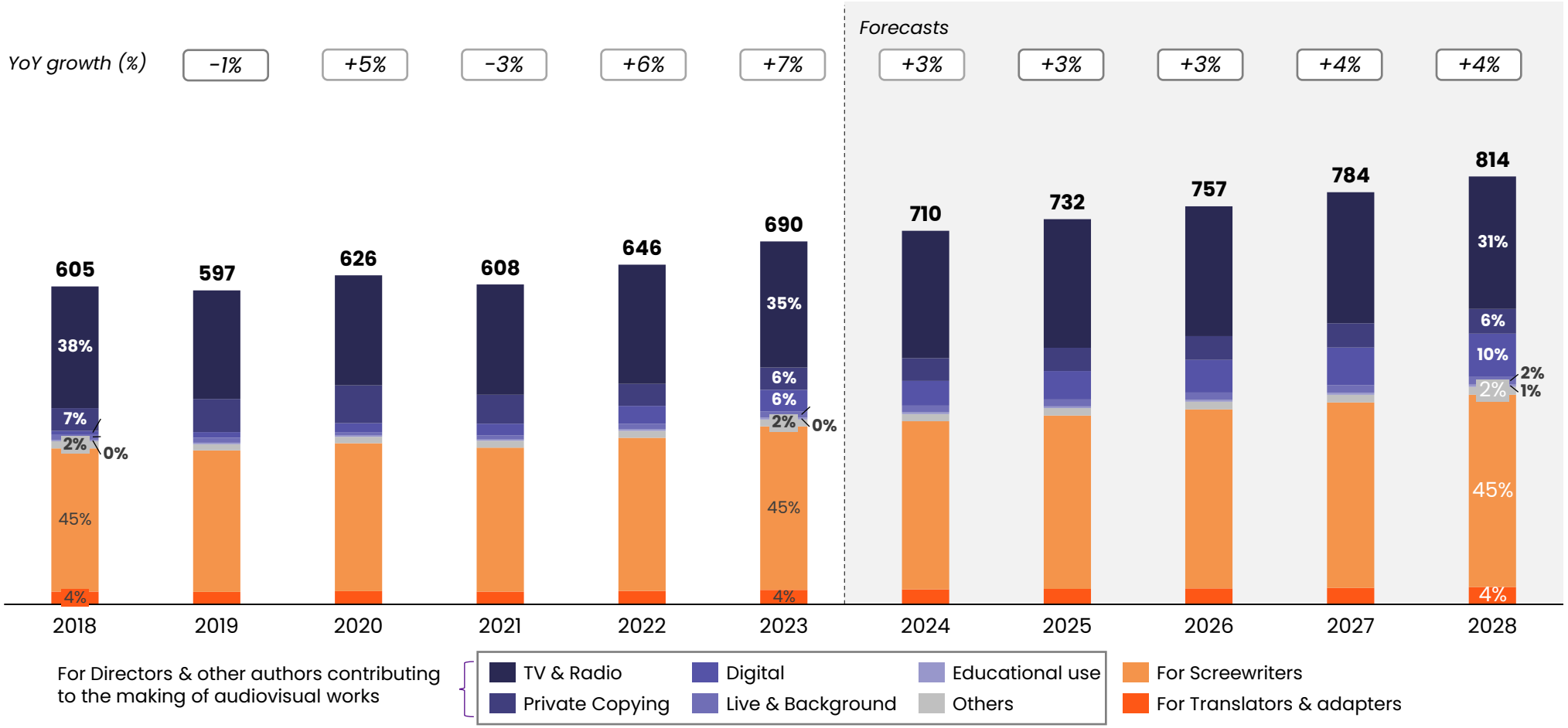
2. **For the other works** (complete audiovisual outputs): **Bottom up & Top-down approach to calculate the potential revenue loss for complete audiovisual outputs :**
   - Breakdown of CISAC 2023 global audiovisual collections by categories and subsegments
   - 2028 collections forecast for each subsegment based on historical growth rates and future market trends
   - Estimation of Gen AI outputs' works cannibalisation rate in 2028 based on use cases and market estimates conducted as part of question 1.

