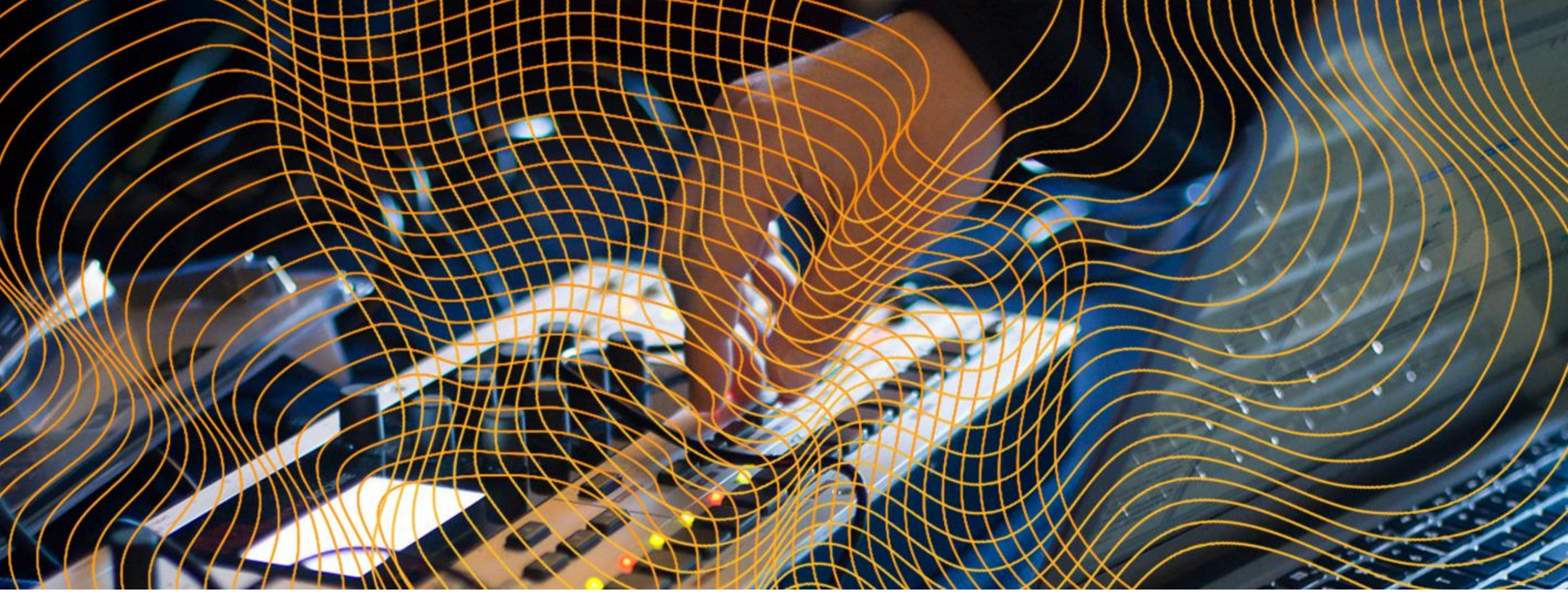


AI AND MUSIC

MARKET DEVELOPMENT OF AI IN THE MUSIC SECTOR AND IMPACT ON MUSIC CREATORS IN AUSTRALIA AND NEW ZEALAND

AUGUST 2024

PHOTO: YANA AMUR

A REPORT COMMISSIONED BY

APRA AMCOS

CONDUCTED BY

GOLDMEDIA

Dean Ormston

CEO, APRA AMCOS

Photo: Daniel Boud

"By commissioning this report, APRA AMCOS aims to explore the relationship between music and artificial intelligence (AI), highlighting the economic and cultural implications within this rapidly evolving market. Based on extensive expert interviews and a comprehensive survey, the report captures the perspectives of creative professionals across Australia and New Zealand. The high participation rate indicates the deep concern within the music industry regarding AI's impact.

"The survey reveals that many Australian and New Zealand songwriters, composers and music publishers are early adopters of AI technology. However, there is an almost universal and urgent call for government to do much more to protect the livelihoods of creators. Over the past two years, APRA AMCOS has voiced concerns about the lack of transparency in generative AI platforms. These platforms must acknowledge the creative content they scrape and copy, which is essential for generating AI outputs.

"Creators invest significant time and effort into their work, yet their intellectual property is exploited by AI platforms without credit, consent or compensation. This unauthorised use poses a serious threat to the economic and cultural landscape, potentially damaging careers and businesses, including those of First Nations creators. The issue lies not in the technology itself, but in the secretive corporate practices that erode trust within the global creative sector.

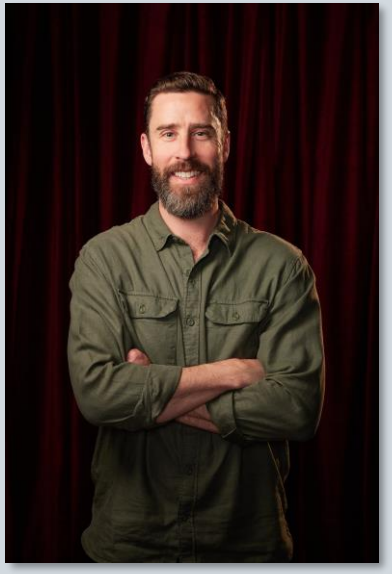
"For a generative AI market to be fair, equitable and sustainable, it must rest on a solid regulatory foundation that upholds the rights of human creators and protects their intellectual property. Transparency is crucial to this process.

"Australia and New Zealand have the chance to lead globally in ensuring the creative sector benefits from the projected wealth generation of generative AI. This report provides essential data and insights, underscoring the significant contributions of contemporary music locally and globally. It aims to support informed decision-making, helping to establish a robust policy and regulatory framework during a pivotal moment in technological and business evolution."

"As Chair of APRA and a fellow songwriter and artist, I am proud to support this vital examination of AI's role in our industry. At its core, music is a deeply human endeavor, a reflection of our emotions, stories and cultures. The emergence of AI challenges us to rethink how we create and protect this expression. While technology can enhance our creative processes, it is essential that we preserve the integrity and recognition of human artistry. This report underscores the importance of ensuring that AI serves as a tool for empowerment rather than exploitation. By safeguarding the rights and livelihoods of songwriters and composers, we can foster a future where innovation and creativity coexist harmoniously."

Jenny Morris, MNZM OAM

Chair, APRA



"This groundbreaking report highlights the need to balance innovation with the protection of creators' rights. Music publishing has always been about nurturing and valuing the hard work of songwriters and composers. While AI offers exciting possibilities, it is essential that it complements rather than compromises the efforts of music publishers in supporting Australia and New Zealand's extraordinary musical talent and preserving artistic integrity. This report serves as a signpost pointing to a future where technology and human creativity can thrive together. The report is also clear: government intervention to protect the copyright of songwriters and composers is critical to ensure that both Australia and New Zealand have a viable local music industry that can continue to be celebrated around the globe."

Jaime Gough

Chair, AMCOS

Photos: Daniel Boud

PHOTO: AMANDA RATCLIFFE

CONTENTS

Introduction	5
Key Facts	7
Part 1: The Market for AI and Music	13
Part 2: AI in the Music Creation Process	24
Part 3: Challenges	49
Fields of Action	106
AI and Aboriginal and Torres Strait Islander Music	114
AI and Māori Music	123
Appendix	131

ABOUT THE STUDY

On behalf of APRA AMCOS, Goldmedia conducted a comprehensive study between May and July 2024 on the integration of Artificial Intelligence (AI) within the Australian and New Zealand music sector.

STUDY METHODOLOGY

Goldmedia conducted an extensive secondary data analysis on the opportunities and challenges presented by AI in the music sector. This analysis covered AI's influence on the creative process, economic implications, and legal and political developments.

At the core of the study was an online survey of APRA AMCOS members conducted between 31 May and 20 June 2024. A total of 4,274 songwriters, composers, and publishers participated in the survey.

Two additional surveys were conducted to explore the impact of AI on Aboriginal and Torres Strait Islander musicians (38 participants) as well as Māori musicians (53 participants).

In addition, the study included eight expert interviews with artists, academics, AI software providers, and other stakeholders in the music sector. These interviews were conducted either in writing or through live video calls.

STUDY FOCUS

The main focus of this study is on the impact and implications of generative AI (Gen AI) in the music sector.

However, the range of applications of AI in music is broad, and the creation of complete pieces of music is only the tip of the possible fields of application. Thus, the study also looks at applications that relate to the editing and post-processing of music, as well as the supporting aspects of AI such as marketing, promotion, and distribution.

Furthermore, many questions and topics in this study not only include the creation of music in the narrower sense but also creative processes in general.

ABOUT APRA AMCOS

APRA AMCOS is a music rights management organisation representing over 119,000 songwriters, composers, and music publishers in Australia and New Zealand. It licenses music for public performance, communication and reproduction, ensuring compensation for creators and supporting the music industry's growth.

OVERVIEW

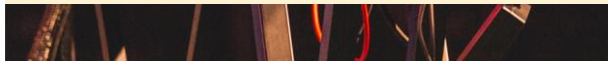
The study consists of three main parts: the market for AI and music, AI in the music creation process, and challenges.

PART 1

THE MARKET FOR AI AND MUSIC

The initial section of the study offers a comprehensive overview of the history and key milestones at the intersection of AI and music, delving into its technical underpinnings, various AI models, and practical applications in the music sector.

Furthermore, it presents detailed insights into AI investments, market size, and future projections within this dynamic field.



PART 2

AI IN THE MUSIC CREATION PROCESS

The second part of the study concentrates on the opportunities and risks of AI in the music sector, supported by secondary data analysis, use cases, expert interviews, and findings from the online survey.

It examines AI's impact on the creative process of music, also encompassing aspects such as recording, editing, mixing, mastering, as well as marketing, promotion, and distribution.

PART 3

CHALLENGES

The third part of the study identifies the primary challenges at the intersection of AI in music and presents the demands of music creators in Australia and New Zealand. It's categorised into four key areas:

- Copyright, Credit, Consent
- Remuneration and Economic Implications
- Personal Rights
- AI and Music Streaming

Photos: Jacinta Keefe (left, centre); Adam Davis-Powell (right)

PHOTO: ADAM DAVIS-POWELL

KEY FACTS

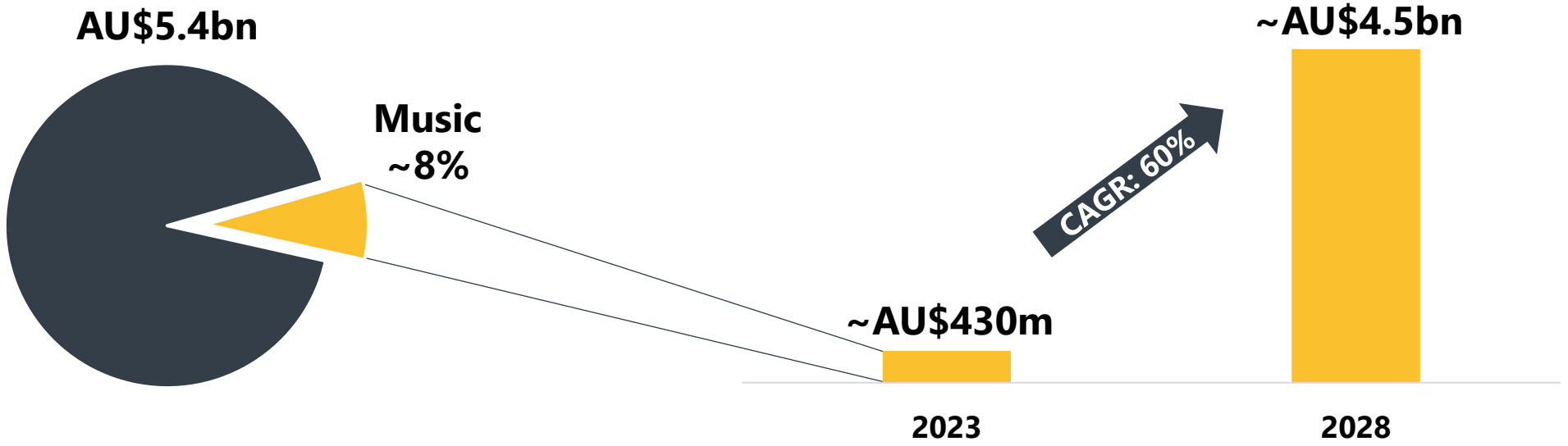
AI AND MUSIC: MARKET DEVELOPMENT

Artificial intelligence is gaining significant momentum in the Australian and New Zealand markets. In Australia, a remarkable 68% of companies have already implemented AI technologies[1]; in New Zealand, the figure is around 50%[2]. About AU$7.0bn has been invested in AI technologies in both countries: about AU$6.4bn in Australia and AU$600m in New Zealand.[3]

The music sector has also been strongly impacted, with significant investments in AI applications spanning music creation, support activities, and distribution.

In 2023, the total global market for generative AI was estimated at AU$5.4bn in revenue.[4] Of this, music applications accounted for AU$430m which corresponds to 8% of the total market.[5]
The music AI market is expected to grow more than tenfold by 2028, with a compound annual growth rate (CAGR) of around 60%[6], to over AU$4.5bn.
This means that in only a few years the market will reach a size that corresponds to 28% of the global music copyright collections in 2022.[7]

GLOBAL GENERATIVE AI MARKET VOLUME AND SHARE OF GENERATIVE AI IN MUSIC, 2023, IN AU$



FORECAST: GLOBAL MARKET VOLUME OF GENERATIVE AI IN MUSIC, 2023 AND 2028, IN AU$

Source: Goldmedia analysis. [1] CSIRO (2023); [2] Datacom (2023); [3] OECD.AI (2024); [4, 6] S&P Global Market Intelligence (2023); [5] Market.us (2023); [7] CISAC (2023a). Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

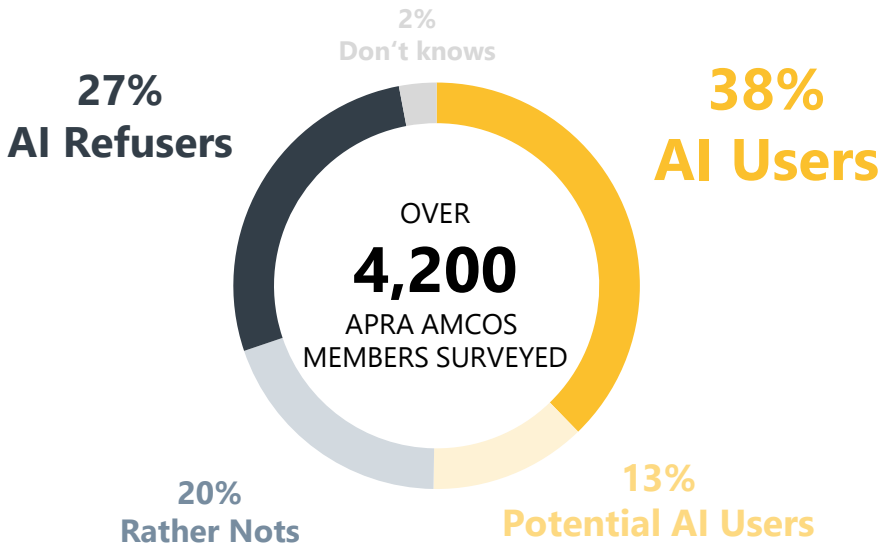
USE AND ASSESSMENT OF AI IN MUSIC BY MUSIC CREATORS IN AUSTRALIA AND NEW ZEALAND

Music creators in Australia and New Zealand are early adopters, with many surveyed in this study already using AI in their work.

38% of the over 4,200 APRA AMCOS members surveyed for this study **have used AI in their work with music and creation in general**.

45% This figure is even higher for those **aged between 45 and 54**.

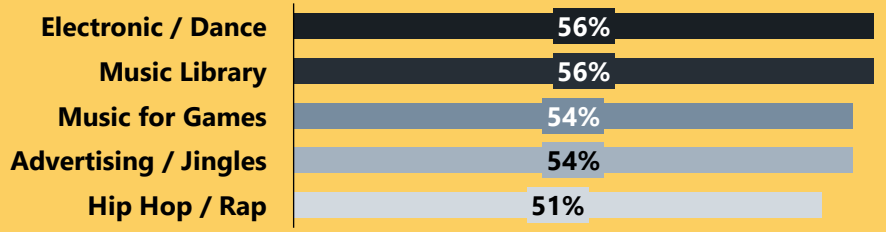
AI USE AMONG APRA AMCOS MEMBERS, 2024



54% agree **AI can support the human creative process**.

AI is most used by music creators in Australia and New Zealand in these specific categories:

TOP 5 CATEGORIES, 2024



69% believe that AI will most likely be adopted in **the creation of promo content and the creative process**, as well as recording, editing, mixing and mastering (63%), and marketing (59%).

33% already use AI technologies in their work with music and creation in general on a regular basis. **5%** even use AI always or almost always.

49% **agree that AI can and will open up new forms of creativity.** 17% of those fully agree with this statement.

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,274. Basis: APRA AMCOS members.

AI-GENERATED GAP OF UP TO 23% FOR AU/NZ MUSIC CREATORS' REVENUES WHILE THERE IS NO REMUNERATION FOR HUMAN-MADE INPUT TO DATE

Traditional revenue streams are under severe pressure from Gen AI for many music creators. **It can be assumed that by 2028, 23% of music creators' revenues will be at risk due to Gen AI. This corresponds to an estimated potential damage of AU$227m in 2028 alone and a cumulative total damage for the period 2024-2028 of around AU$519m.** Increasingly predatory competition is to be expected for creators, especially in areas where AI is particularly likely to replace existing human-made music.

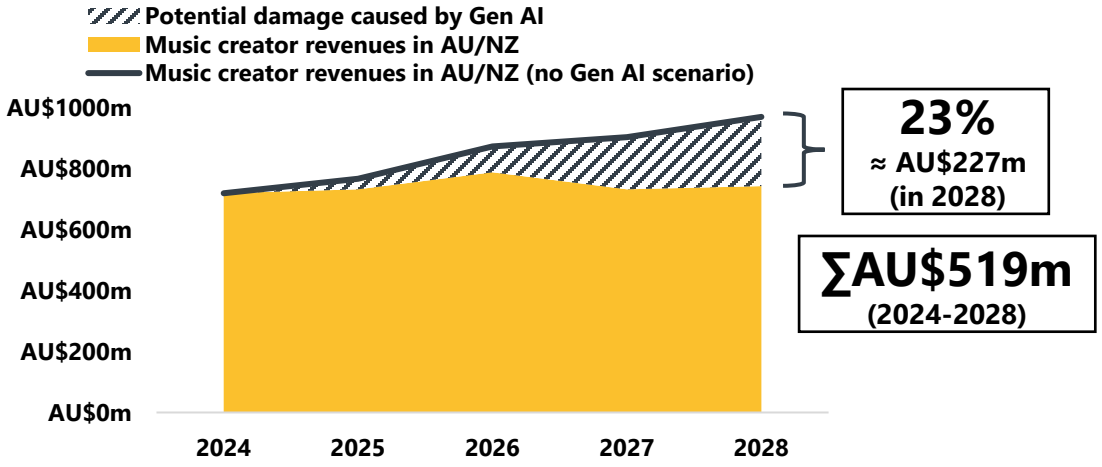
82%

of music creators in Australia and New Zealand in the survey are concerned that the use of AI in music could lead to music creators no longer being able to make a living from their work.[1]

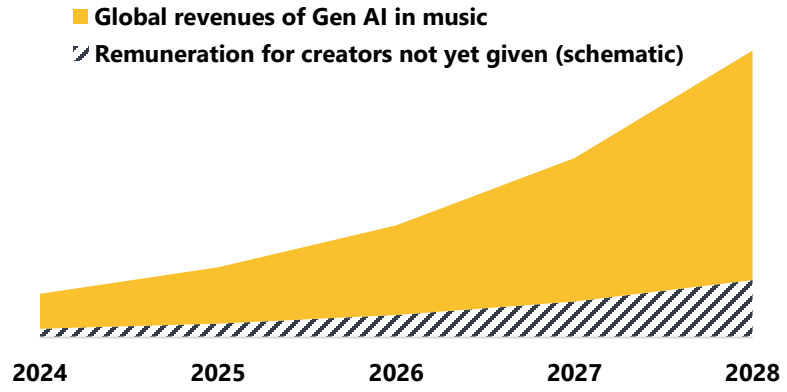
Despite the fact that copyrighted music is used as training data for Gen AI models and therefore forms the fundamental basis for the origin and development of the market, music creators do not participate in the immense growth prospects.

So far, there is no remuneration system that closes the AI-generated financial gap for music creators.

MUSIC CREATORS' REVENUES AT RISK DUE TO GEN AI, 2024-2028



REMUNERATION NOT YET GIVEN FOR COPYRIGHTED MUSIC USED AS TRAINING DATA FOR GEN AI, 2023-2028 (SCHEMATIC)[2]



Source: Goldmedia analysis based on internal data by APRA AMCOS. [1] Goldmedia survey on behalf of APRA AMCOS (2024), n=4,201. Basis: APRA AMCOS members.
[2] The graph shows global revenues of Gen AI in music from 2024 (ca. AU$0.7bn) to 2028 (ca. AU$4.5bn) and an estimate of the remuneration for creators not yet given.

LEGAL AND POLITICAL DEMANDS OF MUSIC CREATORS IN AUSTRALIA AND NEW ZEALAND

In Australia and New Zealand, there is ongoing debate about whether tech companies offering generative AI systems for commercial use can incorporate copyrighted material without permission, and the conditions under which any use of copyrighted inputs would be acceptable.

The attitude of APRA AMCOS members surveyed for this study in this context is clear:

The overwhelming majority of music creators demand credit, transparency, consent and fair remuneration when their work is used in any context of Gen AI in music. They stress the importance of clear rules and regulations for the use of copyrighted works.

ATTENTION

97% demand that policymakers should pay more attention to the challenges related to AI and copyright.

CREDIT AND TRANSPARENCY

96% demand that AI providers should be obliged to disclose when they use copyrighted works as training data.

93% request that AI-generated music tracks and other types of works should be identified as such.

CONSENT

95% assert that copyright holders must be asked for permission before their works are used as input for AI systems.

REMUNERATION

93% call for copyright holders to be involved commercially when their works are used as input in AI training data sets (e.g., through a licence agreement).

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,274. Basis: APRA AMCOS members.

"Australasia plays a crucial role in the development of music technology, including AI, due to its population, technical talent, and notably, its music talent.

*"**Population:** Australasia has served as an important test market for tech companies, ranging from music streamers to social platforms. With a population of approximately 30 million, Australia's sizable yet manageable market is ideal for testing new features. As a result, Australasian populations often gain access to new and beta tools first, making them a trusted "focus group" for companies to gauge product demand.*

*"**Technical Talent:** Australasia's universities, such as the University of New South Wales and the University of Queensland, are fostering significant technical talent. This talent pool supports the region's emergence as a hub of innovation. Companies like Atlassian, Canva, and other unicorns have expanded from Australasia to become global tech giants. Notably, generative AI music has roots in Australia. Splash, founded in 2017, was an early pioneer in this field, generating piano MIDI and predicting subsequent note sequences.*

*"**Music Talent:** Australia's music scene is distinctive and influential, producing global superstars like The Kid Laroi, Troye Sivan, and Kylie Minogue. It is crucial to protect our homegrown artists, their work, and their rights from AI misuse to maintain the vitality of our local music scene."*

Tracy Chan

CEO of AI music company Splash

Photo supplied

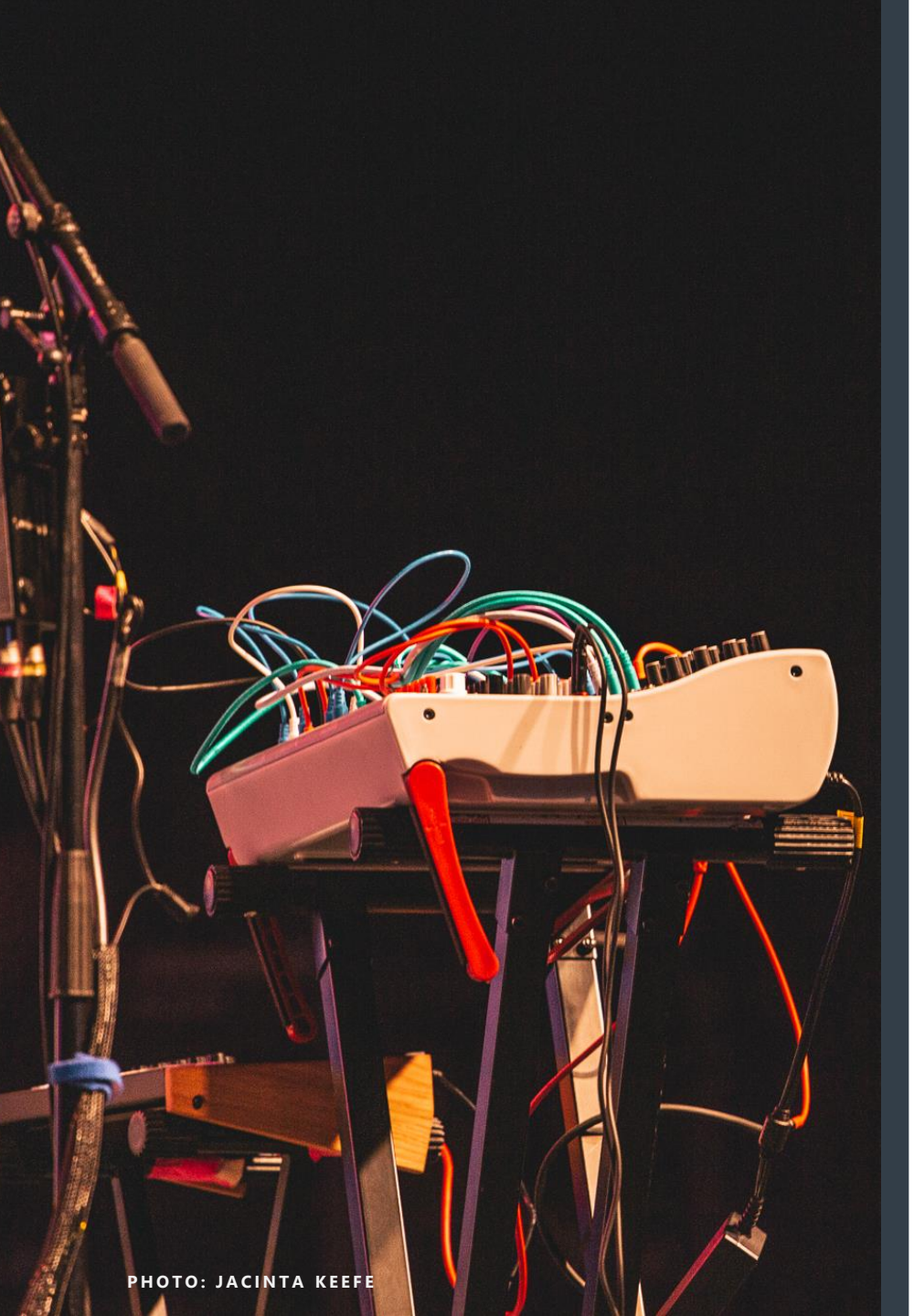


PHOTO: JACINTA KEEFE

PART 1: THE MARKET FOR AI AND MUSIC

Overview

Market Volume and Development

MILESTONES IN AI AND MUSIC

As early as 1936, Alan Turing proved that a "calculating machine" could carry out cognitive processes. This laid the foundation for the development of artificial intelligence. The term was first used in 1956. In 1966, the first chatbot was developed, and in 1986 the first digital computer voice was created. With the rapid progress of digitalisation from the 1990s onwards, developments in the field of AI are accelerating.

More recently, with the launch of the first music streaming platforms, AI has also found its way into the music sector via automated playlists and recommendations. The breakthrough of generative AI and its rapid spread to the public took place in November 2022, when ChatGPT was made freely available by OpenAI for the first time. Since then, numerous generative AI applications have also been created and published in the field of music.

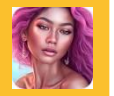
1997
"**Deep Blue**" chess computer is developed.

Since 2010
AI tools are introduced to the music sector. The first **computer-generated pieces of music** (Lamus Computer) and **albums** (by the "Emily Howell" program) are created.

2017
The use of AI enables the creation of **deepfakes** (realistic-looking video and audio recordings).

2018
The AI music generator "**Boomy**" is released.

2022
Lensa's "**Magic Avatars**" uses AI to create portraits from uploaded selfies in various styles and settings. OpenAI makes **ChatGPT-3** and image generator **DALL·E** freely available to the public.



2024
SORA by OpenAI creates the first **music video using AI**. AI music platforms **UDIO** and **SUNO** are sued by record labels for allegedly stealing copyrighted music to generate AI sounds.

MILESTONES IN AI

1997 [...] 2006 [...] 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

MILESTONES IN MUSIC

1997
CD sales reach their peak.

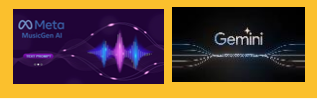
2006
Market launch of **Spotify**.

2012
Sony develops "**Flow Machines**", a tool for automated music composition.

2016
Google develops the AI music production tool "**Magenta**".

2019
OpenAI releases "**MuseNet**", a deep neural network that can be used to create music compositions.

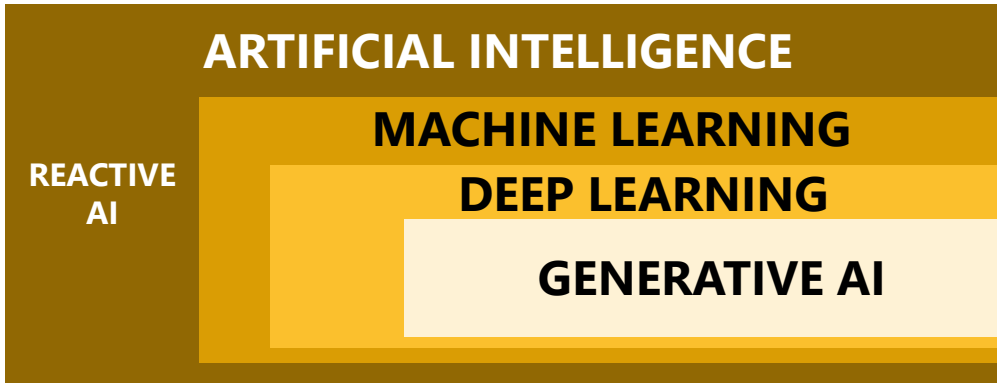
2023
Numerous AI tools and applications in the field of music emerge, e.g., Meta's "**MusicGen**". Google launches its AI model "**Gemini**".



2024
The EU parliament establishes a comprehensive regulatory framework for AI (**AI Act**), marking it the first of its kind globally.

Source: Goldmedia analysis. Logos/Screenshots: Company information.

FROM REACTIVE TO GENERATIVE ARTIFICIAL INTELLIGENCE



The field of AI encompasses information technology methods that normally require human intellect. In contrast to traditional information systems, their strength lies in the processing of unstructured data (i.e., continuous text, images and music) and in their cognitive potential – i.e., precisely in the human-like approach.[1]

The key to understanding AI lies in the transfer of a process that is actually a human process to technology – learning. The learning process is either rule-based or experience-based.

In the rule-based approach (also known as reactive or analytical AI), rigid rules and regulations are defined rules that are consistently applied by the machine to the data to be processed. However, this approach can quickly reach its limits, as countless rules would have to be defined for the various cases. One example of reactive AI is the chess program "Deep Blue", which defeated the world champion Garri Kasparov in 1997.

In contrast, the experience-based approach works the other way around, by creating and training a model based on examples[2] particularly in the form of big data.[3]

Machine learning (ML) is based on the fundamental idea that machines learn through experience and thus continuously im-prove their performance.[4] Based on data covering a specific subject area that the machine receives for learning, patterns are recognised, classified and transferred into a model that the machine can use to work with other data after training.

Deep learning (DL) is an advanced ML method. Artificial neural networks (ANN) are used to learn in depth and in a human-like manner.[5] The machine replicates neurons and their networking in the brain based on the human model. An input is processed in several stages, in so-called layers, until the machine achieves the desired output. This means that even very complex tasks can be solved. DL is responsible for successes in speech, text, image and video processing.[6]

As the term suggests, generative AI is about not only recognising and classifying data, but also generating it. To this end, algorithms based on artificial intelligence are trained with huge datasets in order to recognise patterns. Generative models then attempt to imitate these patterns and create them themselves without being given explicit rules. The AI itself recognises which solution is most suitable for a problem.

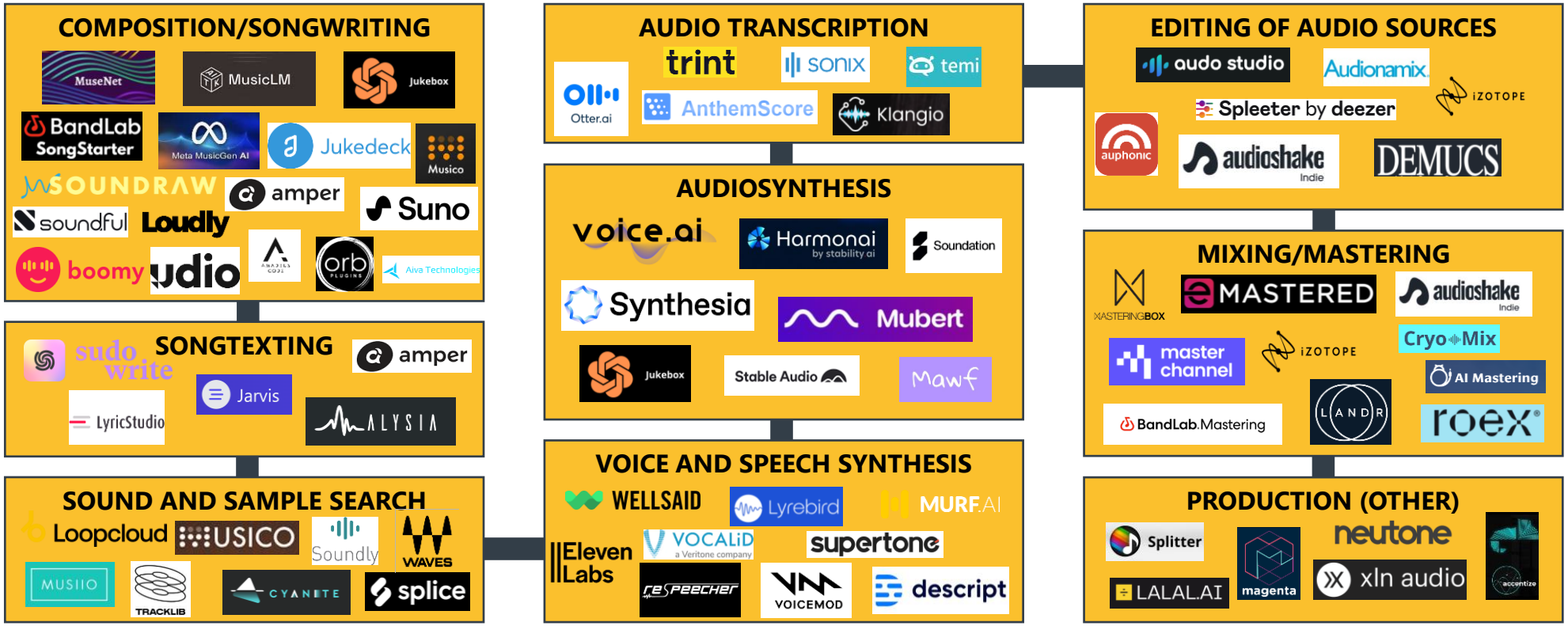
APRA AMCOS

Source: Goldmedia analysis. [1] IBM; [2, 4] IBM; [3] Kersting & Meyer (2018); [5] Kreutzer & Sirrenberg (2019); [6] Bomke (2023).

THE MUSIC AI ECOSYSTEM

The release of ChatGPT in November 2022 triggered an "AI boom", which is reflected in the large number of AI-specific start-ups and investments in AI by established companies. There are now also innumerable AI companies in the field of music creation, production and other areas of the music sector. The overview below gives an impression of this diversity, with new start-ups being added to the list every day.

OVERVIEW OF AI COMPANIES IN THE AUDIO SECTOR, 2024



Source: Goldmedia analysis based on Water & Music (2023). Logos/Screenshots: Company information.

PHOTO: JACINTA KEEFE

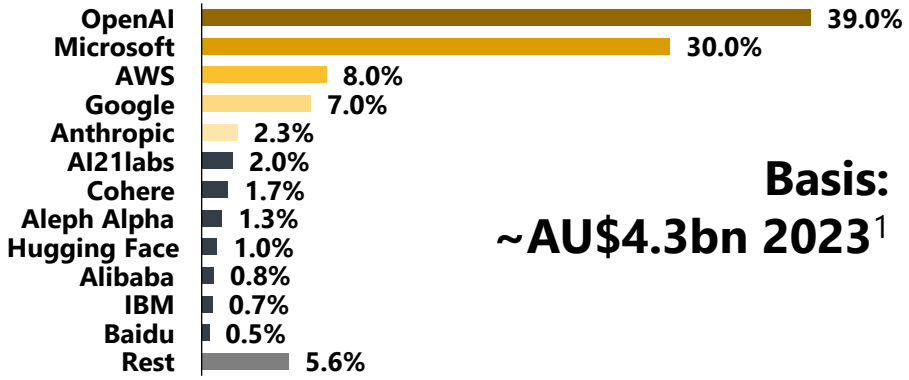
PART 1: THE MARKET FOR AI AND MUSIC

Overview

Market Volume and Development

FOUNDATION MODELS AND MUSIC APPLICATIONS

OVERVIEW AND ESTIMATED MARKET SHARES OF GENERATIVE AI MODELS AND PLATFORMS, IN %, 2023



Basis: ~AU$4.3bn 2023[1]

SELECTED GENERATIVE AI COMPANIES, THEIR MODELS AND MUSIC APPLICATIONS, 2023

COMPANY	MODEL	MUSIC APP.
Google	PaLM 2, BERT, Gemini	MusicLM
Meta	LLaMA	Meta MusicGen AI
OpenAI	DALL•E, GPT-4	MuseNet, Jukebox
shutterstock	MPT-7B	amper music
stability.ai	Stable Diffusion XL	Harmonai, Stable Audio

Foundation models are large-scale machine learning models pre-trained on extensive datasets. These models are trained to learn general-purpose representations across various types of data, including text, images, video and audio. Their key strengths lie in their size, pre-training, self-supervised learning, generalisability and adaptability.

Foundation models are not designed for one specific task but are built to understand and interact with data in a human-like manner. They can be customised to perform a wide variety of tasks, demonstrating their versatility and efficiency in applications designed, for example, for creating music.

OpenAI, as the fastest rising technical service ever, is considered the technical and quality leader. While it has the biggest share of the foundational models and platforms market in 2023 (39%), Microsoft as a shareholder in OpenAI has to be seen as by far the largest player in the market for generative AI with a combined market share of 69%. Amazon and Google follow with 8% and 7%. Both of these companies also invested large amounts into Anthropic, whose current market share is 2.3%.

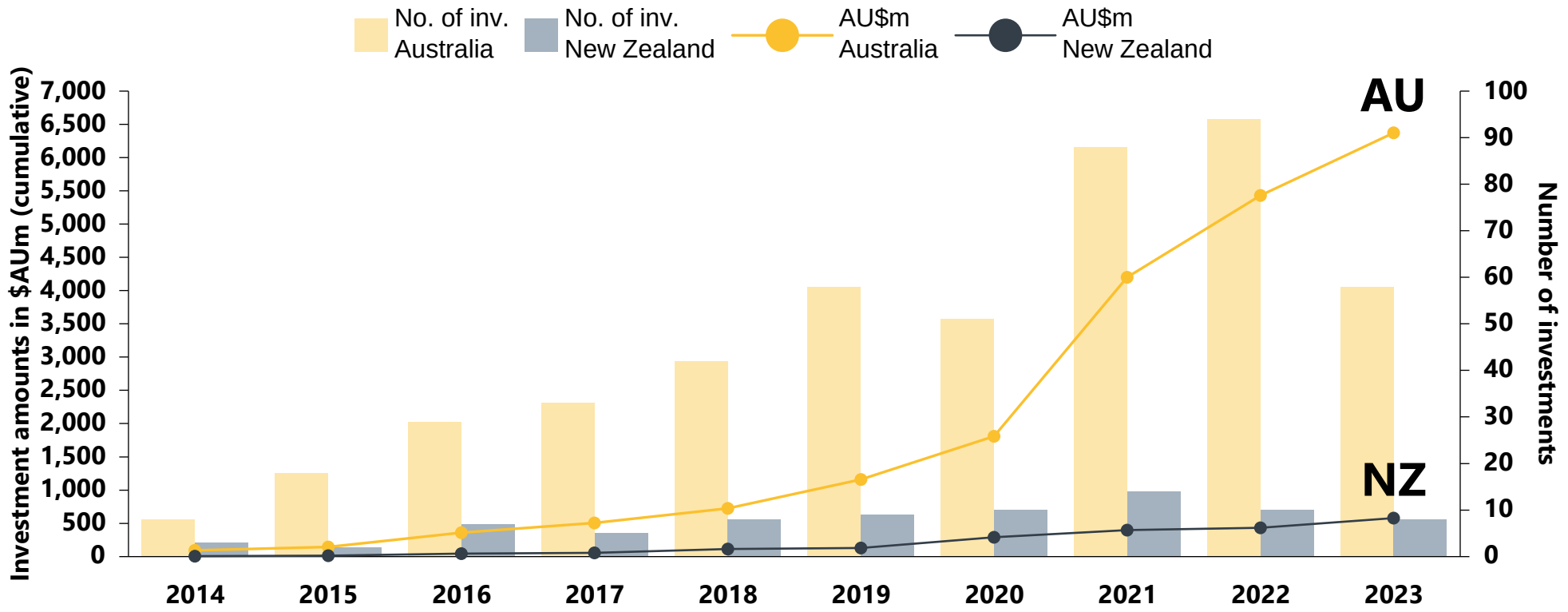
There are numerous companies creating foundation models which are then used for AI music applications. Examples include MuseNet by OpenAI, MusicGen by Meta, the tools MusicLM by Google and Stable Audio by Stability AI. While some still have the status of research project, others are open access or, like Stable Audio, already have a business model and a stock pricing.

Source: Goldmedia analysis based on [1] IOT Analytics (2023) and DeLucia (2023). Logos/Screenshots: Company information.
Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

INVESTMENTS IN AI IN AUSTRALIA AND NEW ZEALAND

Investment in AI has been on the rise in Australia and New Zealand. According to an estimate by the Organisation for Economic Co-Operation and Development (OECD), investment has surged in both countries, especially since 2020. In Australia, the total sum for AI investments has approached around $AU6,400m, while in New Zealand, it has neared around $AU600m. There were around 70 investments in AI in 2023 in both countries combined, down from around 105 in 2022.

DEVELOPMENT OF INVESTMENTS IN AI IN AUSTRALIA AND NEW ZEALAND, 2014-2023, IN AU$M



Source: Goldmedia analysis based on OECD.AI (2024).
Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

INVESTMENTS IN MUSIC-RELATED GEN AI COMPANIES

AI can now assist in every aspect of music creation. Start-ups are continually entering the music market with strong investor backing, providing a wide range of services to music creators. Investment in AI-driven music start-ups and companies continues to grow, reaching into the hundreds of millions.

SELECTED INVESTMENTS INTO MUSIC-RELATED GENERATIVE AI COMPANIES, 2017-2024

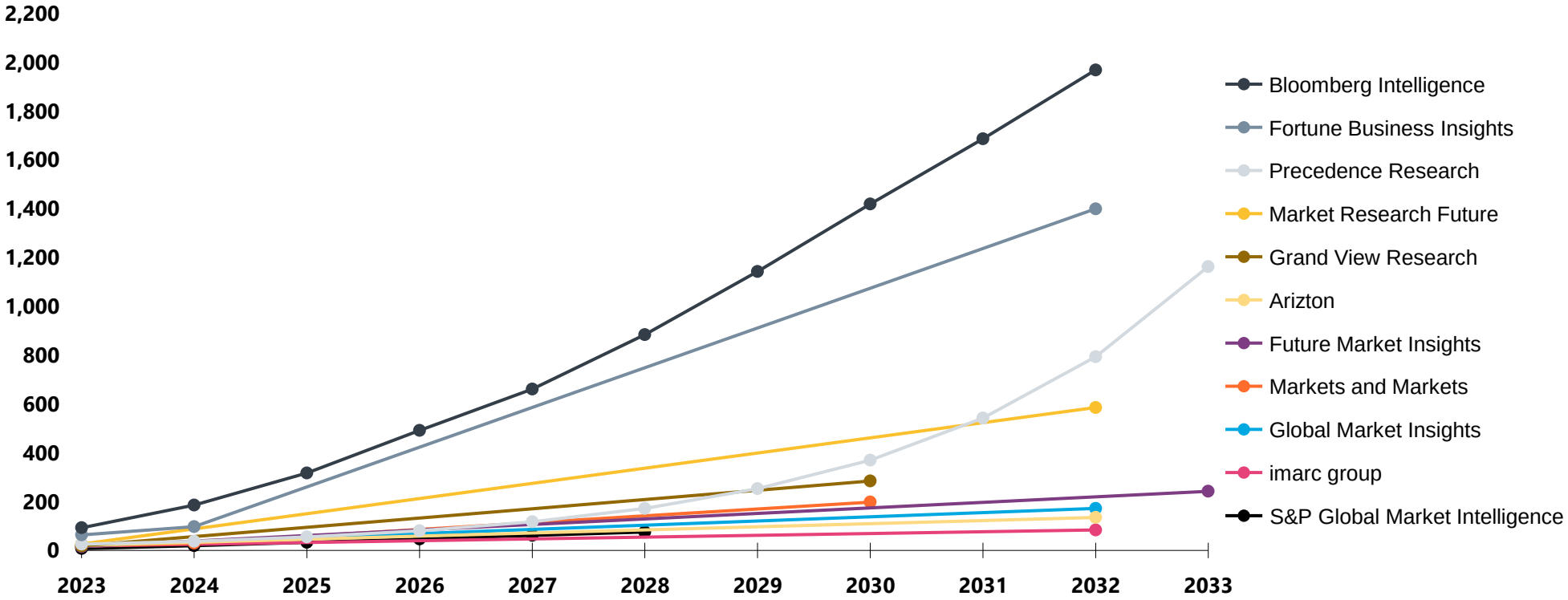
COMPANY	TYPE OF SERVICE	INVESTMENT	YEAR	INVESTMENT COMPANY
Melodics	Learning and making music	**AU$1.7m**	2017	Ableton AG, 500 Startups, Tuhua Ventures, K1W1, Alex Rigopulos
Splash	AI-powered creation of music and performances to live audiences in virtual venues	**AU$29.0m**	2021	Alexa Fund, BITKRAFT Ventures, Khosla Ventures, King River Capital
LifeScore	Creation of personalised playlists tailored to the listener	**AU$20.9m**	2022	Octopus Ventures, Warner Music Group, IDEO, 4 Good Ventures
enote	Digitised sheet music, conversion of audio files into sheet music	**AU$15.2m**	2023	DvH Ventures, EIC Fund, Rudolf Fuchs Family Office
WAVS AI	Streaming platform for AI-generated music; tool for creating and distributing your own AI works	**AU$29.0m**	2023	Regal Investments
synthesia	Automated creation and editing of images and videos based on prompts	**AU$204.2m**	2023	Google, NVIDIA, Salesforce
Beatoven	AI-powered creation of music for videos and podcasts	**AU$3.5m**	2022-2024	IvyCap Ventures, Rukam Capital, Upsparks Capital, Google, ML Elevate
Pika	Video generation service	**AU$195.5m** **AU$115.8m**	2023 2024	Greycroft, Lightspeed, Neo, Makers Fund, SV Angel, individual investors
Suno	AI-powered generative audio tools	**AU$181.0m**	2024	Matrix, Lightspeed Venture Partners, Founder Collective, individual investors

Source: Goldmedia analysis based on company information. Note: For some companies, this might not be an exhaustive list of investment companies. Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

MARKET SIZE OF GEN AI MODELS

There is a great variety of evaluations of the global market volume for generative AI. The range for the estimated volume in the year 2023 goes from about AU$7bn up to about AU$93bn. Same goes for the forecasts up to the year of 2033 with the highest estimated market volume of about AU$1,971bn predicted to be reached in the year 2032. For many research companies there has been "significant upward adjustment in market revenue predictions"[1] of the generative AI models, due to technological advances and increased use.

GLOBAL GENERATIVE AI MARKET VOLUME ESTIMATIONS, 2023-2033, IN AU$BN



Source: Goldmedia analysis based on Bloomberg, Fortune Business Insights, Precedence Research, Market Research Future, Grand View Research, Arizton, Future Market Insights, Markets and Markets, Global Market Insights, imarc group, and [1] S&P Global Market Intelligence.
Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

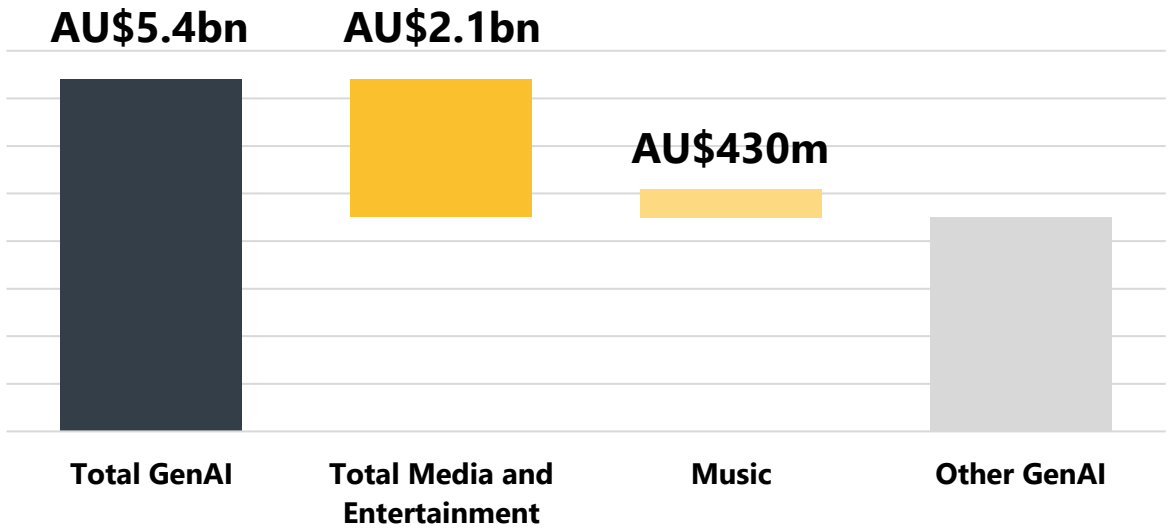
MARKET VOLUME FOR GENERATIVE AI IN MUSIC

As described above, there are numerous estimates for the volume of the generative AI market. The following estimates are based on the market volume derived from a bottom-up analysis of a total of 260 companies providing Gen AI software products[1] and an estimate of the market volume in the media and entertainment[2] as well as the music sector.[3]

In aggregate, estimated revenues for Gen AI technology offerings are expected to exceed AU$5.4bn by 2023.[4]

Meanwhile, the market for Gen AI in the media and entertainment sector is estimated at around AU$2.1bn which is 40% of the total market, while **revenues for Gen AI in music are estimated at approximately AU$430m which is 20% of the media and entertainment sector and 8% of the total market.**

GLOBAL GENERATIVE AI MARKET VOLUME AND SHARE OF GENERATIVE AI IN MUSIC, 2023

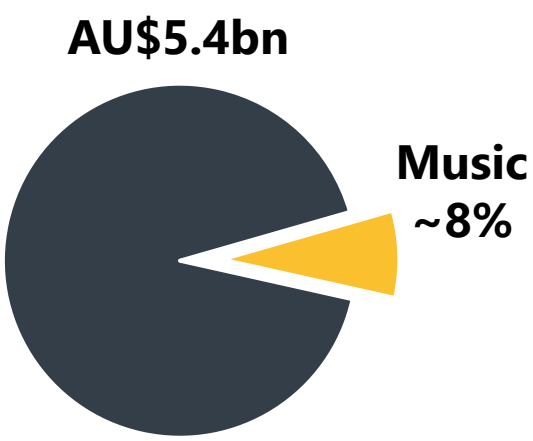


Source: Goldmedia analysis based on [1] S&P Global Market Intelligence (2023), [2] Market Research Future, [3] Market.Us & Globe Newswire (2023).
[4] The estimates differ significantly. More recent estimates for 2023 tend to assume an even higher total turnover with generative AI of over AU$5bn.
Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

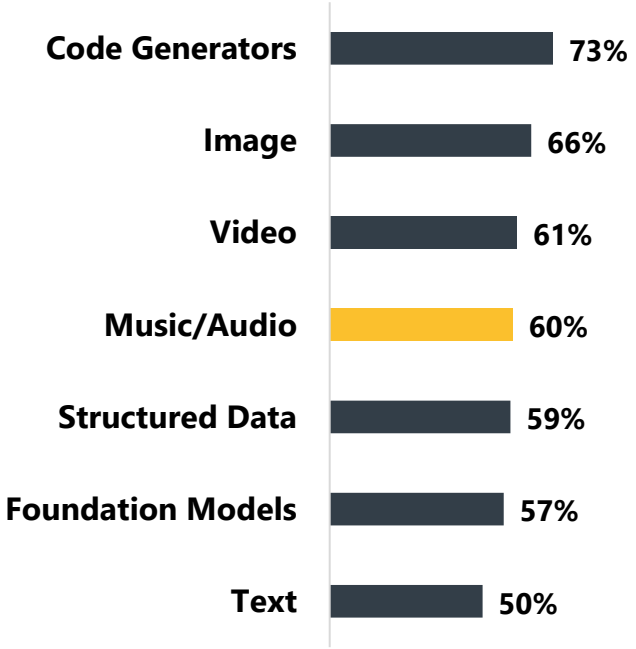
MARKET FORECAST FOR AI IN MUSIC

The market for generative AI in music is set to increase more than tenfold by 2028 to over AU$4.5bn. The average annual growth rate (CAGR) from 2023 to 2028 is estimated at about 60%.[1]

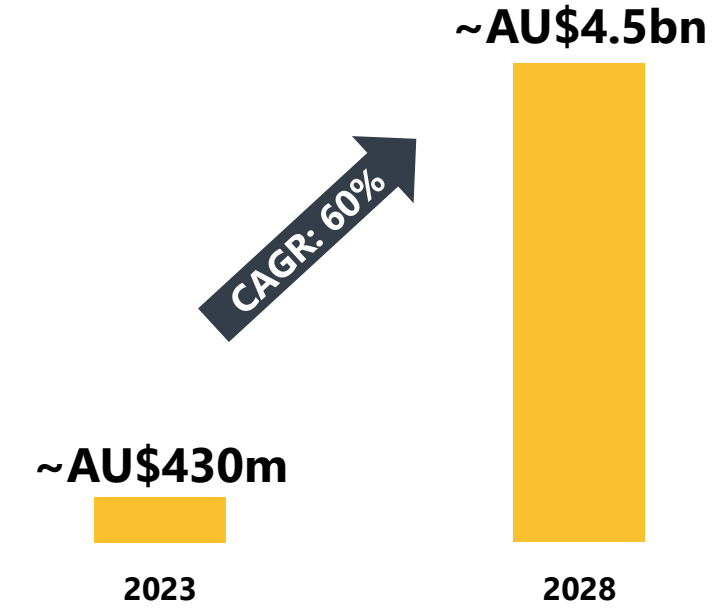
GLOBAL GENERATIVE AI MARKET VOLUME AND SHARE OF GENERATIVE AI IN MUSIC, 2023



GLOBAL GENERATIVE AI COMPOUND ANNUAL GROWTH RATE (CAGR) BY MARKET SEGMENT, 2023-2028



GLOBAL MARKET VOLUME OF GENERATIVE AI IN MUSIC, 2023-2028



Source: Goldmedia analysis based on [1] S&P Global Market Intelligence (2023).
Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.