Source: PMP Strategy market model, Experts' interviews

Based on historical growth and future market trends, CISAC collections for Audiovisual are expected to reach 814m by 2028, with a 24-28 CAGR of c.3%

2 Revenue loss

CISAC audiovisual's collections evolution by categories/revenue streams in current market evolutions | €m, 2018-2028



	CAGR		
	18-22	22-24	24-28
	+2%	+5%	+3%
	0%	+3%	+1%
	-1%	+2%	+2%
	+51%	+17%	+15%
	-0	+12%	+4%
	+3%	+3%	+6%
	-1%	+2%	+2%
	+2%	+5%	+3%
	+2%	+5%	+3%

 Source: PMP Strategy market model, Experts' interviews

The revenue loss for directors and other authors contributing to the making of the AV works has been estimated by applying 2028 estimated cannibalisation rates

2 Revenue loss

Revenue sub-streams [1], 2023 collections and 2028 forecasts	'23 collections	'28 forecasts	x	Gen AI works 2028 cannibalisation rates	Weighed penetration rate, including[1]:	=	2028 revenue loss for creators
TV & Radio	€240m	€252m		4%	• Flow programmes of which news, weather, feature stories… • Flow programmes of which sports events, games… • Ads & clips (lower budget) • Stock programmes – of which films, series… • Stock programmes – of which kids animated works		€9m
Digital	€41m	€82m		5%	• AVOD: (weighed penetration rate from market) • SVOD & digital TV • Social media		€4m
Live & Background	€12m	€15m		30%	• Background audiovisual works (considered as highly at risk as Gen AI will enable to broadcast unlimited content in public places, stores…)		€5m
Other sub-streams	€59m	€66m		*Marginal to no impact*			
Total collections	**€352m**	**€415m**				**Total revenue loss for directors & other authors contributing to the making of audiovisual works**	**c. €19m[1] (5%)**

Note: [1] Includes cannibalisation for educational use (potential replacement for tutorials, webinars…) resulting in a €1m revenue loss

Source: PMP Strategy market model, financial reports, Specialized press, Experts' interviews

The revenue loss for translators/adapters and screenwriters have been estimated based on a forecast of 2028 revenues and the application of cannibalisation rates

2 Revenue loss

'23 revenue sub-streams and '28 forecasts			x	Gen AI works 2028 cannibalisation rates		=	2028 revenue loss for creators
	'23 collections	'28 forecasts					
Translation / Adaptation	€28m	€33m		41%	• cannibalisation rate equivalent to the **weighed penetration rates from market size calculations**		€13m
					Total revenue loss for translators/adapters		c. €13m
Screenwriting	€311m	€366m		19%	• cannibalisation rate equivalent to the **weighed penetration rates from market size calculations**		€70m
					Total revenue loss for screenwriters		c. €70m
Total collections (incl. the three categories)	**€690m**	**€814m**			**Total revenue loss in 2028 for audiovisual creators**		c. €0.1 Bn (12%)

 Source: PMP Strategy market model, financial reports, Specialized press, Experts' interviews

Additional Revenue loss calculation for screenwriters, directors & other co-authors

2 Revenue loss

'23 AV production market size (budget) and '28 forecasts

'23 market size: €209Bn

'28 forecasts: €229Bn

Includes streamers & broadcasters original content spending, public fundings and fiscal incitation (i.e., includes also independent production)

x

Share of main segments going to AV creators

For directors & other co-authors

c.4-5%

For screenwriters

c.4-5%

Includes upfront payment and contingent payment from producers

x

Gen AI '28 cannib. Rates by segments

For directors & other co-authors

15%

- Unscripted works
- Higher production budget
- Lower production budget
- Animated works

For screenwriters

20%

- Higher production budget
- Lower production budget
- Animated works

=

'28 creators' revenue loss (and %)

€1.9Bn

B

€1.2Bn

 Source: PMP Strategy analysis, FERA, SAA, European Audiovisual Observatory, Experts' interviews

Additional Revenue loss calculation for authors of audiovisual translations, adaptations and subtitles

2 Revenue loss

'23 worldwide (non CMO-collected) revenues and '28 forecasts x **Gen AI '28 cannib. Rates by segments** = **'28 creators' revenue loss** (and %)

'23 market size

€1.9Bn

'28 forecasts[1]

€2.2Bn

56%

- Higher production budget
- Lower production budget

€1.3Bn

Calculation methodology for the audiovisual segments (1/2)
Complete video/audiovisual works

Audiovisual Gen AI providers' revenues – 2023-2028, €Bn

	Runway 2028 active users' estimation	x	Runway 2028 ARPU	/	Runway market share in prompt-to-video market	=	2028 associated players' total revenues
1. Mass public tools (also suitable/used for professional purposes)	c.4m - 30%		40€		15%		**c. €3.5Bn**

	Video/Audiovisual software market size		x	2028 Generative AI tools penetration rate	=	2028 associated players total revenues
	2023	2028				
2. Gen AI tools/software as an assistant (support in the creative process)	€1.4Bn	€1.9Bn		**40%[1] / Mid**		**€0.8Bn**

Note: [1] Considered as slightly lower as in audiovisual, due weaker maturity of tools to date, and an estimated even more expensive price for these tools in 2028

 Source: PMP Strategy market model, Experts' interviews, Specialized press, Business Research Insights

Calculation methodology for the audiovisual segments (2/2) Dubbing/Subtitling and Screenwriting

Audiovisual Gen AI providers' revenues – 2023-2028, €Bn

	Dubbing/Subtitling software market size (incl. social media)		x	2028 Generative AI tools penetration rate[1]	=	2028 associated players total revenues
	2023	2028				
Dubbing / Subtitling tools	€1.3Bn	€1.9Bn		41%		€0.9Bn

	Screenwriting software market size		x	2028 Generative AI tools penetration rate	=	2028 associated players total revenues
	2023	2028				
Screenwriting tools	€140m	€230m		60% / High		€125m

Note: [1] Based on weighed penetration rate calculated in the market segment | [2] Higher rate as in the market calculation, as such software are widely used for audiovisual content that is not intended to generate revenue or is not widely distributed (corporate content, content for social networks)

Source: PMP Strategy market model, Experts' interviews, Specialized press, Business Research Insights

Appendix

Detailed methodology and assumptions

Glossary

Detailed list of interviews conducted

PMP Strategy presentation

Glossary | Main abbreviations and definitions (1/2)

- **AV**: Audiovisual
- **ARPU:** Average Revenue Per User
- **B2B (Business-to-Business):** Refers to transactions between businesses, such as a manufacturer selling to a wholesaler. Examples include companies providing office supplies to other businesses
- **B2C (Business-to-Consumer):** Businesses selling products or services directly to individual consumers. Examples include online retailers like Amazon.
- **Buy-out**: A one-time payment for the full rights to use a creative work, with no future royalties owed to the creator.
- **CAGR:** Compound Annual Growth Rate
- **CMO**: Collective Management Organization
- **Deep Learning:** A subset of machine learning involving neural networks with many layers, enabling the analysis and learning from large amounts of complex data.
- **DSPs (Digital Service Providers)**: In the context of music streaming, Digital Service Providers are online platforms that distribute and stream music to listeners. Examples include Spotify, Apple Music, and Amazon Music.
- **GAFAM**: Acronym for Google, Apple, Facebook, Amazon, and Microsoft
- **Gen AI** (Generative Artificial Intelligence): AI systems that generate new content based on training data.
- **Input**: The data or information fed into an AI system or algorithm for processing and analysis.
- **LLM** (Large Language Model): A type of artificial intelligence model trained on vast amounts of text data to understand and generate human language.
- **Machine Learning:** A branch of artificial intelligence where algorithms learn from and make predictions or decisions based on data.
- **NLP** (Natural Language Processing): A field of artificial intelligence focused on the interaction between computers and humans through natural language.
- **OTT:** Over the top, self-distribution model outside the operator set-top box: content accessible directly through an app/website on all devices (smart TVs, smartphones, tablets, etc.)

Glossary | Main abbreviations and definitions (2/2)

- **Output**: The result or product generated by an AI system, such as text, images, or other data.
- **Pay-per-view (TVoD):** a television service in which viewers are required to pay a fee in order to watch a specific programme.
- **UGC** (User-Generated Content): Content created and published by users rather than by professional creators or brands, often shared on social media and other online platforms.
- **VOD:** Video-on-demand
  - **AVOD:** Advertising video on demand, i.e. advertised-funded digital video platforms (YouTube, Social Media)
  - **BVOD:** Broadcaster Video On Demand, free-access streaming platforms from local broadcasters (VRT MAX, VTM Go, Go Play)
  - **HVOD:** Hybrid video on demand, combining several business models (advertised-funded and subscription/consumer-funded for instance)
  - **SVOD:** Subscription video on demand, traditional streaming platforms, including international players (Netflix, Disney+, etc.) and local players (Streamz)
  - **FAST**: Free ad-supported streaming TV

Appendix

Detailed methodology and assumptions

Glossary

Detailed list of interviews conducted

PMP Strategy presentation

Interviews | CMOs (1/2)

Name	Company	Repertoire
Marie-Anne Ferry-Fall & Thierry Maillard	ADAGP	Visual Arts
Dean Ormston & Richard Mallett	APRA AMCO	Music
Christian Zimmermann & Reema Selhi	DACS	Visual Arts
Ricardo Gómez Cabaleiro	DAMA	Audiovisual
Tobias Holzmüller & Kai Welp	GEMA	Music
Kazumasa Izawa & Kay Yamaguchi	JASRAC	Music
Chu Ga Yeoul & Seon Cheol Hwang	KOMCA	Music
Andrea Czapary Martin & John Mottram	PRS	Music
Alexandra Cardona Restrepo	REDES	Audiovisual
Géraldine Loulergue-Husson & Patrick Raude & Sandrine Sandoval	SACD	Audiovisual
Héloïse Fontanel	Sacem	Music
Julien Dumon	Sacem	Music
David El Sayegh	Sacem	Music
Julien Lefebvre	Sacem	Music