PHOTO: JACINTA KEEFE

PART 2: AI IN THE MUSIC CREATION PROCESS

Overview

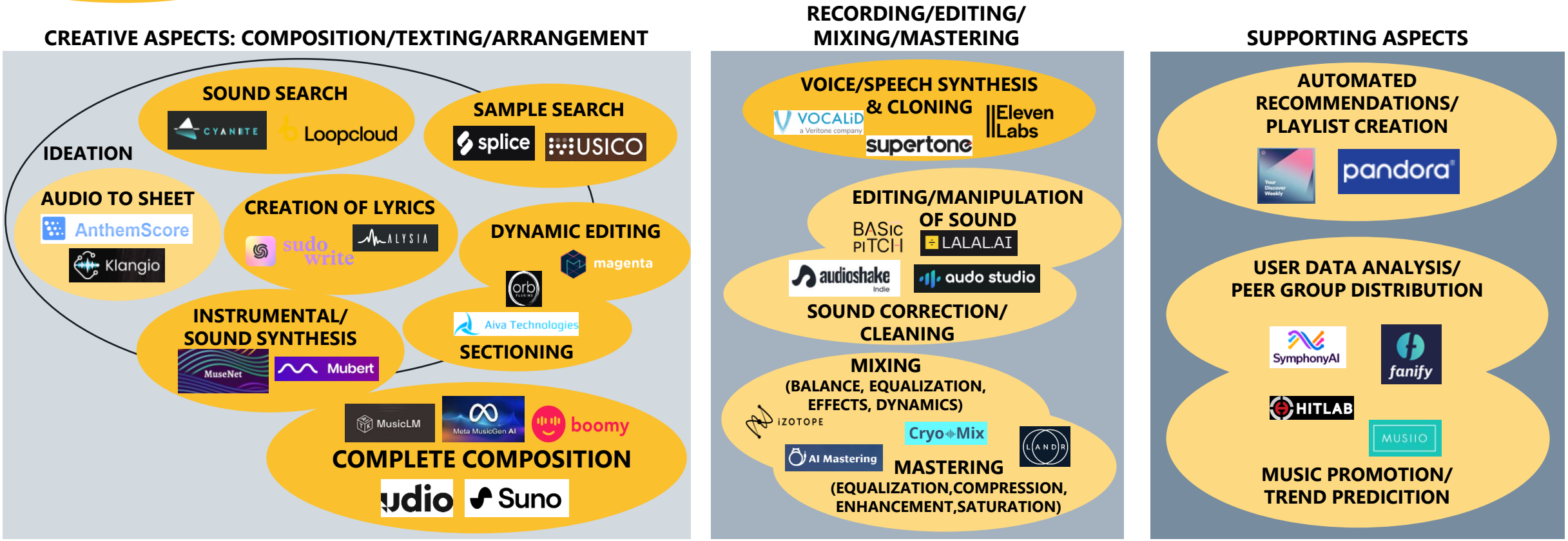
AI and the Creative Process of Music

AI IN THE MUSIC-MAKING PROCESS

The range of AI tools for use in the music industry is diverse and vast. AI can be applied to every step of the creative process, from composition to distribution and marketing of music. The AI use ranges from simple, descriptive tools to generative applications. Many of the applications do not only serve one purpose but can be applied in various steps of the process. **In this chapter, the use and assessment of AI among music creators according to the survey conducted for this study will be shown along with use cases and other research results.**

DESCRIPTIVE AI

GENERATIVE AI



Source: Goldmedia analysis based on Water & Music (2023).

CASE STUDY: UNCANNY VALLEY'S "BEAUTIFUL THE WORLD"

The first AI Eurovision Song Contest in 2020 was won by the Australian team Uncanny Valley with their AI-generated song "Beautiful the World."[1]

The creation of the song began with an unexpected opportunity when the contest organisers contacted the team after hearing an AI-generated Christmas carol they had produced. At the time, the team was already collaborating with Google Creative Lab in Sydney, using machine learning and cutting-edge technology.[2]

The team aimed to create a song that paid tribute to the devastating bushfires and the loss of wildlife they caused. One standout idea was to develop a "koala synthesiser" by training a model on koala and other animal sounds.

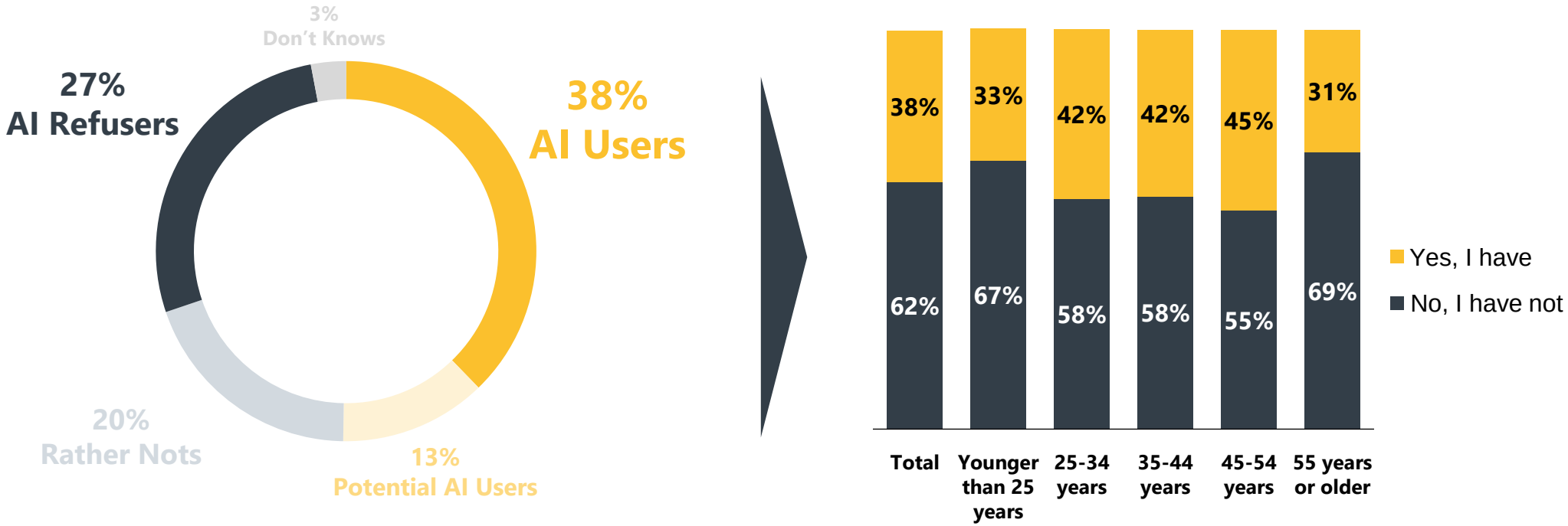
The song's creation process involved extensive human input alongside technological advancements. The model was trained on 70 years' worth of Eurovision songs. The legal and ethical implications of using this dataset required balancing innovation with respect for copyright and creative integrity.[3]

Source: [1] Quinn (2020); [2] VPRO (2024); [3] Goldmedia expert interview with Caroline Pegram. Screenshot: YouTube.

USE OF AI AMONG MUSIC CREATORS SURVEYED

Many music creators are already incorporating AI into their work. Of the over 4,200 music creators and publishers in Australia and New Zealand surveyed for this study, 38% have already used AI in their work. Among the 62% who have not used AI, 13% plan to, while 27% are certain they can't imagine using AI in their work in the future. Another 20% would rather not use AI in the future. The biggest share of AI users can be found in the age group of 45-54 years.

Q: Have you used AI technologies in your work with music and creation in general? / Can you imagine using AI in the future?

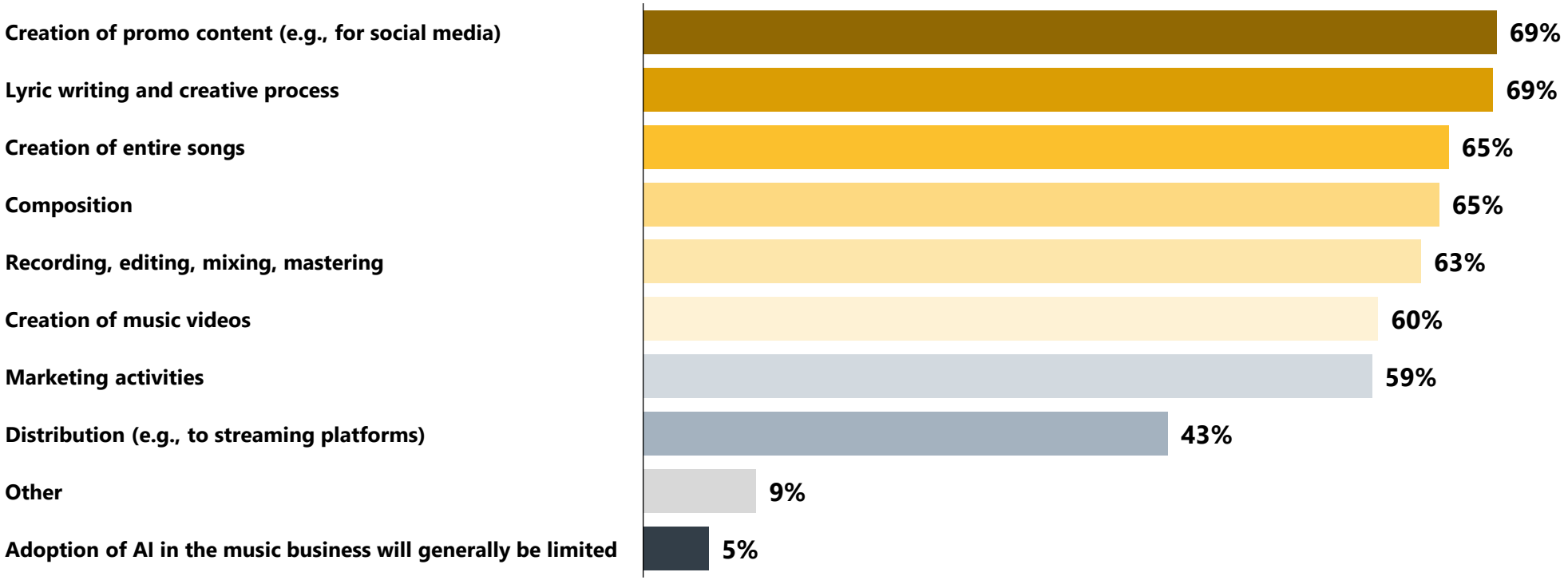


Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,263 / 2,622. Basis: APRA AMCOS members.
A study conducted by Soundplate (2024) shows that out of over 1,000 independent music artists, about 30% use AI in their work or plan to do so in the near future.
A study undertaken by TuneCore (2023, p. 7) has shown that 27% of the surveyed 1,558 artists from more than 20 countries have used AI previously in their work.
A study carried out by the Finnish performance rights organisation 'TEOSTO' found that 21% of 717 partaking artists have used AI in their music creation process.

EXPECTED ADOPTION OF AI BY AREAS OF THE MUSIC SECTOR

According to 69% of music creators and publishers, AI is most likely to be adopted in the creation of promotional content, as well as to assist with lyric writing and the creative process in general. Many see AI being used to create entire songs (65%) and music videos (60%). AI is also expected to play a major role in technical support, such as recording and editing, as well as in marketing and distribution. Conversely, only 5% believe that the use of AI in the music business will be limited.

Q: In your opinion, in what areas of the music sector and creation in general will AI be most likely adopted?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,257. Basis: APRA AMCOS members.

MUSIC CREATION AND AI ADOPTION: VARIOUS OPTIONS

Q: In what other areas of music creation do you consider the use of AI technologies will be adopted?

INTELLECTUAL PROPERTY

COPYRIGHT ISSUES

LEGAL AND ETHICAL CONCERNS

EDUCATION

ASSISTANCE

FEEDBACK

TRANSCRIPTION

CONTENT CURATION

DATA AND TREND ANALYTICS

A&R (ARTIST AND REPERTOIRE)

BOOKING AND LOGISTICS

BUSINESS MANAGEMENT AND ADMINISTRATION

PERFORMANCE

VIRTUAL EVENTS

LIVE MUSIC

NEW CREATIVE EXPRESSIONS

EXPERIMENTAL

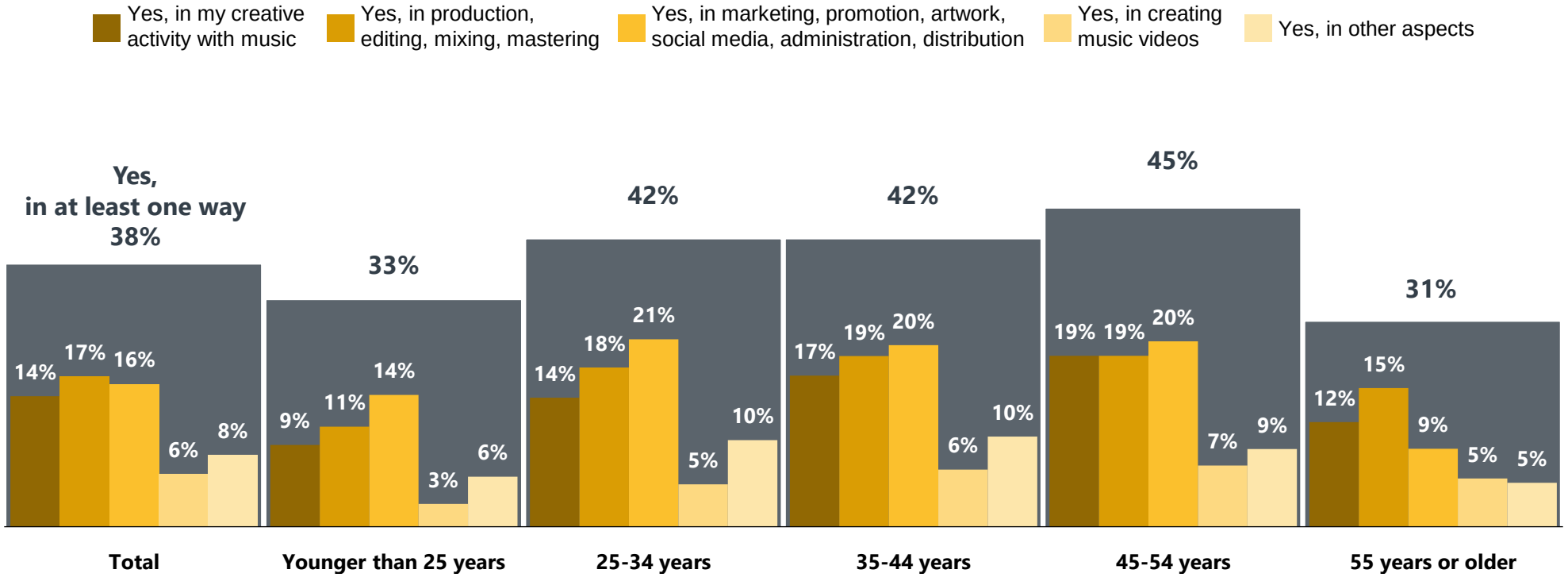
FUTURE POTENTIAL AND APPLICATIONS

Source: Goldmedia survey on behalf of APRA AMCOS (2024). Basis: APRA AMCOS members.

USE OF AI BY APPLICATION AREA

AI has many applications in music creation, especially among members in the 25-54 age group, with those aged 45-54 being the largest group of users. While in total 38% of all members surveyed have used AI in some way to create music, AI is particularly used for production, editing, mixing and mastering (17% of all members have used it for this purpose). Marketing and promotion activities are also often supported by the use of AI (16%). 14% of the members use AI in their creative work with music in general and 6% use it for the creation of music videos.

Q: Have you used AI technologies in your work with music and creation in general?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,263. Basis: APRA AMCOS members. Difference to 100% = No / Prefer not to say.

USAGE OF AI IN MUSIC CREATION IN DIVERSE AREAS

Q: In which other aspects of your work with music and creation in general have you used AI technologies?

COMPOSITION AND ARRANGEMENT

PRODUCTION TOOLS AND TECHNIQUES

EXPERIMENTAL AND PROTOTYPING

CONTENT CREATION

EDITORIAL ASSISTANCE

CREATIVE AND CONCEPTUAL WRITING

VISUAL ART

ARTWORK AND DESIGN

PHOTO AND VIDEO

CREATIVE EXPLORATION

ARTISTIC FUSION

CROSS-DISCIPLINARY APPLICATIONS

GENERAL EXPLORATION

PERSONAL ASSISTANCE

RECREATIONAL USE

ADMINISTRATIVE TASKS

ORGANISATION AND SCHEDULING

BUSINESS DEVELOPMENT

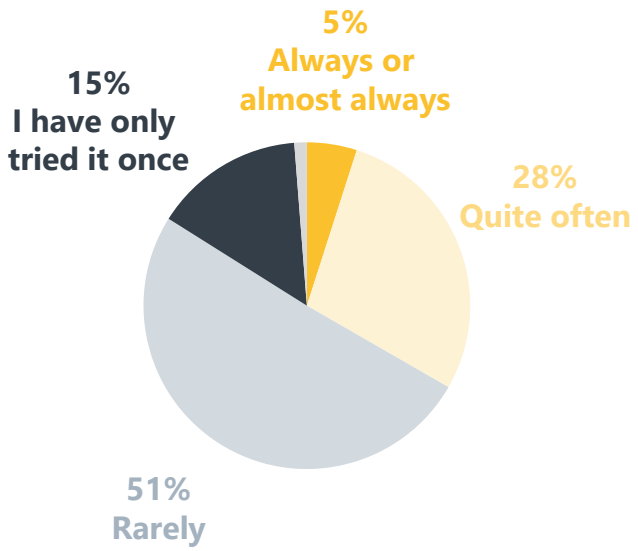
APRA AMCOS

Source: Goldmedia survey on behalf of APRA AMCOS (2024). Basis: APRA AMCOS members.

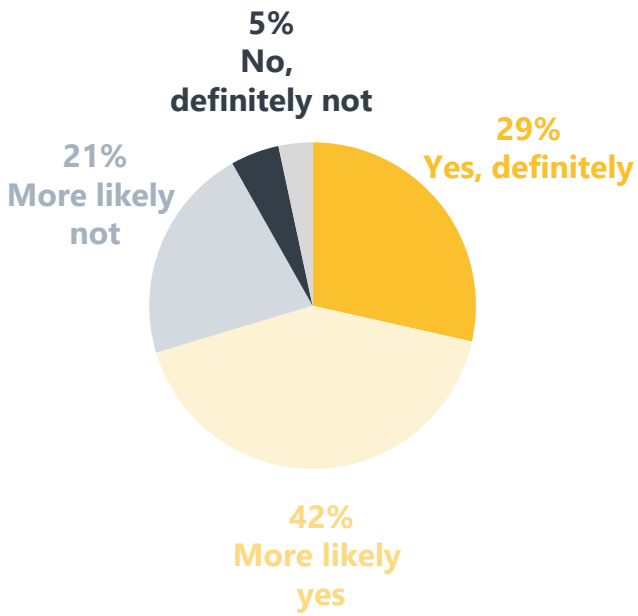
FREQUENCY OF AI USE, CONTINUATION AND ASSESSMENT

38% of music creators in Australia and New Zealand have at least experimented with AI in their work with music. In terms of frequency, a mere 5% use AI consistently or nearly always, while 28% use it quite often. The use of AI often seems to have proven successful, as 71% (29% definitely and 42% more likely) plan to continue working with AI in the future. Despite this high intention, the reception of AI remains critical: **only 4% view it very positively, whereas 32% have a very negative perception**. The majority (37%) acknowledge both the positives and negatives of AI use in music.

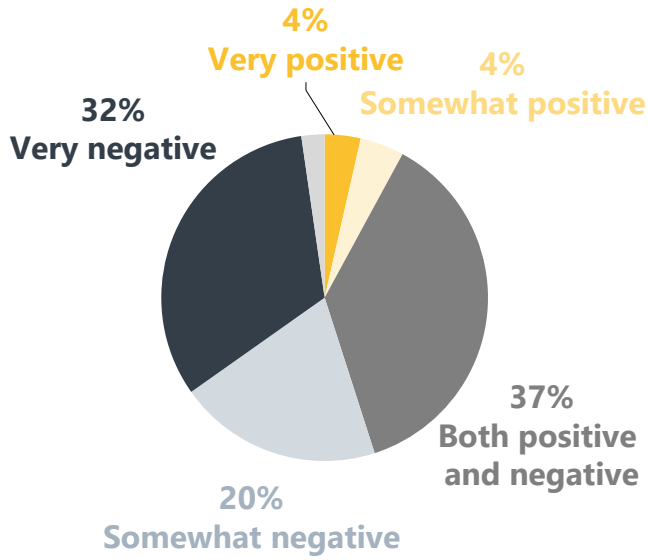
FREQUENCY OF AI USE IN MUSIC AND CREATION IN GENERAL, TOTAL IN %



INTENTION TO CONTINUE WORKING WITH AI, TOTAL IN %



ASSESSMENT OF AI USE IN THE MUSIC SECTOR IN GENERAL, TOTAL IN %



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=1,618 / 1,518 / 4,105. Basis: APRA AMCOS members. Rounding differences possible. Difference to 100% = No answer / Prefer not to say.

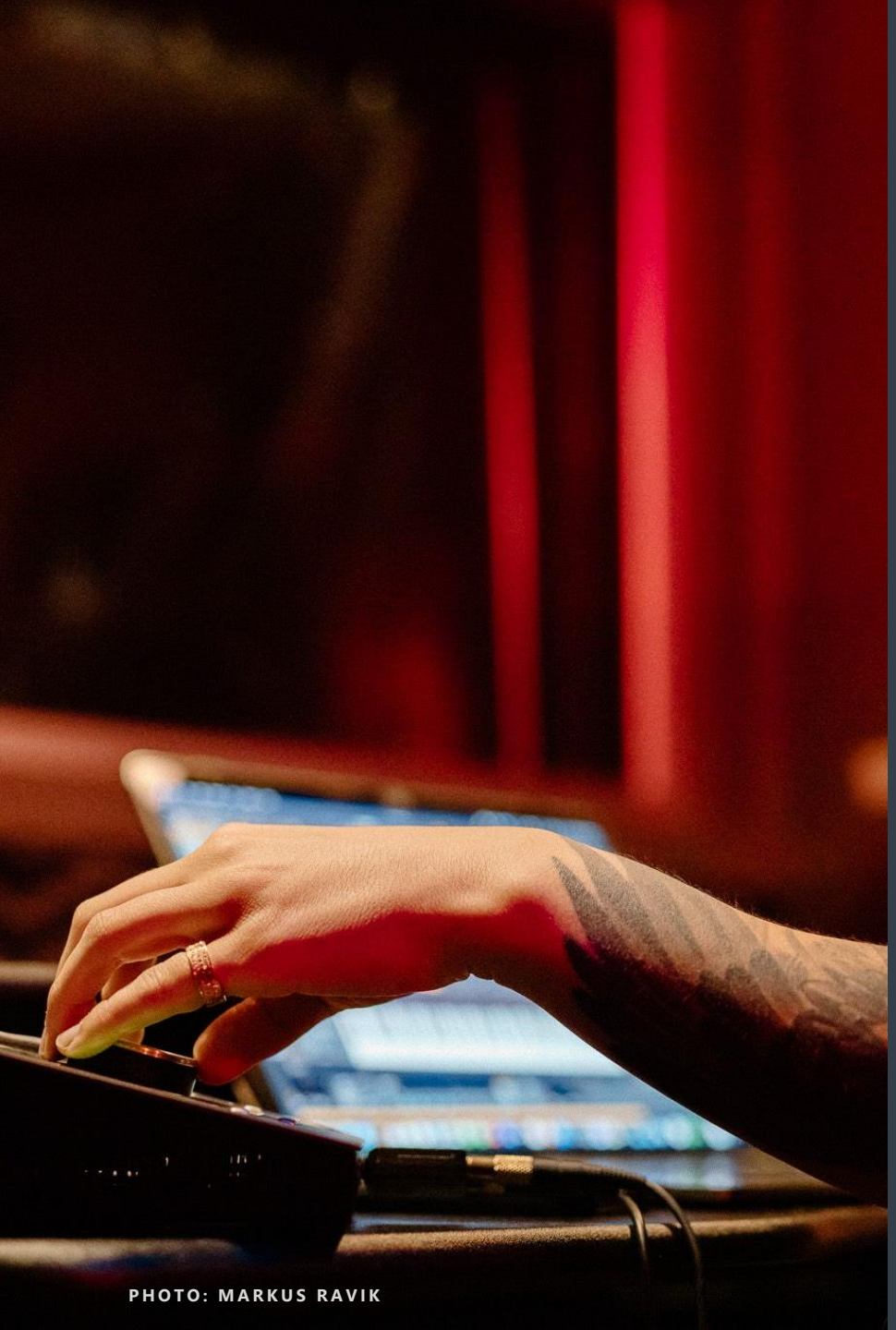


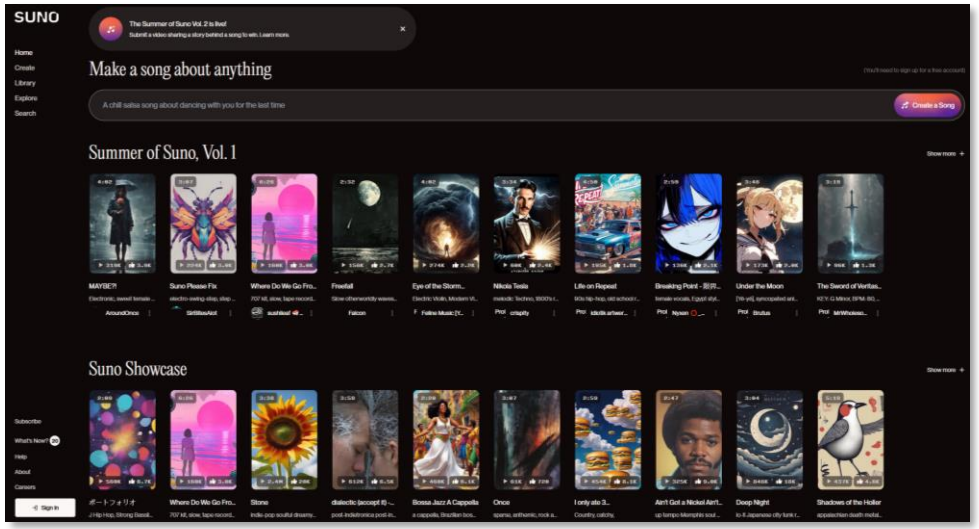
PHOTO: MARKUS RAVIK

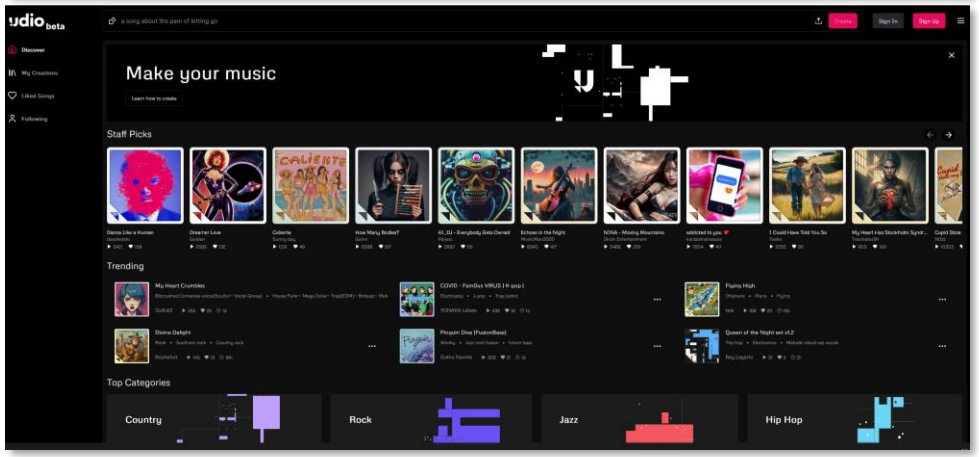
PART 2: AI IN THE MUSIC CREATION PROCESS

Overview

AI and the Creative Process of Music

WHAT IS POSSIBLE WITH GENERATIVE AI IN MUSIC CREATION?