Interviews | CMOs (2/2)

Name	Company	Repertoire
Annabell Lebethe	SAMRO	Music
Cristina Perpiñá-Robert Navarro	SGAE	Transversal
Matteo Fedeli & Fabrizio Zavagli & Adriana Galli & Andrea Marzulli	SIAE	Transversal
Jennifer Brown	SOCAN	Music
Jürg Ruchti	SSA	Audiovisual
Marcelo Bastos Castello Branco & collaborators	UBC	Music
Sylwia Biadun	ZAPA	Audiovisual
Vianney Beaudeu & Raphaël Léaupard	LaScam	Audiovisual
Maria Garateche	Argentores	Audiovisual
Richard Combes	ALCS	Audiovisual

Interviews | Tech players

Name	Company	Repertoire
Àlex Loscos	BMAT	Music
Ed Newton Rex	Fairly Trained	Transversal
Ryan Groves	Infinite Album	Music / Audiovisual
Nathalie Birocheau	Ircam Amplify	Music
Alexandre Défossez	Kyutai	Transversal
Philippe Guillaud	Matchtune	Music
Eric Samson	Microsoft	Transversal
Christophe Müller & Kevin Montler	YouTube / Google	Transversal

 Source: Experts' interviews

Interviews | Production, Distribution, Publishing companies

Name	Company	Organisation type
Pierre-Michel Levallois	BAM Music	Production Company
Aurélien Hérault	Deezer	DSP
Mathieu Taieb	Dubbing Brothers	Production Company
Perrine Guyomard	Ex-Warner / Sacem Lab	Production Company / CMO
Tiphaine Des Déserts	Getty Image	Production & Publishing
Michael Turbot	Sony Computer Science Laboratories	Production Company
Anne Jouanneau	Sony Music Publishing	Publishing Company

 Source: Experts' interviews

Interviews | Institutions, Legal bodies and other organisations

Name	Company	Repertoire
Marion Carré	Ask Mona / Commission Européenne	Transversal
Sylvie Fodor	CEPIC	Visual Arts
Cécile Lacoue	CNC	Audiovisual
Arshia Cont	Ex-Ircam / Antescofo	Music
John Phelan	ICMP	Music
Lauri Rechard, Abbas Lightwalla	IFPI	Music
Alfons Karabuda	NIM / ECSA	Music
Alexandra Bensamoun	Paris Saclay / Commission interministérielle de l'IA	Transversal
Benoît Carré	SGYGGE / Ministère de la Culture	Music
Isabelle Wekstein-Steg	WAN AVOCATS	Transversal
Juliette Prissard	Eurocinema	Audiovisual
Céline Despringre	SAA	Audiovisual
Pauline Durand-Vialle	FERA	Audiovisual
Gilles Fontaine	European Audiovisual Observatory	Audiovisual
Eduardo Senna & Matheus Leopardi	Senna Advogados	Audiovisual

Appendix

Detailed methodology and assumptions

Glossary

Detailed list of interviews conducted

PMP Strategy presentation

PMP Strategy
positive impact

A Strategic Consulting Firm

Your business environment is changing faster and faster. **We already know that we will not work or consume tomorrow as we do today.**

We have learned that we need to be able to adapt quickly to major disruptions, which are unpredictable by nature. And that it is no longer acceptable to impact business performance without taking into consideration the world we live in.

At PMP Strategy, we are committed to working with senior executives to achieve both goals and create a positive impact.

Just as you are, we are true experts in your market. We apply rigorous analysis, leveraging our high level of competence and understanding. **We believe that there is no positive impact without great conviction and the total mobilisation of a diversified team.**

We cannot address today's problems with yesterday's answers. We are dedicated to finding tailor-made and innovative solutions, as if we were doing it for ourselves. **We are always focused on working with you and your teams, hand in hand, with the entrepreneurial spirit that motivates us.**

We strongly believe in diversity, human commitment and openness. These are the values that forge the strong relationships and mutual trust that we cultivate with our clients.

PMP Strategy is a renowned consulting firm in the **Media & Cultural industries**, helping its clients adapt their business models and organisations in a market disrupted by digital "pure players".

PMP Strategy, Posit+ve Impact

Industries

- Telecom Media Tech
- Transportation & Mobility
- Energy & Industry Decarbonization
- Financial Services & Institutions
- Cultural & Creative Industries

Capabilities

- Strategy & Transformation
- Private Equity
- Digital, Data & Customer Experience
- CFO Advisory and Integrated Performance CSR-ESG

PMP Strategy: An International Player

Europe

Paris, London, Madrid, Brussels, Luxembourg

Africa & Middle East

Dubai, Casablanca

North America

New York, Montreal, Seattle, Toronto

Key figures

11 Offices. +150 Consultants. +100 Expert Advisors.

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