The promise of AI music generation models, and tools that are based on these models, is nothing less than "transforming the future of music creation" (Google DeepMind)[1].

Platforms like Boomy or text-to-music-generators like MusicGen from Meta promise that people can "create original songs in seconds, even if you've never made music before" (Boomy[2]) or that small business owners can add "a soundtrack to their latest Instagram post with ease" (Meta/MusicGen[3]). Text-to-song-generators like Suno even combine text-to-music with text generation and voice cloning to build "a future where anyone can make great music. Whether you're a shower singer or a charting artist, we break barriers between you and the song you dream of making. No instrument needed, just imagination. From your mind to music" (Suno[4]). In this manner, text-to-audio is a keystone technology as it provides an intuitive user interface that makes it accessible to virtually anyone. Additionally, the quality of the audio generation has significantly improved.[5]

One major argument for AI-facilitated music is that it may help people shrink what can be called "the gap". "The gap is the difference between the idea that's in our heads that's obviously perfect and amazing versus what you can realistically create" (Cleo Abrams[6]).

More and more Gen AI models and tools and apps are emerging, allowing musicians as well as non-musicians to test their ideas and bring them to life. Some voices suggest that generative AI can lead to a democratisation of music content creation.[7]

APRA AMCOS

Source: [1] Google DeepMind (2023); [2] Boomy; [3] Meta (2023); [4] Suno AI; [5] Goldmedia expert interview with Oliver Bown; [6] Abrams (2023); [7] see e.g., Marr (2023). Screenshots: Suno; Udio.

"I've only as recently as mid-last year heard of AI apps like Suno, and I was blown away. The quality is insane, and the writing (though basic) puts you in a pretty good direction when the algorithm nails it. I can see it as quick inspiration and part of the creative process and flow.

*"**I don't really see a downside to it; it was always going to be a natural progression from the way technology was moving. It's really more up to how we can find ways for it to benefit us as opposed to fading into obscurity and avoiding an inevitable part of the future.**"*

Kingdon Chapple-Wilson (Kings)

Singer/songwriter and producer

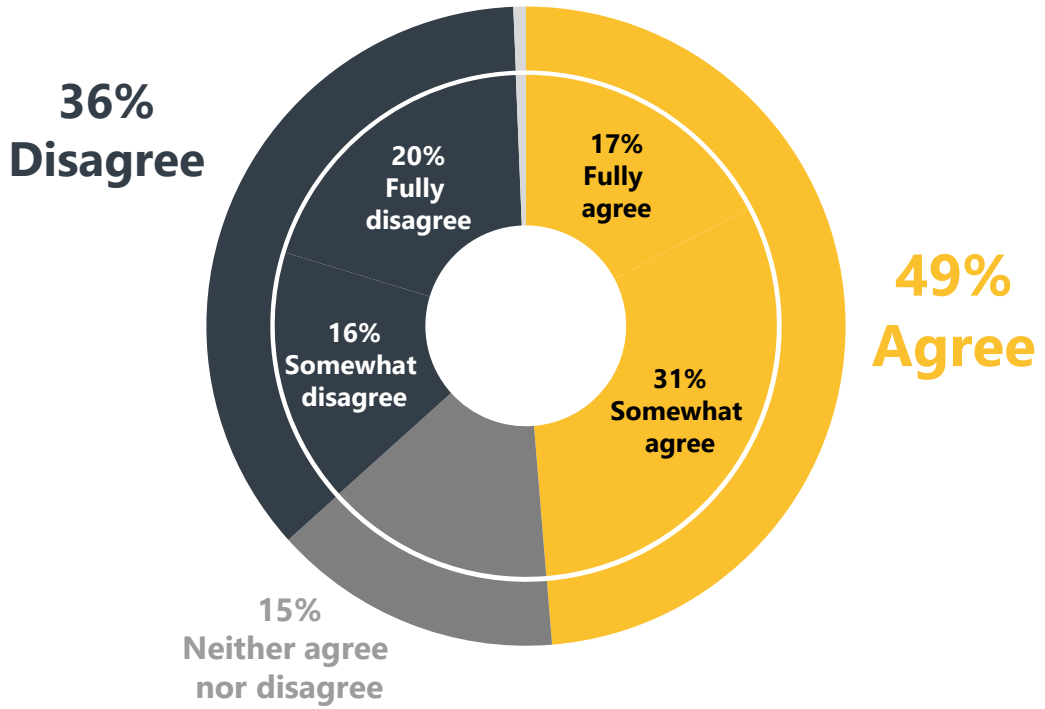
Photo supplied

NEW FORMS OF CREATIVITY THROUGH AI?

One of the main concerns raised by the introduction of AI into music, and its capacity to create entire songs from lyrics, is the role of human creativity. Along with the challenges, AI also holds the promise of enhancing and inspiring musical creativity and assisting music creators in the creative process.[1] AI can enable creative exploration for novices, streamline production for professionals, and foster innovative human-technology collaborations.[2]

About half of the surveyed music creators in Australia and New Zealand (49%) agree that AI can and will open up new forms of creativity – 17% of them fully agree with the statement.

Q: AI can and will open up new forms of creativity.



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,111. Basis: APRA AMCOS members. Rounding differences possible. Difference to 100% = No answer.
[1] Banc (2024); [2] DemistifAI (2023).

"I've also been working a bit in the world of visual performance AI, which has some very exciting potential for live experience. Imagine a real-time AI-generated screen superimposed on a band to create different realities of the band's look and feel – think super complex AI-based motion capture."

Tushar Apte

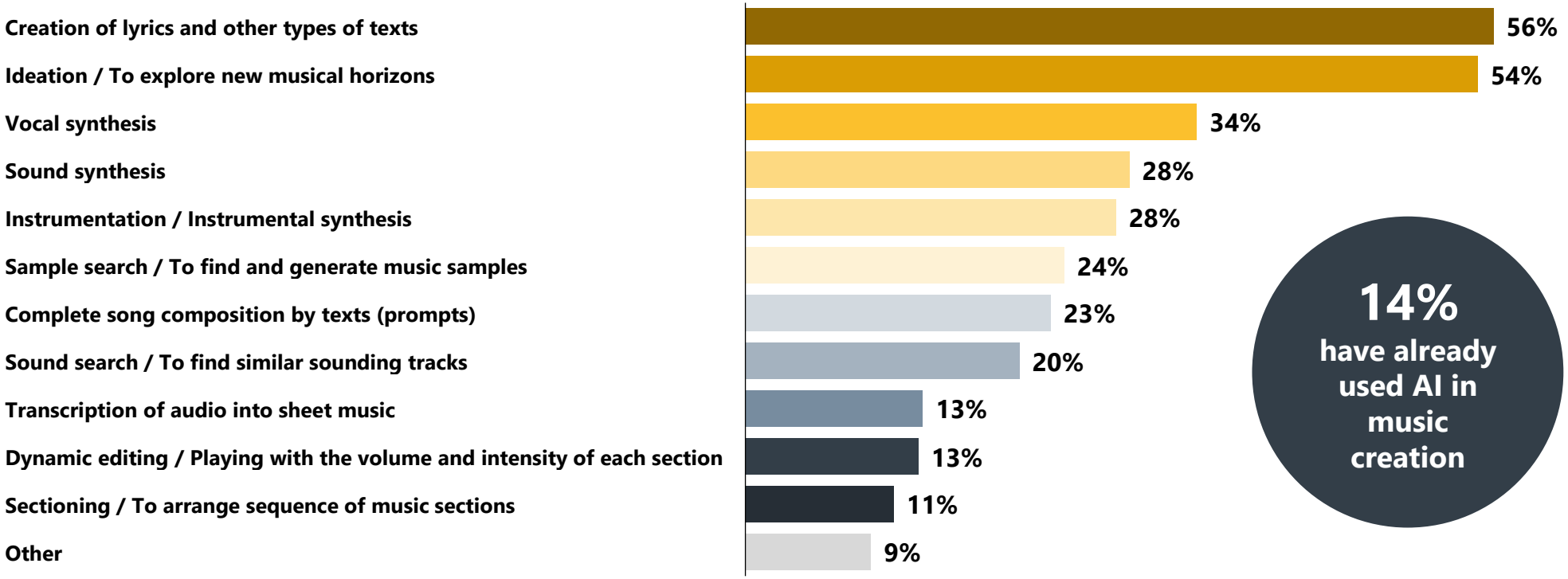
Record producer and songwriter

Photo: Headshothires

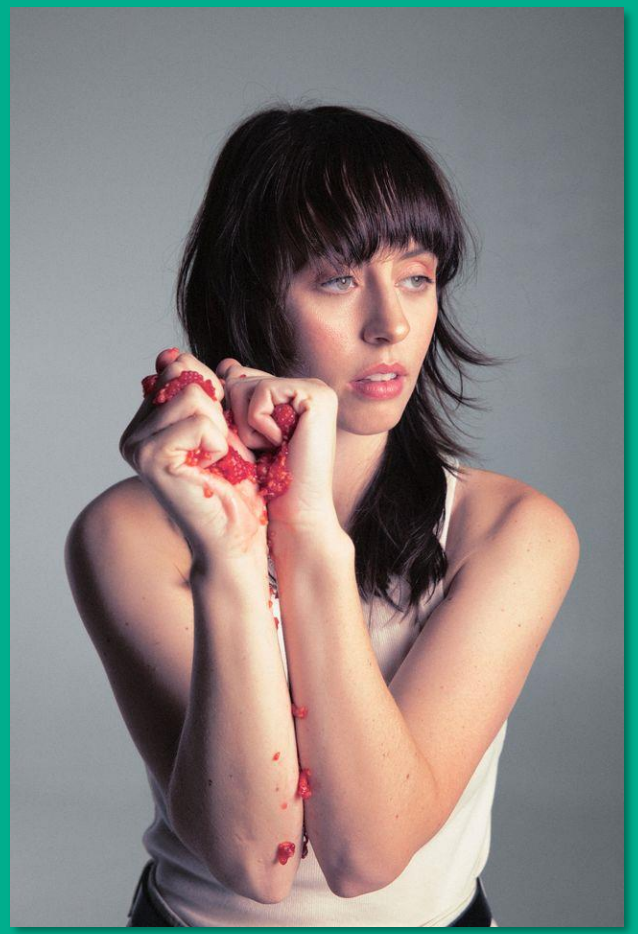
USE OF AI TECHNOLOGY IN CREATIVE ACTIVITIES

The survey found that 38% of music creators have worked with AI in some aspect of their work and **14% have already applied it specifically to their creative activity with music**.
Of these, more than 50% use AI for inspiration to write lyrics and test new musical waters. AI is also used for co-synthesising vocals (34%), sounds (28%) and instruments (28%). 23% have already used the technology to compose complete songs using prompts.

Q: In what areas of your creative activity with music do you use AI technologies at least occasionally?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=600 music creators who have used AI technologies in their creative activity with music.
Basis: APRA AMCOS members.



"AI can be harnessed as a creative tool in songwriting as it's a quick way to generate a seed of an idea that an artist can build upon. ***AI can be enormously beneficial for the larger music industry – in helping navigate algorithmic streaming platforms, with the end goal of having an artist's music heard by the most people.***"

Sophie Payten (aka Gordi)
Singer/songwriter

Photo: Jess Gleeson

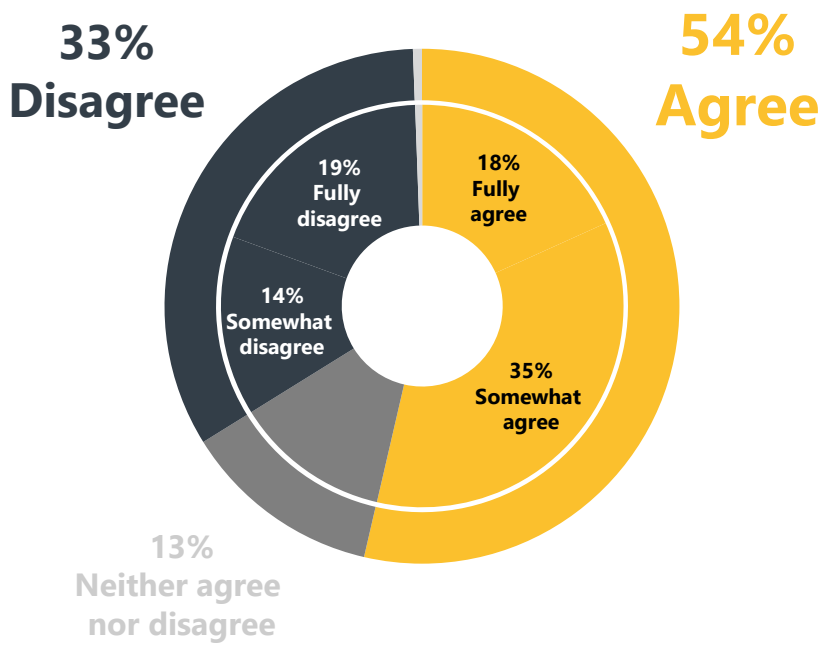
HUMAN–TECHNOLOGY COOPERATION IN MUSIC CREATION

By using advancing AI technology in their creative activities, music creators "are boosting their productivity and overcoming common roadblocks in their work"[1] such as the dreaded "blank page syndrome"[2]. AI does not replace creatives, but rather adds a new angle to the creative process they can engage with.[3] Music generators can help them broaden their horizons and "are like a breath of fresh air when the deadlines are approaching, and the audience is waiting for another release".[4]

"There's a song that we wrote a chorus for in 2003 and we never finished because I couldn't think of anything for the verses [...]. But now with AI you could give it the bits you've written, press the button and have it fill in the blanks. You might then rewrite it, but it could nonetheless be a tool."
(Neil Tennant, Pet Shop Boys, The Guardian, 16 May 2023)

This view is shared by the majority of creators surveyed in Australia and New Zealand: 54% agree that AI technology can assist the human creative process (18% of whom fully agree). 33% disagree while 13% are in between.

Q: AI technology can support the human creative process.



THE HUMAN AI FEEDBACK LOOP[5]

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,258. Basis: APRA AMCOS members. Rounding differences possible. Difference to 100% = No answer.
[1] Zarczynski (2023); [2] Lazaro (2023); [3] IFPI's (2023) global report shows that 79% of over 43,000 music fans feel that human creativity remains essential to the creation of music; [4] Miquido (2023); [5] Brandt (2023).

"I assume there will be useful applications of AI in the editing and mixing process, making certain processes more efficient. However, in terms of the creation of music, I don't see how it enhances the creation of original music.

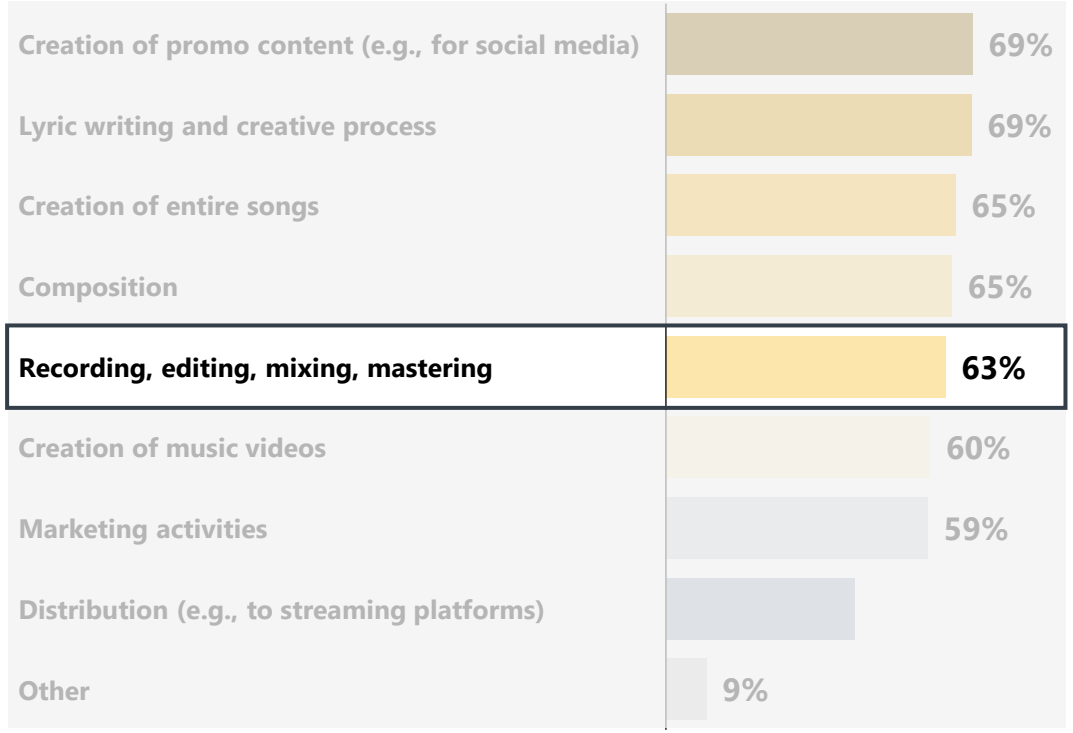
*"**Firstly, the use of already copyrighted music to train AI to then go on to compose is a major factor for me. I can't see how it is legal or moral. Secondly, any music composed by AI presumably uses algorithms that collate ideas from the past, i.e., ground that has already been covered. This goes against the very idea of composing something new and removes the humanity from the creation of art, which deletes its very purpose.**"*

Bernard Fanning

Singer/songwriter

Photo: Paul Bamfor

Q: In your opinion, in what areas of the music sector and creation in general will AI be most likely adopted?



AI IN MUSIC PRODUCTION HAS BECOME A STANDARD PRACTICE

Using AI in music recording and production has become a standard practice for many artists. They can now automate the parts of the recording process that were once manual, like mixing. As a result, they gain more time to focus on the actual creative process instead of finessing the technicalities of their recording. Therefore, AI tools can increase productivity in some cases by substantially automating repetitive or time-consuming tasks.[1]

17% of the surveyed APRA AMCOS members have so far used AI in connection with the recording, editing, mixing and mastering of music. This accounts for the highest AI use compared with its use in marketing and promotion activities (16%) or in AI use in their creative activities with music (14%).

Furthermore, recording, editing, mixing and mastering are considered to be areas where AI will be most likely adopted in the future (63% of respondents).

17%
AI usage in recording, editing, mixing, mastering

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,257. Basis: APRA AMCOS members. [1] Miquido (2023).
In a study conducted by Pirate (2023, n=1,141), 25% of musicians surveyed had already experimented with AI tools for music production.
A study by Tracklib (2024, n=1,107) shows similar results, with 25% of surveyed music producers using AI in the creation of music.

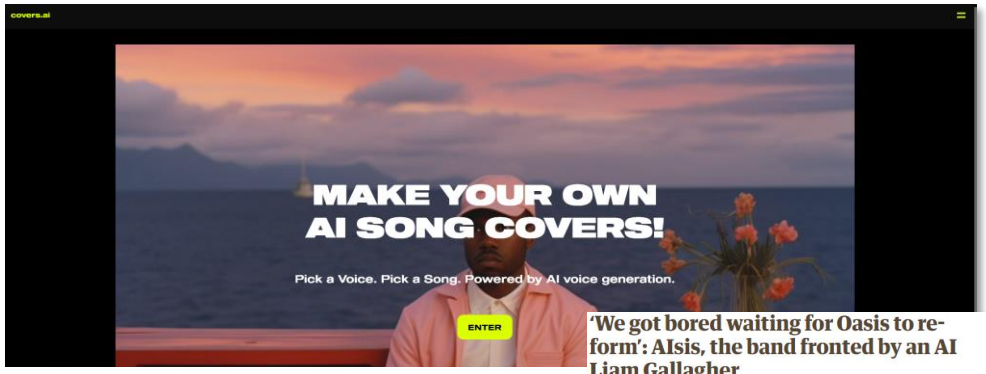
"In terms of the composition and production of Australian music, AI-driven tools are primarily being integrated into the post-production workflows and processes of musicians and producers, particularly when it comes to mixing and mastering. AI-driven audio post-production technologies have a lot of potential to assist in this part of the musical production process, and this is where the Australian sector is seeing the most amount of uptake."

Sam Whiting

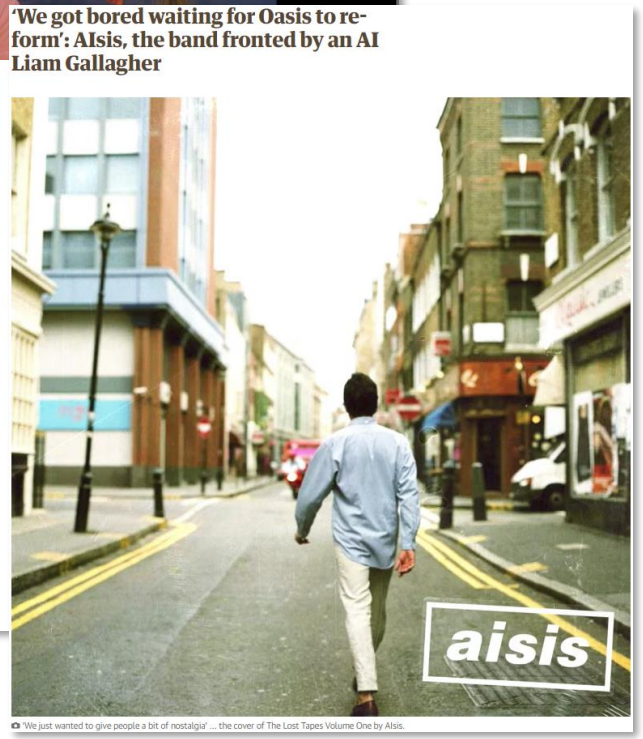
Researcher, lecturer, musician

Photo: Sia Duff

VOICE CLONING HAS BECOME ONE OF THE MOST POPULAR APPLICATIONS OF AI IN MUSIC



Highway to Hell AI cover and Deepfake (Freddie Mercury, Michael Jackson, Kurt Cobain & more)
2493 Aufrufe • vor 4 Monaten
Andres AI version
#ai #aicover #faceswap #deepfake #acdc #acdccover #chesterbennington #linkinpark #chriscornell #kurtcobain #nirvana ...

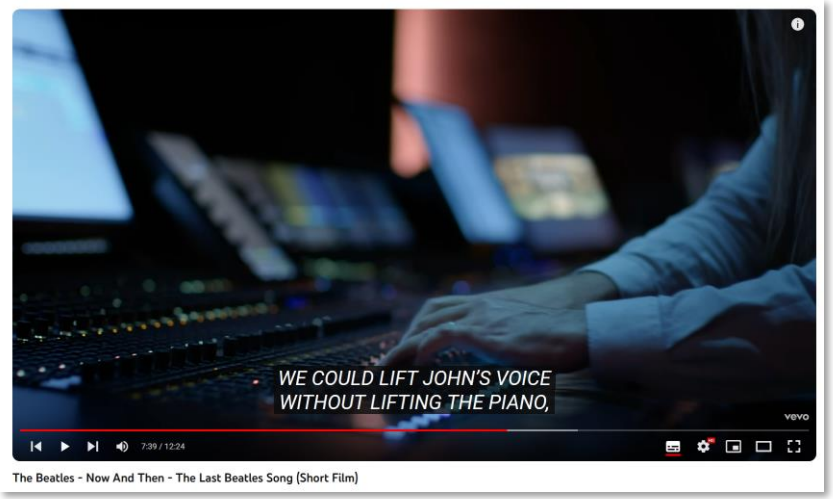


YouTube and other platforms are currently flooded with thousands of AI deepfake cover songs, in which familiar songs are underlaid with well-known voices and instrumentations and suddenly Johnny Cash interprets "Barbie Girl" or Frank Sinatra "Gangsta's Paradise". Generators such as Cover.AI create interpretations with AI-generated voices in no time at all.

Apart from these fully automated cover generators, vocal editing tools are also used for new songs. In May 2023, the band Breezer released musical instruments recorded by the band with an AI voice of Oasis frontman Liam Gallagher under the name "AISIS - The Lost Tapes/Vol. 1".

According to the makers, the AI was only used to imitate the sound of Gallagher's voice. The vocal track was recorded by a singer before-hand, so the modulations also come from a real person. The voice was created using So-Vits-SVC, an AI tool for vocal processing.

Source: Költzsch (2023). Screenshots: Covers.AI; YouTube; Pelley (2023).



CASE STUDY: "LAST BEATLES SONG" BY AI AUDIO SEPARATION

With the help of an AI tool, the voice of John Lennon was separated from a cassette demo from 1978 and the song "Now and Then" was then produced in the traditional way and released in November 2023.

"... when we came to make what will be the last Beatles' record, it was a demo that John had [and] we were able to take John's voice and get it pure through this AI. [...] We had John's voice and a piano and he [Peter Jackson] could separate them with AI. They tell the machine, 'That's the voice. This is a guitar. Lose the guitar'. [...] Then we can mix the record, as you would normally do. So it gives you some sort of leeway."

Paul McCartney, in an interview with BBC Radio 4, on 13 June 2023

The long mythologised John Lennon demo was first worked on in February 1995 by Paul, George and Ringo as part of The Beatles Anthology project, but it remained unfinished, partly because of the then insurmountable technological challenges involved in working with the vocals John had recorded on cassette tape in the 1970s. For years it looked like the song would never be completed. But in 2022 there was a stroke of serendipity. A software system developed by Peter Jackson and his team, used throughout the production of the documentary series Get Back, finally opened the way for the uncoupling of John's vocal from his piano part.[1]

Source: Savage (2023). [1] The Beatles (YouTube Channel, 2023). Screenshots: The Beatles (YouTube Channel, 2023).

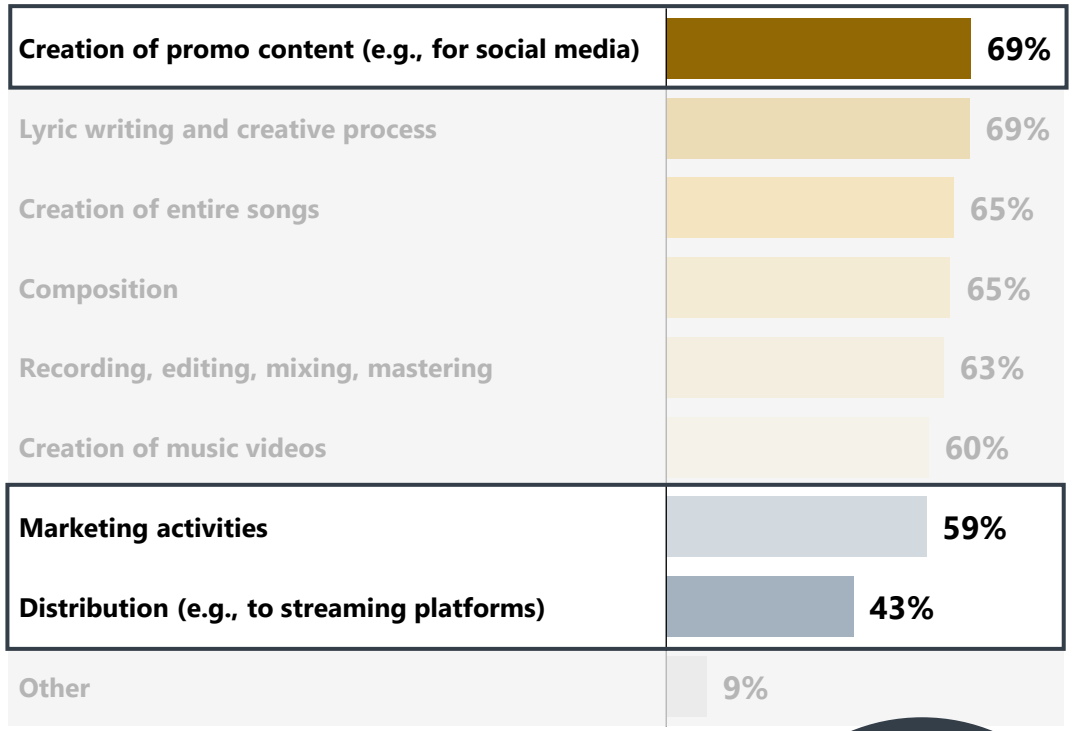
THE IMPACT OF AI ON MUSIC IN SUPPORTING ASPECTS: PROMOTION, MARKETING AND DISTRIBUTION

Beyond the use of AI in the field of music creation and in the context of music production, there are numerous other areas of application where AI can, in principle, provide support. **Promotion and marketing** are such areas where AI can streamline processes. AI-powered tools can automate and optimise promotional campaigns, allowing artists to reach more potential fans in a more efficient way. With the help of AI, artwork concepts can also be created quickly and cost-effectively for smaller bands and artists.

16% of the surveyed APRA AMCOS members are already using AI in marketing and promotion activities. **About half of the members believe that AI will most likely be adopted for the creation of promo content (69%) and for marketing activities (59%)**.

Another area where AI can support the music creation process is in **distribution**. One of the most significant impacts of AI in music distribution is the automation of various tasks that were previously time-consuming and labour-intensive. For instance, AI-powered algorithms can now analyse vast amounts of data to identify trends and patterns in music consumption, enabling distributors to make more informed decisions about which artists and tracks to promote. This not only saves time and resources but also ensures that the right music reaches the right audience. The importance of AI in music distribution is also highlighted by the fact that **43% of the surveyed APRA AMCOS members think that AI will most likely be adopted in distribution**.

Q: In your opinion, in what areas of the music sector and creation in general will AI be most likely adopted?



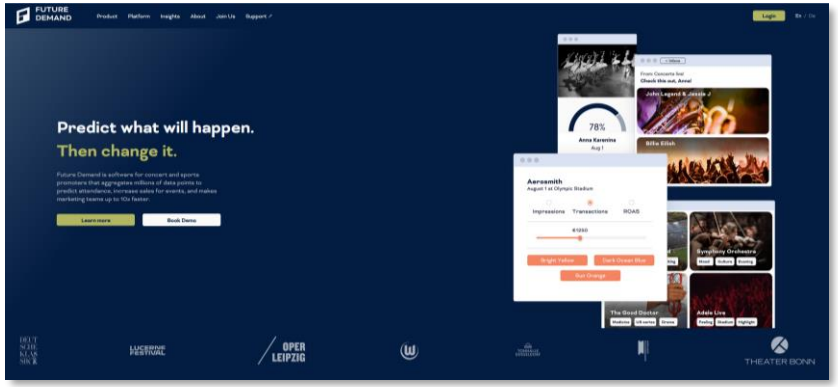
16%
AI usage in supporting aspects of music

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,257. Basis: APRA AMCOS members.
Rolling Stone Culture Council & Dynamic Growth Powerful Networking (2023).

Mary J. Blige - I'm Going Down (92.46%)

Genre: Pop

Artist	Title	Week	Peak	Year	Proximity	Rank	Rating
Christina Aguilera	Hurt	60	9	2006	0.825	85.19	4
Leona Lewis	Better In Time	88	4	2008	0.801	92.458	4
The Pussycat Dolls	I Hate This Part	124	10	2008	0.756	89	4
A Rocket To The Moon	Like We Used To	5	81	2010	0.73	16.986	1.5
Cherish	Unappreciated	77	65	2006	0.722	31.856	2
Demi Lovato	Don't Forget	12	62	2009	0.721	21.839	2
Danity Kane	Ride For You	4	55	2006	0.72	19.657	1.5
Leona Lewis	Happy	1	90	2010	0.715	5.931	1.5
Keyshia Cole	I Remember	3	100	2008	0.7	0.624	1
Jason Mraz	Geek In The Pink	4	90	2006	0.676	6.768	1.5



USING AI FOR FORECASTING THE HIT POTENTIAL OF SONGS

AI can also be used to draw conclusions about the success prospects of new songs. The Canadian company Hitlab uses its "Music Digital Nuance Analysis (DNA)" tool to break down music tracks into 83 different attributes and compares these with the sound patterns of popular hits. "The human brain is wired in a certain way, to appreciate certain sound patterns classified as musical attributes. Each genre of music has songs that have succeeded and failed in the past."[1]

A historical database of all music genres with millions of songs is analysed for this purpose in order to identify those common characteristics.

The main goal of the tool is to support A&R professionals. "With our AI, instead of having to listen to 1,000 songs or more a year, I can [analyse] 100,000, which will be [cut] down to maybe 100 – making sure I get the cream of the crop."[2]

There is also AI-based software for bookers to predict attendance for concerts and events.

Source: Deloitte (2021). [1] Hitlab; [2] Stassen (2020). Screenshots: Hitlab; Future Demand.

CASE STUDY: AI IN THE AUSTRALIAN VIDEO GAME AUDIO INDUSTRY

A research project led by the University of South Australia's Dr Sam Whiting aimed to uncover the current effects of automation and AI on professionals in the Australian video games audio industry.

As part of this, key workers and stakeholders within the Australian games audio sector were interviewed.[1] The team also developed the MetaMIDI Toolkit: one approach towards automated music generation for game designers.

At the time of this study, the project was still in progress and is expected to be completed in August 2024.

KEY FINDINGS FROM THE PROJECT:

- Economic need for greater productivity, "crunch times" and budget restraints are **incentivising the uptake of Gen AI** and other forms of automation. However, quick work is often valued less, and comparisons were made between the use of automation/AI and "fast fashion".
- AI, like automation, has the **potential to expand resources and productivity**: Over half of respondents noted that AI/automation allows more time for creativity, as workers can automate the tedious elements of their workflow.
- Gen AI has a **large range of potential applications**: Many workers in the games/audio sector see Gen AI as a helpful assistant in terms of administration, composition, ideation, workshopping, programming, and as an educational tool. However, some note that it will **replace key roles and professions**. Many workers also feel overwhelmed by the pace of technological change and Gen AI is seen as a "black box".
- Gen AI is still in its early stages of development: AI inaccuracies, described as "hallucinations", are a cause for concern, and **Gen AI often results in low-quality outputs**.
- Voiceover artists are already having much of their work "automated away", with concerning implications for the profession. Respondents believe that **Gen AI doesn't create new products, it just homogenises what already exists**, often amounting to theft or copyright infringement. Others associate Gen AI with "bad actors". Most respondents also believe AI will replace jobs.
- Respondents noted that **AI produces "quick and cheap" results**, whereas human-centred work is seen as of better quality and more authentic. Several respondents expressed concerns that **the prevalence of Gen AI may reduce the amount of collaboration across the sector**, resulting in a subsequent erosion of the sense of professional community.

APRA AMCOS

Source: Goldmedia expert interview with Dr. Sam Whiting. [1] MetaMIDI Toolkit – A University of South Australia/RMIt research project assisted by APRA AMCOS and the Australian Government through Creative Australia. Screenshot: MetaMIDI Game Demo on YouTube.

PART 3: CHALLENGES

Overview

Copyright, Credit and Consent

Remuneration and Economic Implications

Personal Rights

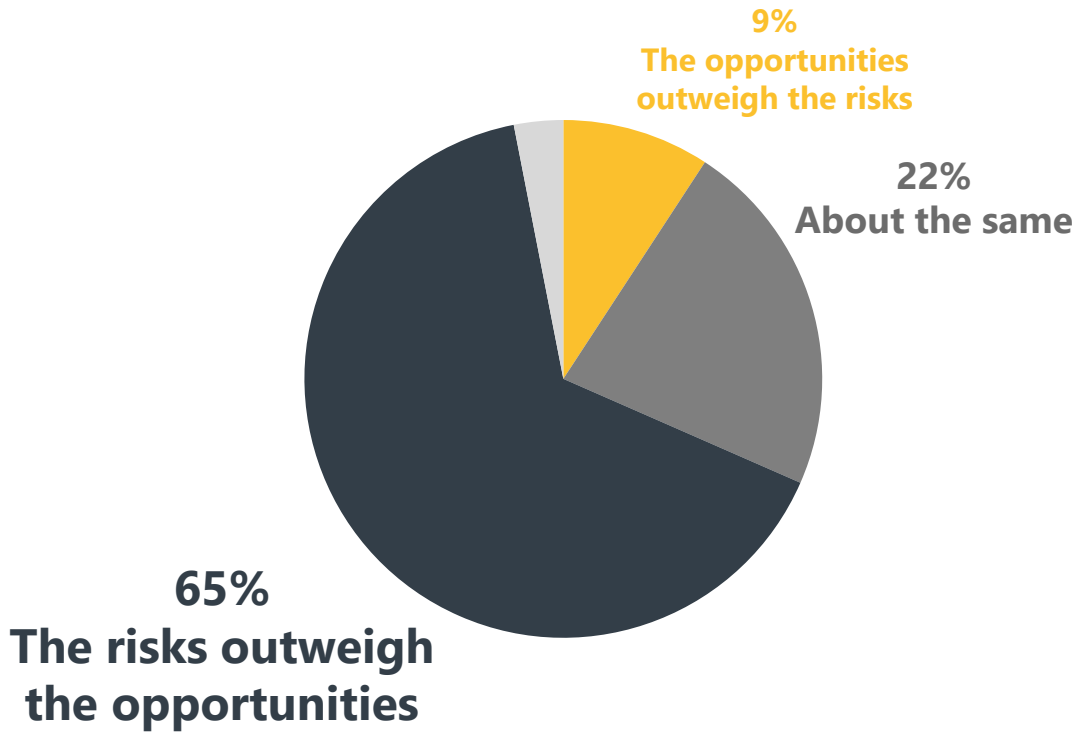
AI and Music Streaming

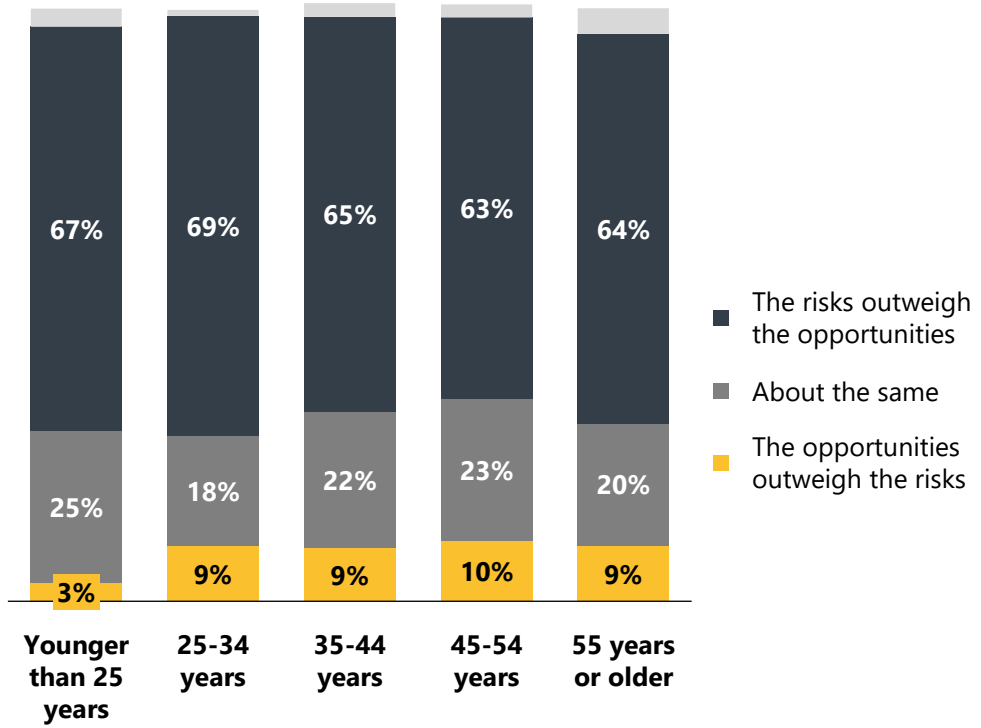
Outlook

OPPORTUNITIES AND RISKS OF AI

Despite the potential use and application of AI within music, about two-thirds (65%) of the music authors surveyed think that the risks of AI use outweigh its possible opportunities. Only 9% believe that the opportunities outweigh the risks, while almost a quarter of the surveyed members (22%) think risks and opportunities of AI are roughly in balance. Among the age groups, the youngest members (up to 34 years) have the highest rates of assessing AI's risks as outweighing its opportunities.

Q: All in all, do you think the opportunities outweigh the risks when it comes to AI in music and creation in general, or do the risks outweigh the opportunities?





Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,168. Basis: APRA AMCOS members. Rounding differences possible. Difference to 100% = No answer.

*"**Artificial intelligence possesses the potential to greatly enhance the productivity and creativity of songwriters, producers and artists. It can be a great tool to assist in generating new musical ideas and revolutionise the process. It enables more users access to cutting-edge technology and tools to create with previously reserved for the elite.** Additionally, AI-driven data analysis can offer valuable insights into audience preferences and trends, helping artists tailor their work to reach broader and more targeted audiences."*

Dami Im

Singer/songwriter

Photo: Laz Smith

"The risks currently outweigh the opportunities with AI. The music industry is already under siege, treated like a mendicant cottage industry, and we still don't have effective action on things like much Australian work sinking under the Spotify algorithm. Without robust laws to ensure copyright holders are adequately remunerated, licenses applied and transparency around the actual processes used when a creator's work is exploited, then we're in deep trouble. No more speeches, papers, or promises – we need urgent government action now."

Peter Garrett

Singer/songwriter

Photo: Kane Hibbert

PHOTO: JACINTA KEEFE

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COPYRIGHT IN THE CONTEXT OF GEN AI HAS AN INPUT AND AN OUTPUT DIMENSION

Gen AI has three levels: input, processing and output. The input consists of two steps: scraping and training. Data of all kinds is first collected and stored so that the AI can be trained with it in the next step. This process is called scraping, whereby collected works and performances are stored in a database in order to be made available for training. In training, models are learned from the previously stored content, based on machine learning/deep learning. The output of Gen AI systems is based on the training that has taken place.

GEN AI: SCHEMATIC PROCESS

INPUT

1. SCRAPING

- Selection and acquisition of the data from which the AI learns and works.
- Storage of, or otherwise retaining, the data to make it accessible for training.

2. TRAINING

- Using scraped data and algorithms, the AI learns to identify patterns and relationships in a data set of human-generated content.
- Based on this, the AI can predict probabilities (of character, pixel, word or sound sequences).

PROCESSING

- The training results in a calculated AI model in which the scraped data is not available as copies.
- During processing, the parameters (weights) derived from the scraping database are used instead.
- New content is generated based on the parameters and patterns learned.
- The exact way in which the parameters are categorised in the model cannot currently be clearly described from a technical perspective.

OUTPUT

- The processing results in the output, which describes the products produced by Gen AI. These products can take the form of texts, (moving) images and audio material.
- In many cases, the output product is not necessarily identical or sufficiently similar to the original. In the copyright debate, it is therefore disputed as to the nature of the output in copyright law.
- With current models it is very likely, however, that an AI model will capture at least some original training material in excerpts.

Source: Goldmedia based on Initiative Urheberrecht (2023).

"Copyrights are affected when music is used to train generative AI. Comparing training an AI algorithm to when a musician gets inspiration from another artist is not accurate. Training AI is more about teaching it techniques that it can copy, which is an issue well-documented in copyright discussions. This should be addressed in independent artists' contracts with major labels or distributors to ensure artists have control over whether their music is used to train AI and can opt-in or opt-out with fair compensation.

"Regulatory points should focus on transparency, making sure creators know where their compositions and recordings are being used and for what purpose. AI tools should also be clear about their datasets, how the API works, and ensure proper compensation if using copyrighted work."

Sally Coleman

Creative director at Big Sand

Photo: Rachael Versace

ARE GEN AI MODELS ALLOWED TO USE COPYRIGHTED INPUT?

There is currently much debate as to whether the Gen AI systems offered by private tech companies for commercial purposes are entitled to use copyrighted input without permission, and the conditions under which such use would be acceptable.

Even if there is use of copyright material by tech companies, it may be the case that an exception to copyright law called "fair dealing" may apply to shield those companies from copyright infringement in Australia. Fair dealing allows the use of copyrighted material for certain limited purposes to occur without permission from or payment to the owner. One such exception is for the limited use of copyright material for the purpose of research or study.[1]

Overall, the legal situation in connection with Gen AI music applications involves numerous complex issues, which are currently being litigated in various jurisdictions. The extent to which copyrights are affected is also difficult to answer because the data sets used to train these programs are kept secret. More transparency is also needed as a basis for fair remuneration.

The attitude of copyright holders in this context is clear: The use of copyrighted input must follow clear rules regarding transparency, consent and remuneration.

CONSENT

CREDIT & TRANSPARENCY

REMUNERATION

APRA AMCOS

Source: Goldmedia analysis. [1] Australian Copyright Council (2020).

"The EU have recently implemented the EU AI Act – requiring full disclosure of the data used to train AI being used in their territory.

"It is possible that this could influence AI development and disclosure in New Zealand. It would be helpful if New Zealand implemented similar legislation."

Sophie Burbery

Academic

Photo supplied

OVERVIEW: AI REGULATION WORLDWIDE

EU: AI ACT

- First-ever comprehensive legal framework on AI worldwide – *EU AI Act*
- Was approved in May 2024
- Establishes obligations for providers and users depending on the level of risk from artificial intelligence
- Includes specific rules and transparency requirements for generative AI:
  - Disclosing that the content was generated by AI
  - Designing the model to prevent it from generating illegal content
  - Publishing summaries of copyrighted data used for training

UK: Balanced approach

- Hasn't rolled out a comprehensive AI regulation
- Does not plan to do so
- Advocates a context-sensitive, balanced approach, using existing sector-specific laws for AI guidance
- National AI strategy is overseen by a specialised AI authority – *Office for AI*

China: Active regulation

- Stands at the forefront of jurisdictions that are actively introducing AI regulations
- Several specific AI applications are already governed by existing rules
- Published *ethical norms for new generation AI* covering areas such as the use and protection of personal information, human control over and responsibility for AI
- Issued *generative AI measures* with comprehensive obligations that touch upon content management, data privacy and security, and transparency of generative AI

Japan: Guidelines

- Published *governance guidelines for implement-tation of AI principles*
- Guidelines are not legally binding: lets the private sector manage its AI use

Canada: AIDA

- Is advancing the *AI and Data Act* (AIDA) to safeguard people from high-risk AI and promote responsible AI practices in line with global norms
- Has rolled out a *Directive on Automated Decision-Making* which lays down specific standards that the federal government must adhere to

US: Case by Case strategy

- Lacks a unified AI regulation
- Has established numerous guidelines and frameworks to govern the AI sector on a federal level
- In April 2024, rep. Adam Schiff (D-Calif.) introduced legislation to require transparency from companies regarding their use of copyrighted work to train their generative AI models – *Generative AI Copyright Disclosure Act*
- *NO FAKES Act* Introduced In U.S. Senate

AU/NZ: Potential reforms under consideration

- Neither Australia nor New Zealand have introduced specific AI governance laws or policies
- Australia published voluntary *AI Ethics Principles* in 2019 for the responsible design, development and implementation of AI
- Identified that current regulatory frameworks may not sufficiently prevent harms arising from the use of AI systems
- Announced the establishment of a new artificial intelligence expert group to assist the government in developing regulations on transparency, testing and accountability, including options for mandatory AI guardrails in high-risk settings
- In New Zealand an industry body has launched a discussion paper as it attempts to nudge government and SMEs towards action
- There are various laws that do not seek to regulate AI, but that may affect the development or use of AI, including the *Online Safety Act* (2021) in Australia

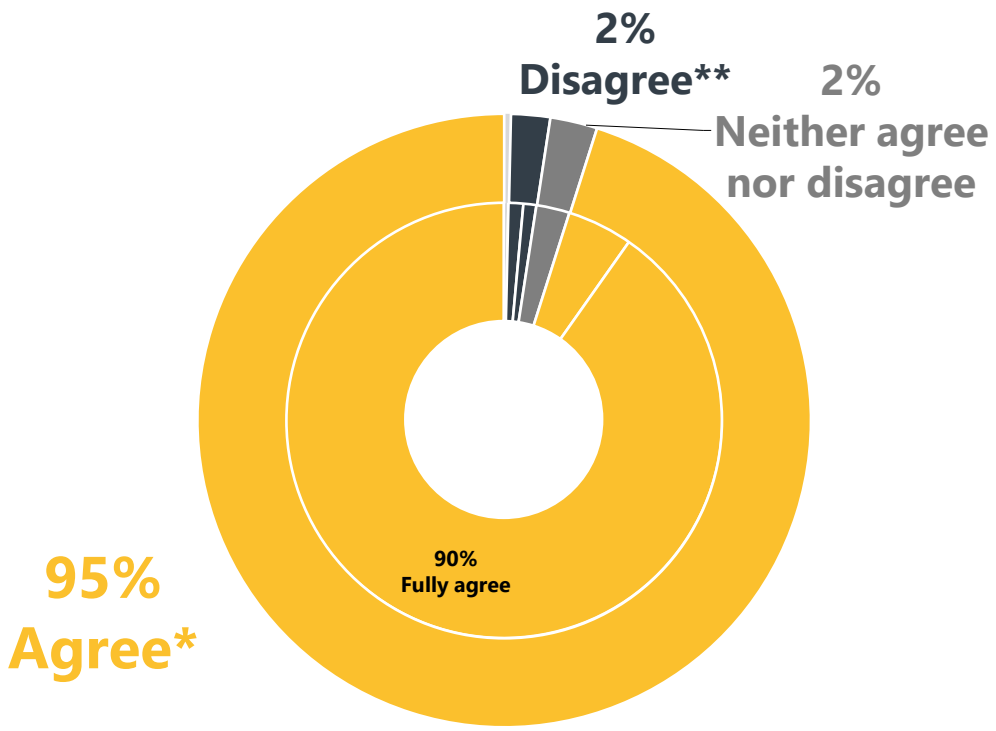
Brazil: AI Bill

- Is actively developing a comprehensive *AI Bill*
- Takes a risk-based approach by classifying AI systems under different categories
- Sets up a dedicated regulatory body, and imposes civil liability on AI developers and deployers

Source: Goldmedia analysis based on Legalnodes, White & Case, UTS. Background picture: Wikimedia, as of June 2024.

CONSENT FOR THE USE OF COPYRIGHTED CONTENT

Q: Copyright holders must be asked for consent when their works are used as input for AI systems.



At the heart of the issue of whether Gen AI may use copyrighted content as input for training is the question of the consent of the copyright holder.

An overwhelming majority (95%) of the questioned music creators agree that copyright holders must be asked for consent before their works are used as input for AI systems.

In principle, there are different measures for deciding against use and implementing this. Authors who do not wish their works to be used for AI training purposes can opt out. In such a case, the rights holder explicitly decides to exclude the use of their works for AI training purposes.

The organising of an opt-out regulation could be implemented and controlled via the collecting societies, e.g., through a collective opt-out.[1]

There are also opinions that prefer an opt-in to an opt-out "in the spirit of copyright law" in order to preserve the author's personal right to decide.[2]

*Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,265. Basis: APRA AMCOS members. Rounding differences possible. *Fully agree = 90%; Somewhat agree = 5%; **Fully disagree = 1%; Somewhat disagree = 1%. Difference to 100% = No answer. [1] Scheufen (2023); [2] Initiative Urheberrecht (2023).*

"AI-powered tools have the ability to reduce some of the more tedious and time-consuming tasks in my work. However, I am concerned that they may end up costing time and money in purchasing, upkeep, and learning the programs. This will only add to the cost of running my studio and increase clients' expectations to do things faster.

"I have spent 20+ years in the industry and a bucketload of time and money to learn my craft. There is consideration and nuance in every decision I make with my music. ***The thought of big tech companies mining my music to train AI without my consent is horrifying. This is a massive breach of copyright and undermines my legal right to consent, attribution, and remuneration for the usage of my intellectual property.****"*

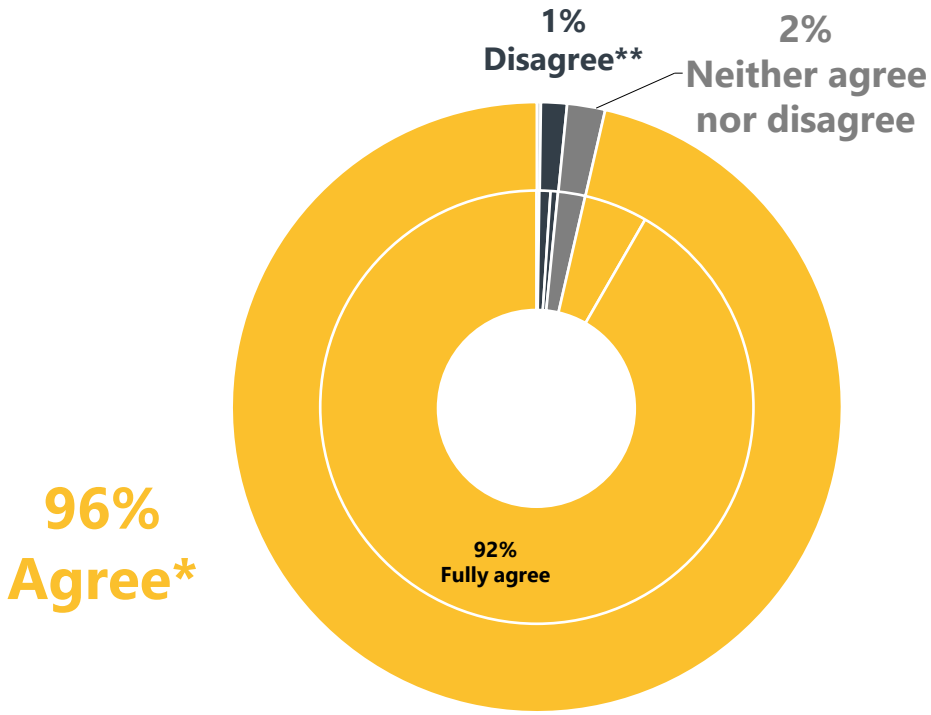
Caitlin Yeo

Musician and screen composer

Photo: Daniel Boud

TRANSPARENCY OF TRAINING DATA TAKEN FOR AI INPUT

Q: AI providers should be obliged to disclose when they use copyrighted works as 'training data'.



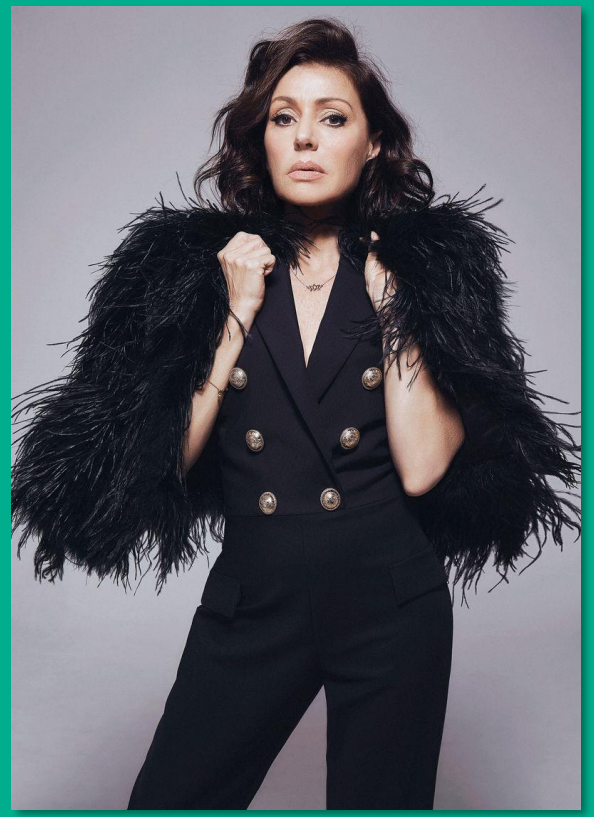
Consent for rights holders implies the need for transparency obligations for AI providers.

After all, a rights holder would first have to be informed that their work is being used as training data for Gen AI in order to opt out of such use.

One of the key demands of music creators is therefore to ensure transparency about the **type and extent of training data used by AI providers as input** for the development of their Gen AI models.

96% of the questioned APRA AMCOS members agree that AI providers should be obliged to disclose when they use copyrighted works as 'training data'.

*Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,219. Basis: APRA AMCOS members. Rounding differences possible. *Fully agree = 92%; Somewhat agree = 5%; **Fully disagree = 0.8%; Somewhat disagree = 0.5%. Difference to 100% = No answer.*



"Artificial intelligence is just that... artificial. The beauty of human creation is the work of alchemy, not an algorithm. Art is a fundamental form of human expression, unable to be replicated by a machine. It has no place in the arts whatsoever.

"The rapid advancement of AI has been a categorical hand grenade decimating the livelihoods of artists all around the world! It has been imposed on our industry without our consent and artists are being exploited by greed. Their sole mission is to steal the livelihood of artists. Pure theft should not be a business model supported by government.

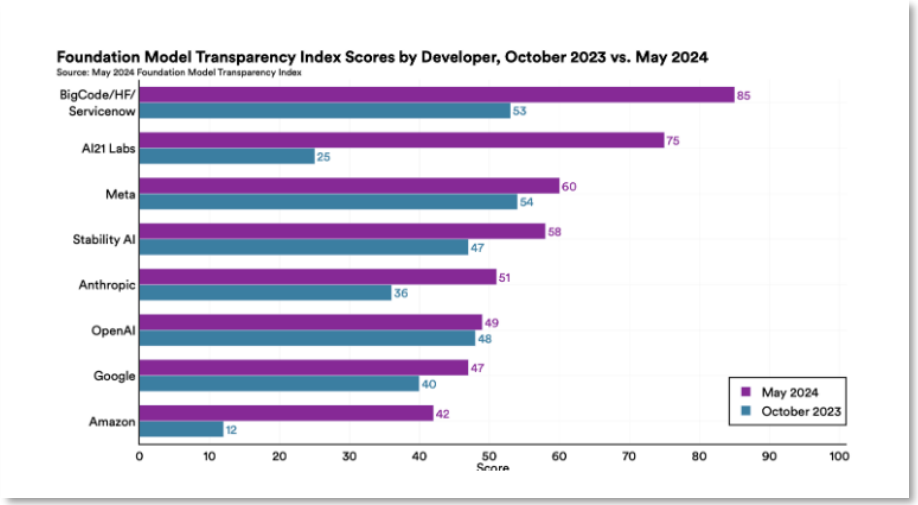
"Governments have an ethical and moral obligation to draw a very definitive line in the sand. Enact legislation to protect artists everywhere. Look beyond financial frameworks and set ethical boundaries. It is the right thing to do. It is the only thing to do."

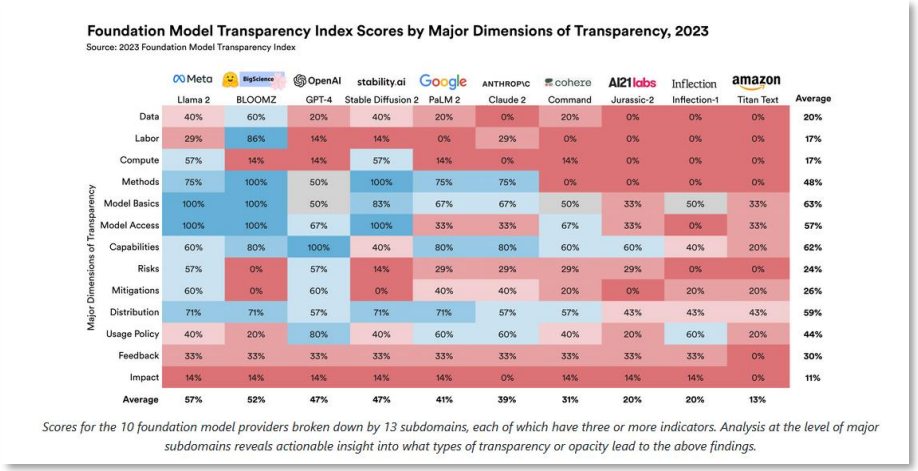
Tina Arena

Singer/songwriter

Photo: Bernard Gueit

FOUNDATION MODELS SHOW LACK OF TRANSPARENCY, HOWEVER, ARE IMPROVING





Scores for the 10 foundation model providers broken down by 13 subdomains, each of which have three or more indicators. Analysis at the level of major subdomains reveals actionable insight into what types of transparency or opacity lead to the above findings.

In October 2023, the Center for Research on Foundation Models at Stanford University released the **Foundation Model Transparency Index**.

It was designed around 100 transparency indicators, which codify transparency for foundation models, the resources required to build them, and their use in the AI supply chain.

Ten leading developers were scored against these indicators.

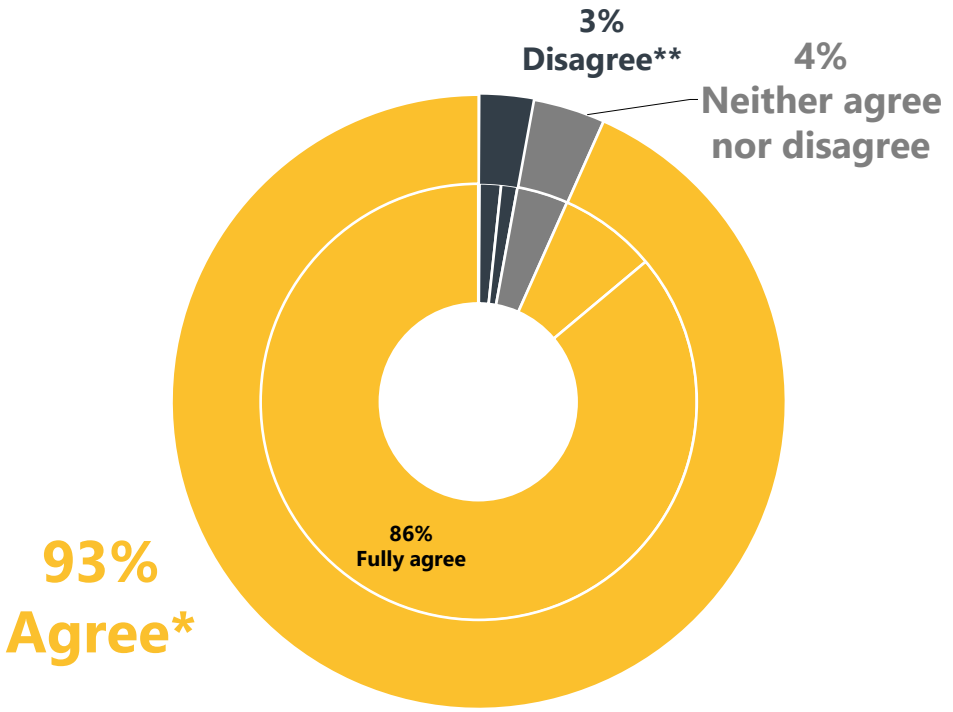
The main finding of this scoring was that **no major foundation model developer is close to providing adequate transparency, revealing a fundamental lack of transparency in the AI industry**.

The top-scoring model scored only 54 out of 100. The mean score was just 37%. In a follow up study conducted in May 2024 **the average score on transparency increased from 37 to 58 out of 100 from October 2023 to May 2024**, with significant improvements "across every domain, with upstream, model, and downstream scores improving by 6–7 points." While this was treated to be encouraging, **there is still significant room for improvement.**[1]

Source/Screenshots: CRFM (2023); [1] *Iyer (2024).*

IDENTIFICATION OF AI OUTPUT

Q: AI-generated music tracks and other types of works should be identified as such.



Identification of AI-generated music is another important demand of music creators in the context of transparency when it comes to the output of Gen AI. Out of all questioned APRA AMCOS members, **93% agree that AI-generated music tracks and other types of works should be identified as such**.

Transparency at the output level of music generated by or with the help of AI means, first and foremost, clear and comprehensible labelling to prevent disinformation and to protect the interests of copyright holders as well as to give them due credit. The ISCC standard[1] developed with EU funding could be helpful for this purpose, especially as it is decentralised and non-proprietary. This would be linked to the prohibition on deleting such a label; similarly, the separation of a metadata record potentially linked to the file (or its content) from the file (or its content) should also be prohibited – akin to the prohibition on circumventing copy protection measures.

Various companies are working on solutions to detect whether a track has been entirely or partially made by AI. These AI detection tools could play an important role in the fight against unauthorised AI-generated music. They can help detect AI-generated music and/or voices. Furthermore, they enable artists to monitor AI-generated versions of their songs in order to recognise copyright infringements. With this they can provide crucial evidence to support copyright claims in the event of disputes.[2]

*Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,228. Basis: APRA AMCOS members. Rounding differences possible. *Fully agree = 86%; Somewhat agree = 7%; **Fully disagree = 2%; Somewhat disagree = 1%. Difference to 100% = No answer. Initiative Urheberrecht (2023); [1] ISSC (2023); [2] LALAL.AI (2024).*

"The biggest issue is the ethical and copyright-related implications. Ensuring that AI-generated content respects copyright laws is essential to maintaining the integrity of the music industry and protecting songwriters and their royalties."

Linda Bosidis

Co-CEO Mushroom Music

Photo supplied

PHOTO: ZEYNEPKAYA

PART 3: CHALLENGES

Overview

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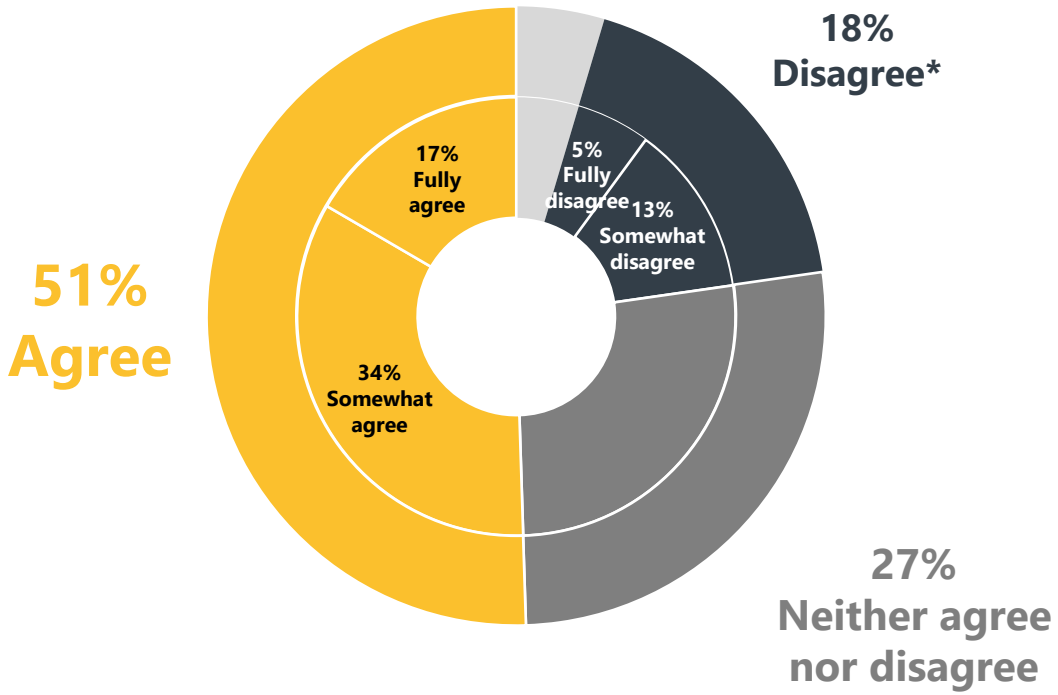
WILL HUMAN-MADE MUSIC BE REPLACED?

Q: Music made by humans is being increasingly replaced by AI music.



Artists worldwide are increasingly concerned that their work is being replaced by AI. In May 2023, the 11,500 members of the Writers Guild of America went on strike for five months. Among other topics, writers were increasingly concerned that producers will use artificial intelligence to "write" scripts or at least fill in the blanks on unfinished screenplays. The guild characterised the issues behind the labour dispute as "an existential crisis."[1]

Of the music authors and creators surveyed for this report, 51% agree that music made by humans is increasingly being replaced by AI music, while only 18% do not think so. The younger the members are, the less likely they are to think that AI music will replace human-made music.

Although this is already a significant proportion, other professional groups in the music sector are apparently even more concerned. A poll on the Bedroom Producers Blog asked 1,533 producers how they felt about AI and its expanding influence in the creative arts. While overall, 87% of those surveyed believe the technology will replace the existing tools of music production, 73% of surveyed producers think that AI music generators could replace human music producers in the future, at least to some extent.[2]

A study conducted by TuneCore[3] shows similar figures, with 77% of the surveyed artists afraid of being replaced by AI-generated music.

*Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,259. Basis: APRA AMCOS members. Rounding differences possible. *Fully disagree = 5%. Difference to 100% = No answer. [1] The Associated Press (2023); [2] Zlatic (2023); [3] TuneCore (2023).*

"Every new technology provides some creative opportunities, and I'm sure that will be true for AI too. Just because something is 'different' doesn't mean that it automatically makes everything 'worse,' but ***typically every technology—from automobiles to mobile phones—has eventually required some guardrails to ensure that the benefits outweigh the harms****. That's bound to be the case with AI too.*

"It might be possible for 'Intelligence' to be 'Artificial,' but most ***music is driven by the heart, not the head, and I don't think Artificial Feelings can stir the soul****. If we start blurring the lines between genuine emotions and the machine-generated versions, then we risk losing a key part of what it means to be human."*

Missy Higgins

Singer/songwriter

Photo: Tajette O'Halloran

THERE ARE VARIOUS VULNERABLE SECTORS IN THE MUSIC BUSINESS

While it is hard to say how and to what extent artificial intelligence will impact the music industry as a whole, there are some sectors that are expected also by experts interviewed for this report to be more vulnerable than others. **"Generally speaking, the more generic a subset of the music industry is, the more likely it is to be assisted or partially replaced by AI generation."**[1]

Sync, Lo-Fi and other rather generic music

Companies or businesses looking for more generic music to soundtrack their assets or commercials may already be satisfied with AI-generated music in the future. Generic Lo-Fi music, which is listed in DSP (digital streaming platform) playlists for concentration or meditation, for example, could also be a genre that can be replaced comparatively easily by AI-generated tracks.

Amateur texting

Lyrics generators such as ChatGPT can already be used to generate ideas for music or song lyrics based on previous data. However, it is unlikely that these forms of AI can match the experience and value of professional songwriters – at least in the short term.

Video production

Video production is expensive, especially for independent artists. We may see more and more artists turning to AI-powered videos to reduce the cost of creating music videos and marketing materials.

Session players

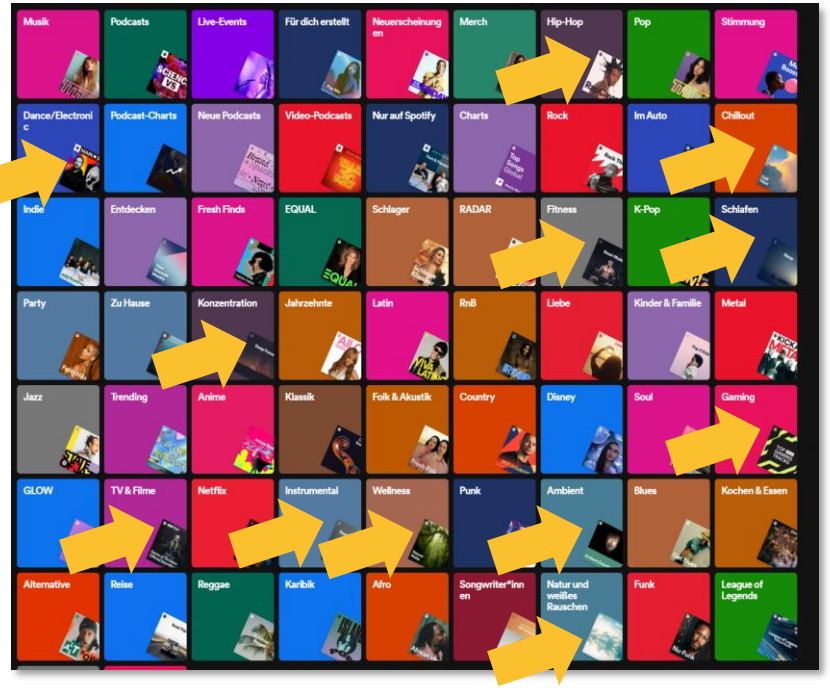
Digital recreations of a wide variety of instruments are becoming more advanced, which could lead to fewer jobs for session players.

Automated technology in mixing/mastering

AI-assisted mixing and mastering is already standard in many places and can replace manual work in this area. Specialists in this area will have to expand their skillset accordingly.

Source: [1] Brunotts (2023).

GENERIC MUSIC CATEGORIES ARE PRIMARILY AFFECTED



When it comes to the question of which music categories and genres are primarily affected by AI, a clear picture emerged from the expert interviews conducted, that the more generic the music, the more likely it is to be replaced by AI.

For this reason, categories such as production music will increasingly no longer be created by hand, but with the aid of AI. The market for background music, e.g., for TV, retail stores or social media, is also likely already in the process of being supplied by AI-generated music on a larger scale, meaning that a substitution of human-made music is already taking place here.

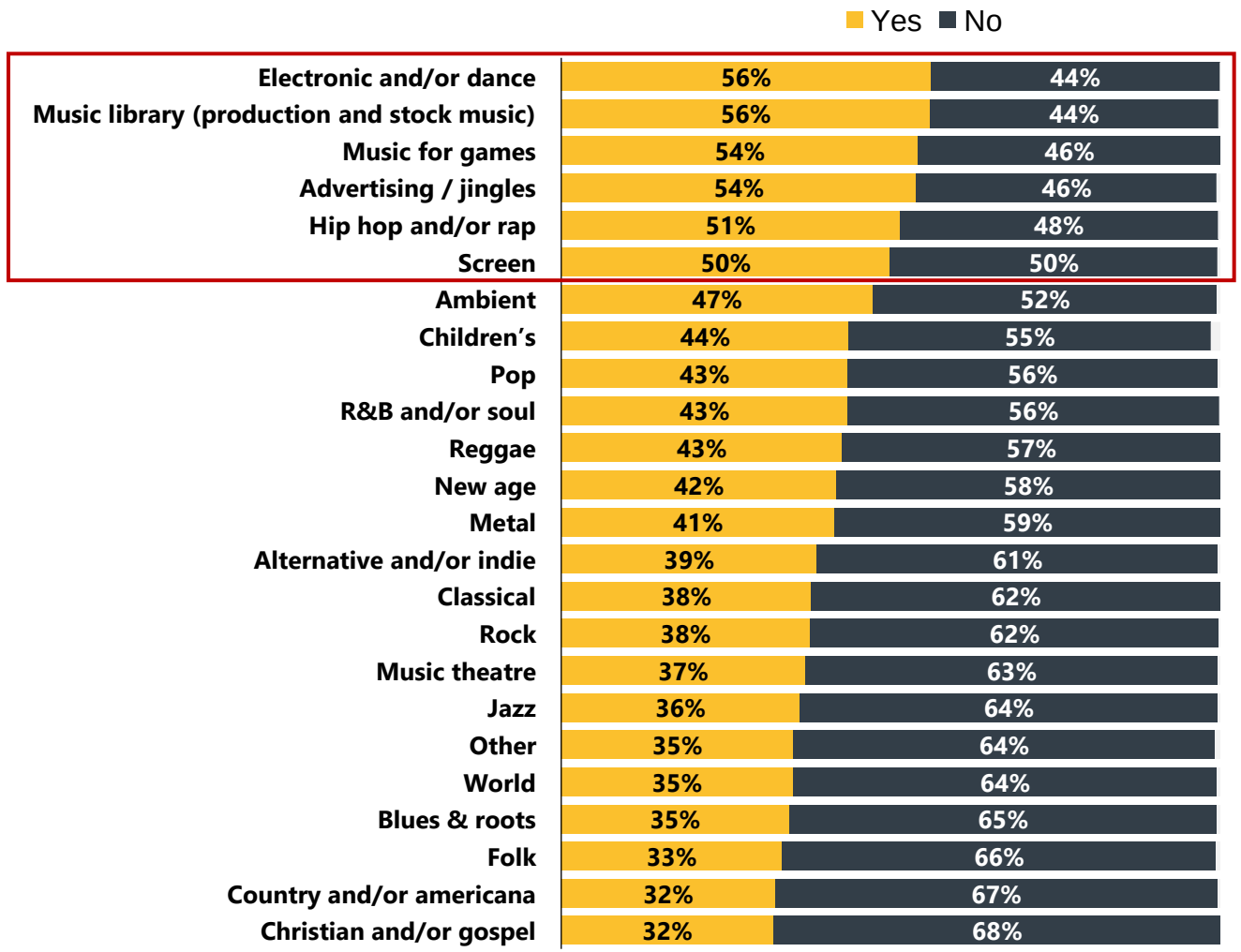
Relatively generic Lo-Fi music also plays a significant, albeit not clearly quantifiable, role on streaming platforms, in playlists for concentration, wellness or falling asleep, for example. In a further development, other music styles that have a comparatively high proportion of automation and artificiality are likely to be more strongly influenced by AI, e.g., elements of electronic music or hip hop, where voices that have been distorted by autotune have already played a role for some time.

Screenshots: Spotify; Artlist.io.

AI USE BY MUSIC GENRES

The proportion of AI use among the music creators surveyed for this study differs significantly depending on the genres or categories in which they create music. 56% of respondents who make electronic music or production and stock music have used AI in their work, followed by those who make music for games and advertising music with 54% each. Musicians for hip hop and rap as well as screen music follow with 51% and 50%. **The genres/categories in which professional musicians already frequently use AI are also the music genres that are most at risk. AI lowers the barriers for non-professionals to market entry and greatly increases the number of available tracks.**

Q: Have you used AI technologies in your work with music? / Which genre(s)/categories would you say the works in your repertoire (mainly) belong to?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,922. Basis: APRA AMCOS members. Rounding differences possible. Difference to 100% = No answer.

"I can envision AI practically wiping out much of the music currently created by people. I'm sure it will quickly put an end to music libraries. Diegetic background tracks in film and TV could already be replaced by AI-generated ones—if that is not already happening. It could also soon replace scores in many types of productions.

"I have heard people claim that it will just get rid of 'cookie-cutter' music—commercial radio, etc.—but, in the play I have done, it is quite easy to make experimental-sounding work. All our genres have general rules and forms that can be replicated.

"I wonder about AI being developed to make art—the fun stuff in life. ***It is better when technology makes life easier and less boring—like making washing machines. Music and art feel like low-hanging fruit for developers, but there will also be a bottom line; large tech companies will scoop up almost all of the profits to be made from this.****"*

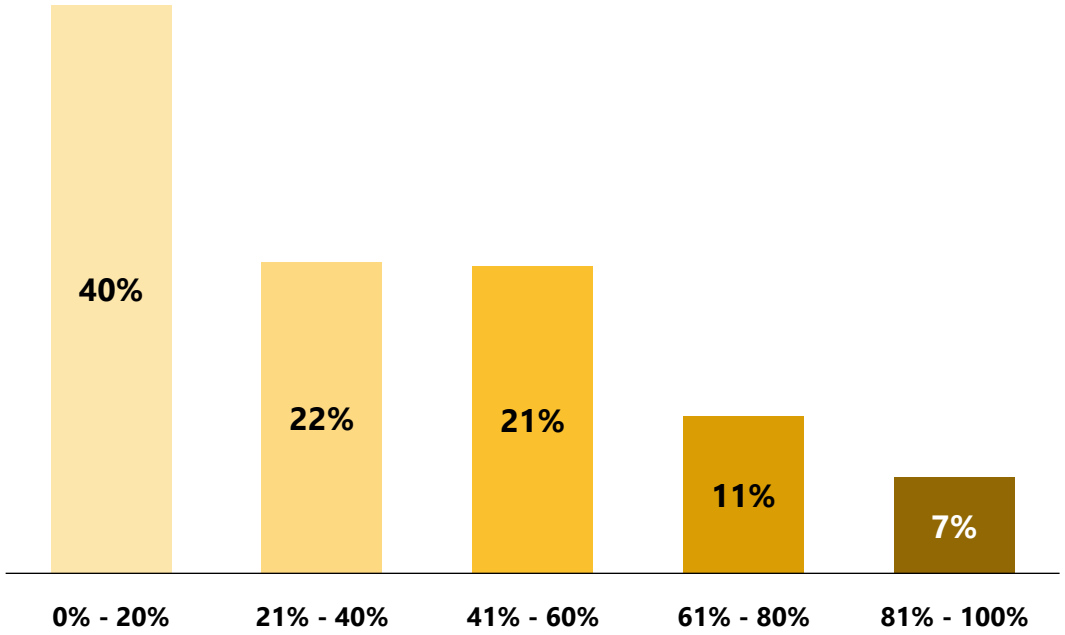
David Long

Composer and lecturer

Photo supplied

HOW MUCH OF MUSIC CREATORS' WORK WILL BE REPLACED BY AI?

Q: To what extent do you think your work will be replaced by AI-generated work by 2028?



Experts in the field estimate that 20 to 30% of music created by humans could be replaced by AI-generated work in the next five years. This could include the composition and production of entire tracks, or various steps in the production process, such as mixing and mastering. Electronic music will be particularly affected, but hip hop, muzak (background music), stock music, soundtrack music and musical scores will also see significant impacts.[1]

This sentiment is echoed among surveyed APRA AMCOS members. **A significant portion (62%) estimate that up to 40% of their work could be replaced by AI-generated work by 2028.** 32% of respondents can imagine AI replacing more than 40% and up to 80% of their work, and **some creators (7%) even believe their work could be entirely or at least very substantially replaced by AI**.

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,863. Basis: APRA AMCOS members. Rounding differences possible.
[1] Goldmedia expert interview.

*"**The risks are potentially pretty severe.** It won't take much longer before AI songwriting and AI-generated music are far cheaper for a lot of the jobs songwriters and musicians currently take to help support and finance their craft. Why hire a DJ when software can generate and mix playlists (along to AI-generated visuals) at a club? Why hire a composer to score your documentary when at the push of a button you can get a range of different suitable options for music for your project? **In some ways, it's nice to think that bespoke, human-created music might become a valued, artisanal kind of thing, but that will likely come at the expense of a decimated industry.**"*

Ashley Doodkorte

Drummer (Voyager)

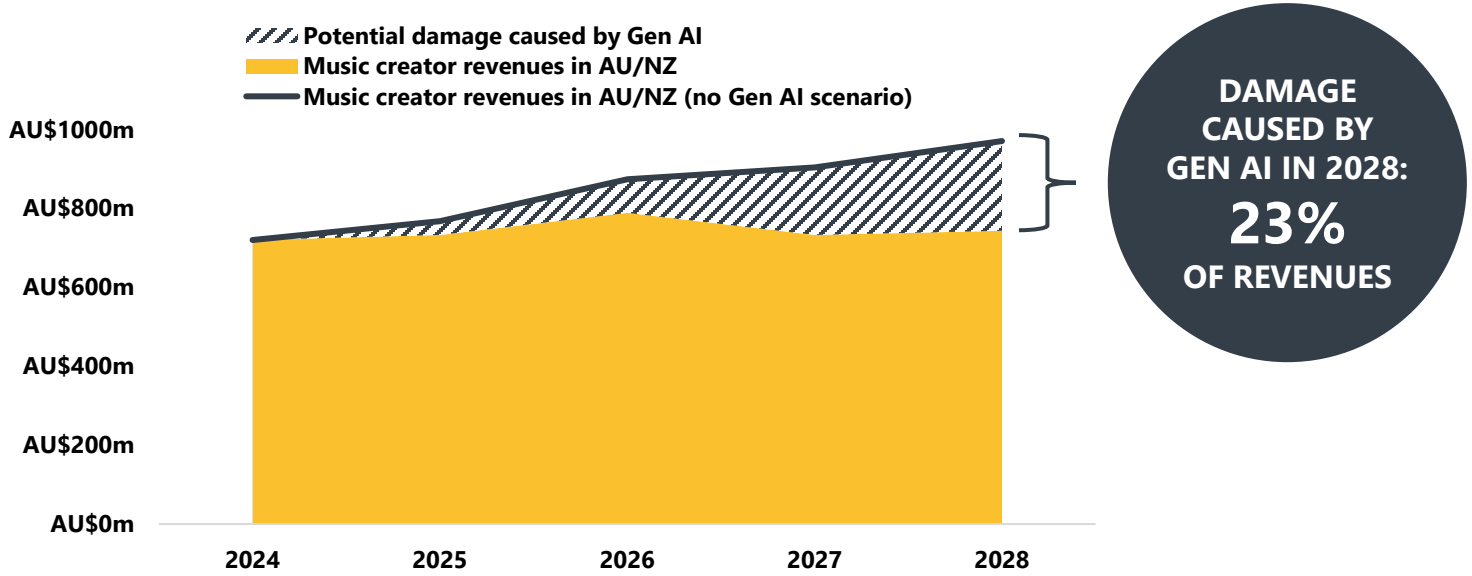
Photo supplied

REVENUES OF MUSIC CREATORS AT RISK

Based on APRA AMCOS data and forecasts about the earnings distribution, as well as data of the surveyed music creators and statements from the interviews conducted, the share of revenues that are most at risk for creators in Australia and New Zealand was estimated. These relate primarily to areas in which generic music plays a major role, such as production music in TV or social media and background music in commercial venues. Other income areas are also affected, but to a lesser extent.

It can be assumed that by 2028, up to 23% of music creator revenues are at risk of being impacted by Gen AI. This corresponds to an estimated potential damage of around AU$227m in 2028 alone and a cumulative total damage for the period 2024-2028 of around AU$519m for music creators in Australia and New Zealand.

REVENUES OF MUSIC CREATORS AND ESTIMATED DAMAGE CAUSED BY GEN AI IN AUSTRALIA AND NEW ZEALAND, 2024-2028



Source: Goldmedia analysis based on APRA AMCOS data and forecasts (2024).

METHODOLOGY FOR DAMAGE CALCULATION

- Each category of music copyright revenues (e.g., for streaming, social media, radio, TV, live music, background music in commercial venues) was assessed for the potential risk of being replaced by Gen AI.
- To achieve this, it was estimated which share of revenue of each category of rights is likely to be substituted by Gen AI during the period until 2028, based on APRA AMCOS data, the APRA AMCOS member survey and interview statements.
- A forecast for music creator revenue in AU/NZ in a *no Gen AI scenario* was calculated based on APRA AMCOS data.
- The sum of the shares that are assumed to get replaced by Gen AI corresponds to a total share of 23% of total revenues of music authors and publishers in Australia and New Zealand in 2028.
- Remaining music creator revenues were then calculated by subtracting the potential revenues lost to Gen AI from the revenues forecast in the *no Gen AI scenario*.

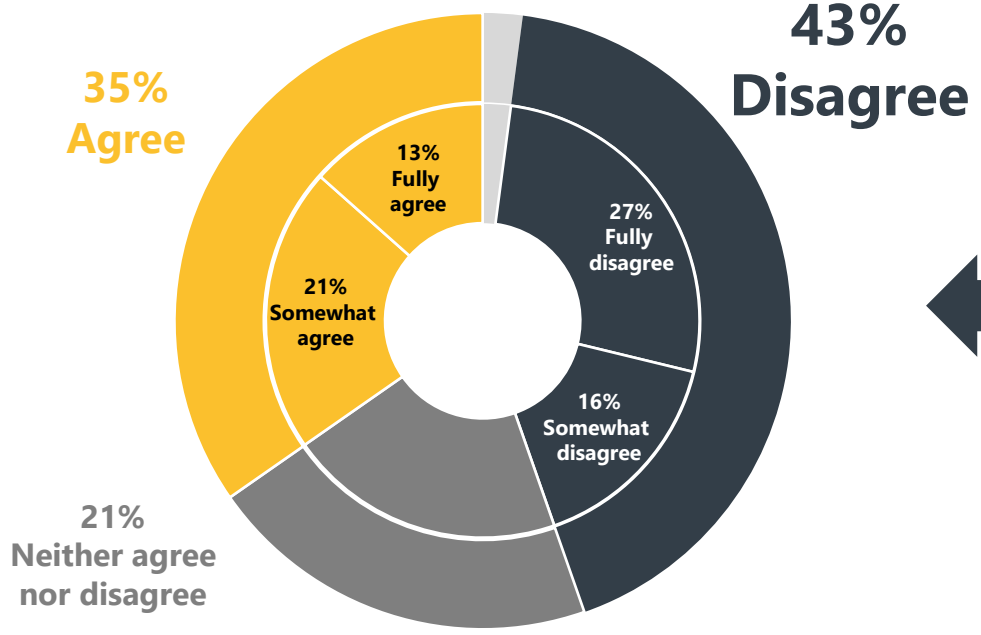
Source: Goldmedia analysis.

DESPITE AI'S GREAT ECONOMIC POTENTIAL, MUSIC CREATORS HAVE FINANCIAL FEARS

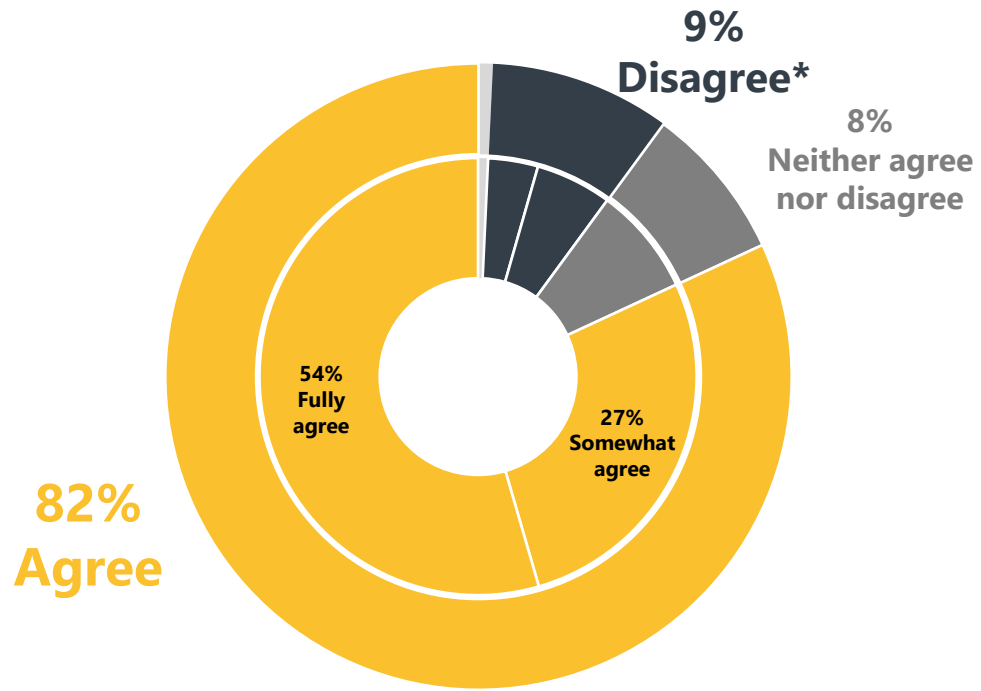
While, of the roughly 4,200 music creators who were questioned for this study, at least 35% agree that *in principle*, AI technology in the music industry has great economic potential, only a few seem to be optimistic about participating in it.

On the contrary, a remarkably high proportion have existential financial fears, with 82% feeling afraid that the use of AI in music could lead to music creators no longer being able to make a living from their work.[1]

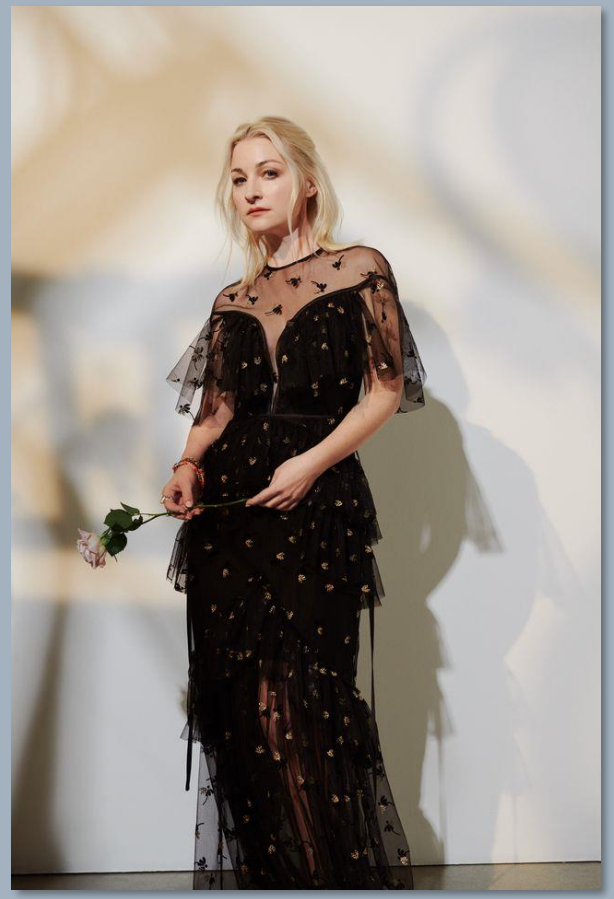
Q: In principle, AI technology has great economic potential in the music sector.



Q: The use of AI in music could lead to music creators no longer being able to make a living from their work.



*Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,220 / 4,201. Basis: APRA AMCOS members. Rounding differences possible. Difference to 100% = No answer. *Fully disagree = 4%; Somewhat disagree = 6%. [1] A survey conducted by TEOSTO (2023, p. 12) similarly found widespread fear among the 717 participating music artists of decreased income from music due to AI.*



"[The greatest risk of AI to the music industry is] that people are idiots, and they do fall for it, at least at first, because it's cheap and it's exciting. ***If we lose people because their jobs are being replaced by AI, we'll never get them back.*** *We saw that during the pandemic, when we lost so many people – not only the artists, but the talented craftspeople, the crew, who suddenly couldn't survive and had to get out. Taking with them years and years of experience and talent. And now they're just gone.* ***If we let the same thing happen with AI replacing people – artists, producers, engineers, everyone who helps make music happen – we'll never get them back. Artists will always create, but if there's nowhere for their creations to go, and all we have is AI-generated content, we are truly f**ked.***"

Kate Miller-Heidke

Singer/songwriter

Photo: Jo Duck

"At this point in time, I don't see AI as a threat to the art of bespoke screen music, as that requires the heart and soul of a human music creator. However, AI will undoubtedly have a huge economic impact on sections of the screen music and the music industry in general, particularly those catering to the demand for more generic forms of music.

"I also fear that AI will be increasingly used by major international content creators as a means of cost-cutting, resulting in a glut of mediocre-sounding productions that could greatly benefit from music composed by a human!"

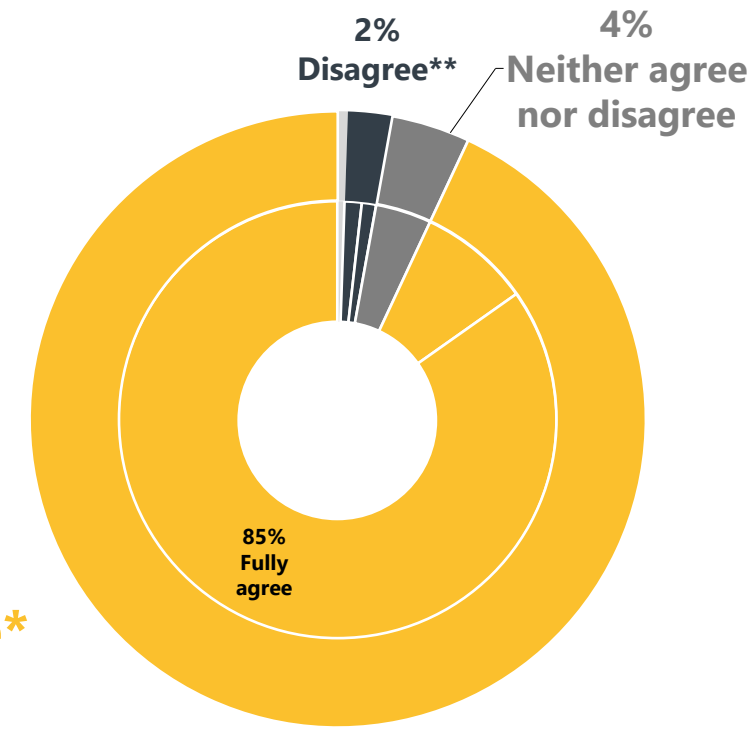
Burkhard Dallwitz

Film and TV composer

Photo: Daniel Boud

REMUNERATION OF COPYRIGHT HOLDERS

Q: Copyright holders must be involved commercially when their works are used as input for AI systems.



Given the fact that Gen AI systems are only capable of mimicking human creativity because human-made works have been used as training material,[1] the next obvious question is, in what form human authors are remunerated for their services, which ultimately comprise the fuel for these AI applications.

How and to what extent authors and creators, whose works form the basis for Gen AI in music, can be fairly remunerated is one of the most pressing questions for music creators. The overwhelming majority, **93% of APRA AMCOS members surveyed in this study, call for commercial involvement when their works are used as input for AI systems**.

This question generally covers two dimensions:
1. Compensation for financial losses already caused.
2. A fair remuneration for future use.

TODAY

Compensation for financial losses caused by copyright infringement by taking and reproducing materials without permission for AI training.

A fair remuneration for future use of works created by humans for training of Gen AI.

Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,180. Basis: APRA AMCOS members. Rounding differences possible.
**Fully agree = 85%; Somewhat agree = 8%; **Fully disagree = 1%; Somewhat disagree = 1%. Difference to 100% = No answer. [1] Senftleben (2023).*

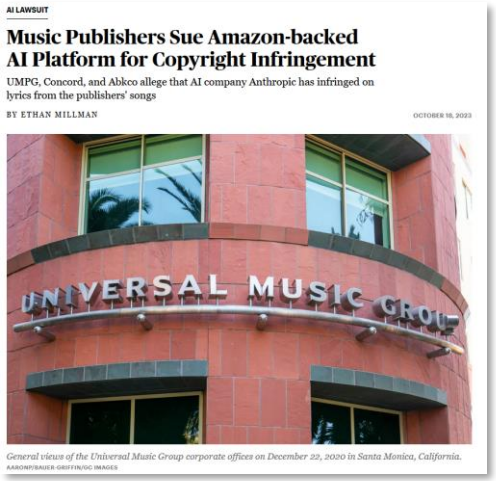
"In a world where art and original thought are increasingly undervalued; and while a record industry, already beaten senseless by the algorithm, sets a final, turbocharged course towards music as blatant commercial homogeny – AI will be used to mine the very best and original ideas from struggling artists at the bottom of the pile, whilst rewarding the few performers who sit at the very top. It's already happening. Real artists, writers, composers are getting squashed, and AI will only help increase the weight."

Julian Hamilton

Singer/songwriter, The Presets

Photo: Ben Sullivan

VARIOUS COPYRIGHT INFRINGEMENT LAWSUITS ARE ALREADY TAKING PLACE



AI LAWSUIT

Music Publishers Sue Amazon-backed AI Platform for Copyright Infringement

UMPG, Concord, and Abkco allege that AI company Anthropic has infringed on lyrics from the publishers' songs

BY ETHAN MILLMAN

General views of the Universal Music Group corporate offices on December 22, 2020 in Santa Monica, California.

The Times Sues OpenAI and Microsoft Over A.I. Use of Copyrighted Work

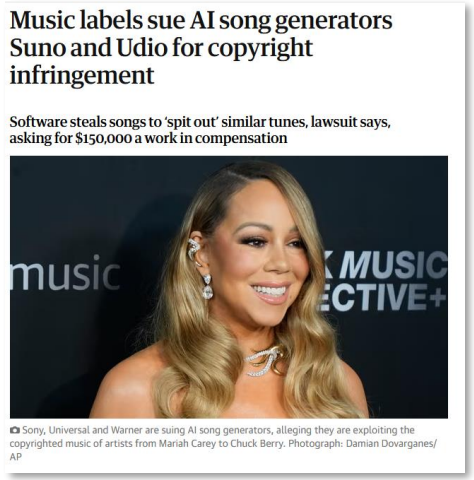
Millions of articles from The New York Times were used to train chatbots that now compete with it, the lawsuit said.

A lawsuit by The New York Times could test the emerging legal contours of generative A.I. technologies. Sasha Maslov for The New York Times

George RR Martin and John Grisham among group of authors suing OpenAI

Seventeen authors have joined a new lawsuit alleging 'systematic theft on a mass scale' by the program

George RR Martin. Photograph: Karolina Webb



Music labels sue AI song generators Suno and Udio for copyright infringement

Software steals songs to 'spit out' similar tunes, lawsuit says, asking for $150,000 a work in compensation

Sony, Universal and Warner are suing AI song generators, alleging they are exploiting the copyrighted music of artists from Mariah Carey to Chuck Berry. Photograph: Damian Dovarganes/ AP

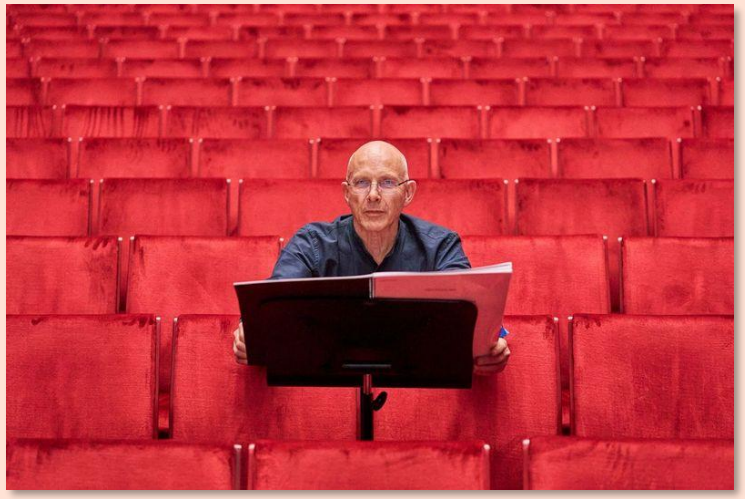
Rights holders outside and inside the music business have already taken AI companies to court: several best-selling authors (with George R. R. Martin and John Grisham among them[1]) have been suing OpenAI for copyright infringement since August 2023.[2] In December 2023, The New York Times sued OpenAI and Microsoft, accusing the companies of infringing on its copyrights by using millions of its articles to train AI technologies like the ChatGPT chatbot.[3]

One of the first lawsuits in the music sector, filed in October 2023, was Universal Music Publishing Group, Concord, and Abkco against Anthropic, an Amazon-backed AI company, and its AI-assistant service Claude. The three publishers' claims for relief include direct copyright infringement, contributory infringement, vicarious infringement, and removal or alteration of copyright management information. The plaintiffs were seeking as much as around AU$217,000 per work infringed.[4]

In June 2024, AI song generators Suno and Udio were sued for copyright infringement, alleging that the AI music startups are exploiting the recorded works of artists from ABBA to Mariah Carey. The lawsuits were brought by labels including Sony Music Entertainment, Universal Music Group Recordings and Warner Records. The lawsuit claims Suno and Udio's software steals music to "spit out" similar work and asked for compensation of around AU$217,000 per work.[5]

APRA AMCOS

Source/Screenshots: [1] The Guardian; [2] Statement of claim "Chabon et al. v OpenAI" (2023); [3] Grynbaum and Mac (2023); [4] Millman (2023); [5] The Guardian (2024). Figures are presented in AU$, converted from US$ based on the average exchange rate over the past six years.



"The use (or misuse) of AI has the potential to decimate the music industry and ultimately create a situation that sees the obliteration of the composer's craft as we know it, thereby expediting an existential crisis in the creative sector.

*"**The flagrant disregard for copyright law and disrespect for the creators, who have devoted their lives to the pursuit of one of humankind's greatest gifts – an art form that has evolved over millennia into a sophisticated and highly nuanced pinnacle of human expression – is tantamount to the grand theft of intellectual ownership on a colossal and unprecedented scale.***

"In the absence of appropriate government policies and regulations, this will inevitably result in a dystopian future of electronically created AI music for movies, series, and documentaries that bypasses human creative input. The resulting end product will yield no more than a bland, sanitised, amorphous, and soulless outcome, entirely devoid of the warmth, expression, spirit, emotion, and heart of the human experience."

Nigel Westlake

Composer/conductor

Photo: Simon Westlake

TOWARDS A FAIR REMUNERATION MECHANISM

With regard to the practical implementation of remuneration mechanisms, there are two different reference points:

It is conceivable to impose an obligation to pay remuneration at the stage of AI training (input dimension). "Arguably, human authors should be compensated for the use of their works in AI training procedures, since the machine cannot produce results resembling human literary and artistic works unless it has had the opportunity to analyse human creations."[1]

Remuneration could also focus on the offer of Gen AI products and services in the marketplace (output dimension). Various licensing systems are conceivable for implementing the remuneration claims on the output level. While the obvious solution would be a licensing model in the form of having to distribute a share of their net revenues to the rights holders, it could also take the form of statutory remuneration scheme instead of (or in combination with) a licensing model.

Source: [1] Senftleben (2023).

LICENSING SYSTEMS

CONTENT LICENSING MODEL TYPES FOR GEN AI TRAINING DATA

Potential to Maximize Pool of Available Training Material	License Fees	Transparency of License Terms*	Administrative Burden for Developers & Rights Holders
Direct Licensing Via 1-to-1 Negotiation			
Example: OpenAI's licensing agreement with Associated Press			
Low	Moderate to very high for most desirable content	Opaque	High
Direct Licensing Via Commercial Aggregator			
Examples: Copyright Clearance Center licensing of scientific and academic journals for AI training; Shutterstock's licensing of its image-video-music library to OpenAI, LG and Meta			
Low to moderate	Variable	Translucent to opaque	Low to moderate
Judicial Settlement Model			
Example: Proposed class settlement in Google Books lawsuit, seriously considered by book publishing industry but rejected by court			
If opt-In: Moderate; If opt-out: High	Low to moderate	Transparent to translucent	Low
Collective Licensing Model with Government/Regulatory Influence			
Example: Blanket licenses for musical works in repertories of nonprofit American Society of Composers, Authors and Publishers (ASCAP) and for-profit Broadcast Music Inc. (BMI) controlled by government consent decrees			
If opt-In: Moderate; If opt-out: High	Low to moderate	Transparent	Low
Statutory/Compulsory License			
Example: License for noninteractive digital performance of sound recordings implemented by the U.S. Copyright Act, with license fees set by Copyright Royalty Board and administered by SoundExchange			
High (no options to opt out)	Low	Transparent (but complex)	Low for creators; moderate for developers

Licensing is expected to become more prevalent between Gen AI developers and rights-holders. Various licensing models for Gen AI are anticipated, with several already in use. Direct licensing through one-to-one negotiations and through commercial aggregators are currently operational. Direct licensing models are likely to continue alongside any new models introduced. Additionally, collective, mandatory, and judicial settlement licensing models might be considered for implementation, either as alternatives or in conjunction with existing models.[1]

"AI music is essentially a very complicated micro-licensing platform. If an output has been created based on the direct compositional influence of 20 copyrights, in an ideal world, that should trigger 20 micro-licences on the output."[2]

It remains to be seen how fair remuneration can be structured for all parties involved. The differing interests of stakeholders must be addressed by the licensing models, which need to cater to various perspectives and requirements:

- Ensure adequate compensation for small and large rights holders and enable additional revenue by making their content available for AI use.
- Ensure legally compliant access to training data for small and large AI developers.
- Minimise the burden and cost of licence administration.
- Maximise the pool of quality training data.

Source: [1] Butler (2024); [2] Goldmedia expert interview with Tushar Apte.

*"**Because an AI music generator relies on being trained on existing music to synthesise its output, the innovative quality of its output is inherently limited. I see the likely ubiquity of AI-generated music actually creating fertile ground for human-originating works to flourish – after all, only human-originating works can showcase the authentic ingenuity and storytelling that comes from lived experience, perspective, tradition, and connection.***

"The flipside is that if AI-generated music does indeed become ubiquitous, its ubiquity may potentially be used by commercial users of music to 'justify' arguing down the commercial value of music across the board. This risks denying human music creators and publishers a deserved fair return on their creative endeavors."

Damian Rinaldi

General Manager, AMPAL
(Australasian Music Publishers Association Limited)

Photo supplied

"AI is just another tool that artists can use in their music creation process. From the early exploratory stages of writing and finding sounds, to lyric development, production workflow, and even post-production assistance with mixing and mastering, AI tools provide opportunities for musicians to create a larger volume of demos faster and realise their ideas with greater precision. These tools aren't always 'correct' but might be a good starting point. Fundamentally, it still comes down to the human behind the computer to tweak to taste.

"In the future, will production companies and agencies have in-house 'prompt engineers' crafting music cues without ever reaching out to a composer? ***For younger screen composers starting out, how will they have the opportunity to cut their teeth on these smaller jobs if they don't exist anymore because it's possible to produce them with AI almost instantly and sound okay?*** *If it wasn't for those smaller jobs in my formative years as a young aspiring composer, there is no way I'd be in the position I'm in today."*

Lance Gurisik

Composer

Photo: XINGERXANGER


PHOTO: JACINTA KEEFE

PART 3: CHALLENGES

Overview

Copyright, Credit and Consent

Remuneration and Economic Implications

Personal Rights

AI and Music Streaming

Outlook

DEEPFAKES AND VOICE CLONING HAVE BECOME A TOP PRIORITY CONCERN IN THE MUSIC INDUSTRY

Gen AI is also a top priority for music labels:

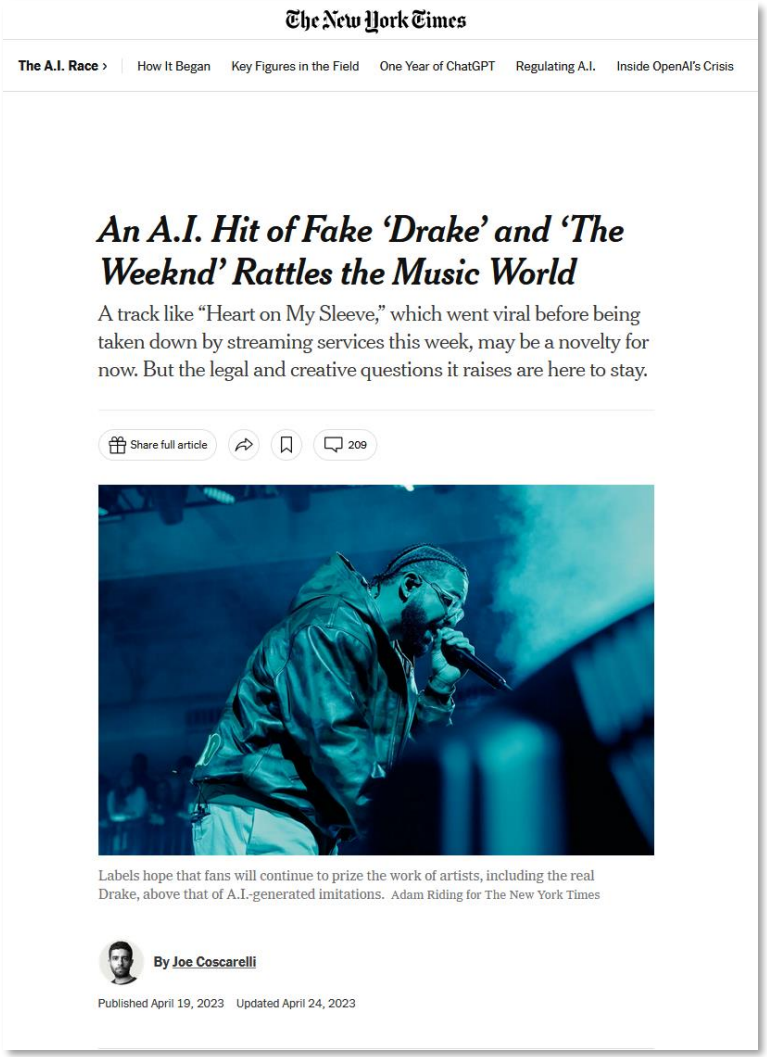
"I would put this at the top of the list of industry issues because we need people to understand what's happening right now. We need to work very hard to define new models so that we can enable Gen AI without looking away from what will essentially be a wholesale theft of intellectual property from the entire creative community," says Michael Nash, EVP and Chief Digital Officer, Universal Music Group.

On the one hand, the potential of AI in connection with marketing and target group identification as well as technical production is emphasised. On the other hand, the music industry sees serious dangers, including in the area of voice cloning:

"We have serious concerns about the potential for AI-synthesised voice technology to be used at scale to cover songs and attempt to replace artists," says Dennis Kooker, President of Sony Music Entertainment.

Source: IFPI Global Music Report (2023, p. 36). Screenshot: IFPI Global Music Report (2024).

CASE STUDY: “HEART ON MY SLEEVE”



The New York Times

The A.I. Race › | How It Began | Key Figures in the Field | One Year of ChatGPT | Regulating A.I. | Inside OpenAI's Crisis

An A.I. Hit of Fake ‘Drake’ and ‘The Weeknd’ Rattles the Music World

A track like “Heart on My Sleeve,” which went viral before being taken down by streaming services this week, may be a novelty for now. But the legal and creative questions it raises are here to stay.

Share full article | 209

Labels hope that fans will continue to prize the work of artists, including the real Drake, above that of A.I.-generated imitations. Adam Riding for The New York Times

By Joe Coscarelli

Published April 19, 2023 Updated April 24, 2023

On 4 April 2023, ”Heart on My Sleeve”, a song written and produced by TikTok user ghostwriter977, with deepfake AI-generated vocals made to sound like Canadian musicians Drake and The Weeknd, was self-released on TikTok, YouTube and various streaming platforms. It reached 15 million views on TikTok alone and 600,000 streams on Spotify.

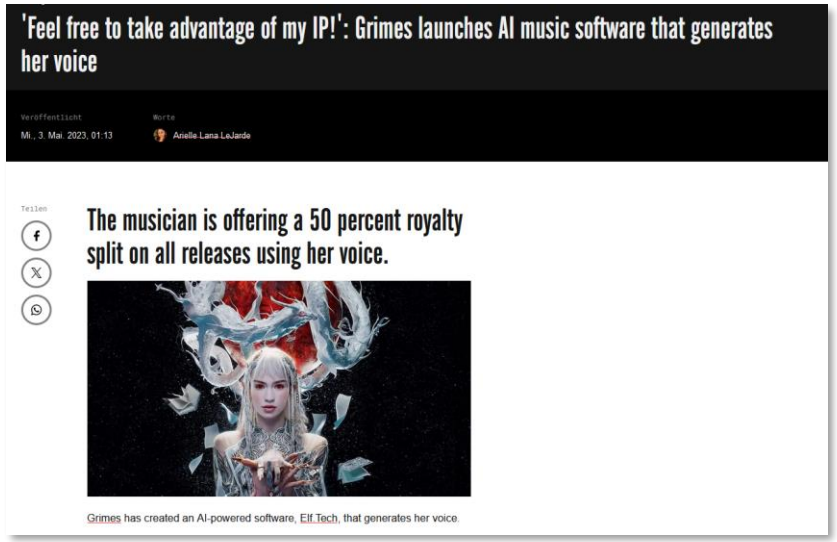
On 17 April it was taken down for ”infringing content created with generative AI” by Universal Music Group.

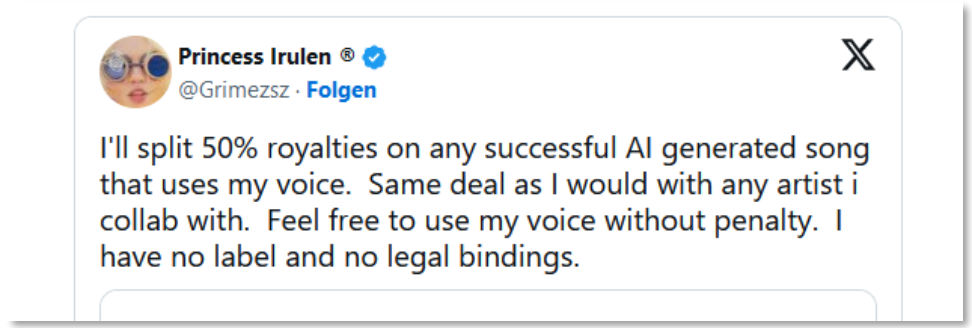
UMG told Billboard magazine that the viral postings ”demonstrate why platforms have a fundamental legal and ethical responsibility to prevent the use of their services in ways that harm artists”.

This viral case sparked public awareness and drew labels’ attention to the perils of deepfakes and voice cloning. Debates around responsibilities, copyright and artists‘ appreciation have since been a major concern for the music industry.

Source/Screenshot: Coscarelli (2023); Snapes (2023).

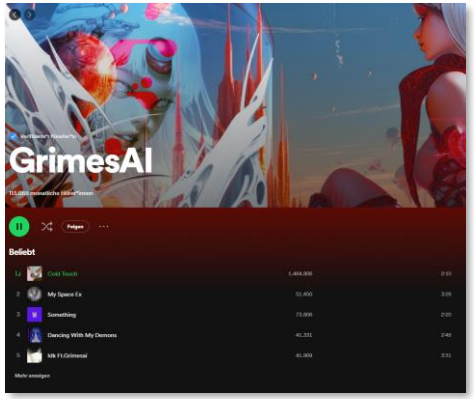
CASE STUDY: GRIMES





Electronic Pop star Grimes encourages her fans to create AI songs with her voice and announces that she would split the revenue for such a song 50/50. This is more or less the same deal as a collaboration with another "real" artist. She also wrote that everyone should feel free to use their voice without being penalised, as she has no label and no legal obligations to anyone. According to her, she likes the idea of merging with a machine, treating art like open source and deliberately eliminating copyrights.

With her tool Elf.Tech, users have the option of either uploading audio or recording directly through the app. They will then receive the output of the file with the pop star's voice instead. Grimes can be listed as a main, secondary or featured artist in any music made using the software in exchange for 50% of royalty splits on the master recording.
Elf.Tech offers distribution through its platform, but artists can also self-distribute or release through a label.

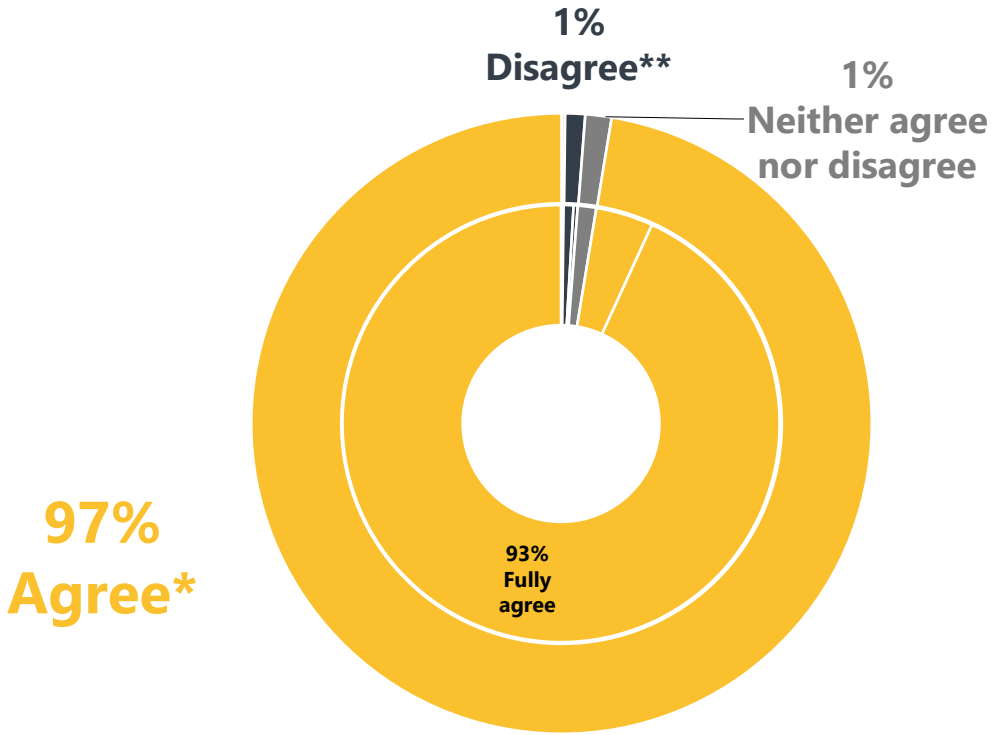


Source/Screenshots: LeJarde (2023); DIFFUS (2023); Pequeño IV (2023); Spotify.

PERSONAL RIGHTS OF COPYRIGHT HOLDERS

As seen in cases like "Heart on my Sleeve", infringement of personal rights (including music creators' moral rights or rights relating to a music creator's name, image and likeness) by AI systems poses an issue for music creators. Almost all the questioned APRA AMCOS members (97%) agree that copyright holders must have the possibility to take action against infringement of their personal rights by AI systems (e.g., deep-fakes or voice cloning).

Q: Copyright holders must have the possibility to take action against infringement of their personal rights by AI systems (e.g., deepfakes or voice cloning).



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,245. Basis: APRA AMCOS members. Rounding differences possible.
**Fully agree = 93%; Somewhat agree = 4%; **Fully disagree = 1%; Somewhat disagree = 1%. Difference to 100% = No answer.*


PHOTO SUPPLIED

PART 3: CHALLENGES

Overview

Copyright, Credit and Consent

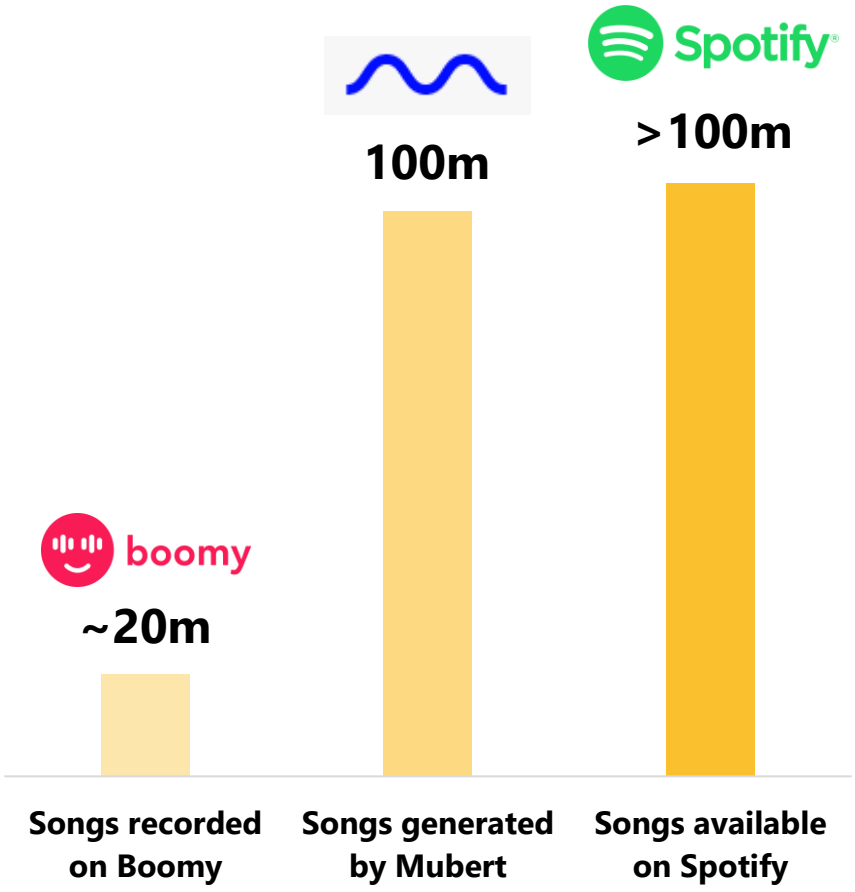
Remuneration and Economic Implications

Personal Rights

AI and Music Streaming

Outlook

AI-GENERATED MUSIC ALREADY ACCOUNTS FOR A SIGNIFICANT SHARE OF RECORDED MUSIC

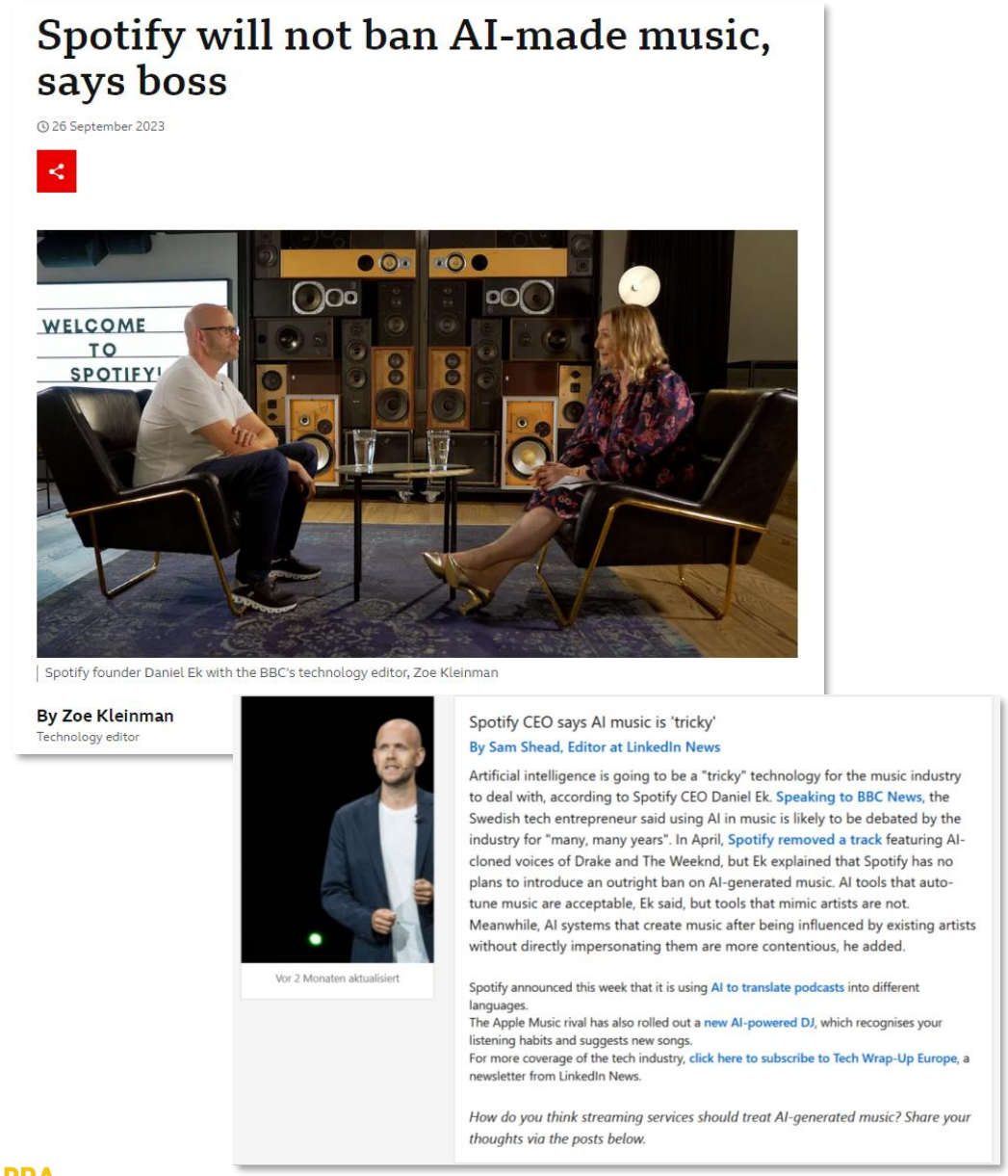


AI has without doubt accelerated the creation of music, but that speed comes at a time when music streaming services are already inundated with content.[1]

According to information on the Boomy website (July 2024), around 20 million songs have already been generated on the platform.[2] AI-generation platform Mubert announced in July 2023 that its AI has generated 100 million tracks.[3] This is roughly equal to the entire catalogue available on Spotify, which claims that listeners can "discover, manage, and enjoy over 100 million tracks" on Spotify.[4]

Deezer CIO Aurélien Hérault noted in a Goldmedia interview that the company had observed a year-on-year increase in the number of music pieces delivered to them over the past few years. This growth might have been correlated with the use of emerging technologies.[5]

Source: [1] Hoover (2023); [2] Boomy; [3] Spotify; [4] Music Business Worldwide; [5] Goldmedia (2024). m = million.



Spotify will not ban AI-made music, says boss

26 September 2023

Spotify founder Daniel Ek with the BBC's technology editor, Zoe Kleinman

By Zoe Kleinman
Technology editor

Spotify CEO says AI music is 'tricky'

By Sam Shead, Editor at LinkedIn News

Artificial intelligence is going to be a "tricky" technology for the music industry to deal with, according to Spotify CEO Daniel Ek. Speaking to BBC News, the Swedish tech entrepreneur said using AI in music is likely to be debated by the industry for "many, many years". In April, Spotify removed a track featuring AI-cloned voices of Drake and The Weeknd, but Ek explained that Spotify has no plans to introduce an outright ban on AI-generated music. AI tools that auto-tune music are acceptable, Ek said, but tools that mimic artists are not. Meanwhile, AI systems that create music after being influenced by existing artists without directly impersonating them are more contentious, he added.

Vor 2 Monaten aktualisiert

Spotify announced this week that it is using AI to translate podcasts into different languages.
The Apple Music rival has also rolled out a new AI-powered DJ, which recognises your listening habits and suggests new songs.
For more coverage of the tech industry, click here to subscribe to Tech Wrap-Up Europe, a newsletter from LinkedIn News.

How do you think streaming services should treat AI-generated music? Share your thoughts via the posts below.

DSPS' TREATMENT OF AI-GENERATED SONGS

When Universal Music Group banned the AI-generated song "Heart On My Sleeve" because of copyright infringement, Spotify had to take the song, which had already reached 20 million streams, down. In reaction to these events, Spotify's CEO Daniel Ek commented on the use of AI in the music world and especially on Spotify. In his opinion AI is going to be a "tricky" challenge the industry will be facing.[1] Still, he evaluates the use of AI in some areas to be helpful and has therefore no plans for banning AI-generated music completely.

This example shows that dealing with AI on streaming platforms is currently dependent on attitudes within those companies. This raises further questions about how streaming services should treat AI-generated music and who should be making such decisions.

Source/Screenshots: Kleinman (2023); Shead (2023).

"I also think we may begin to see the rise of 'hit song science' type tools and products: AI-generated tracks that analyse active or passive audience responses (reinforcement learning or optimization through human feedback), for example, to discover earworms, capture zeitgeist production styles, and the like. These will be imperfect (I don't believe algorithms will be any good at predicting hits), but they could be terribly disruptive to music cultures, such as in the corporate copycatting of emergent grassroots styles. Several established platforms like Spotify have essential data here because they can track listener behaviour—i.e., when someone skips a track or turns up the volume. But completely new platforms, including generative stream/'infinite album' type services and text-to-music generative AI tools, might exploit such user data even more overtly in new product designs."

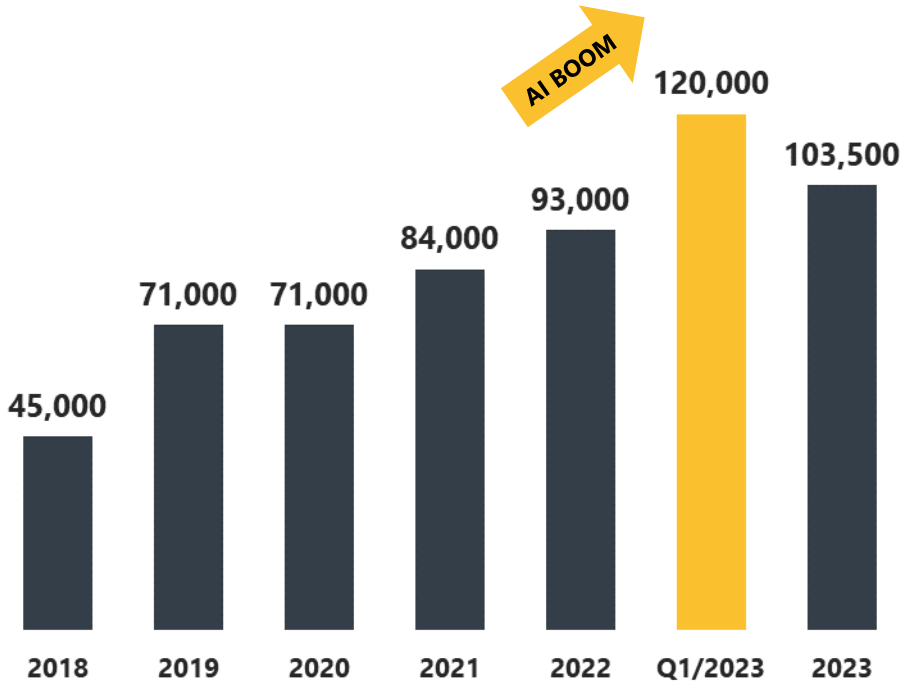
Oliver Bown

Academic, creative artist, programmer

Photo: Ryan Hernandez

THERE ARE VARIOUS CONCERNS ABOUT THE LARGE NUMBER OF NEW AI-GENERATED TRACKS

GLOBAL NUMBER OF NEW TRACKS UPLOADED TO DSPS EVERY DAY ON AVERAGE, 2018-2023



The number of new tracks that are uploaded reached a new peak in the first quarter of 2023, with 120,000 titles being uploaded to Digital Service Providers (DSPs) every day. After an upward surge in AI-produced songs in Q1, the figure has dropped slightly but has still stayed high.

Artists and experts interviewed for this study as well as music industry executives have become increasingly concerned about the large number of new tracks being uploaded to DSPs and worry that this deluge of new content could erode the presence of professional artists.

A widely expressed fear is that there will be a homogenisation of music, as similar recommendations are used by the AI models for all generated tracks. Prejudices and stereotypes in music are perpetuated by poorly trained AI models, which can lead to a narrowing of musical diversity.

Business leaders at some of the DSPs worry that low-quality content could damage the user experience. *"There's a lot of duplicated content, there's a lot of content that is not even music… and at a certain point you get way too much content that is useless for the users. And it starts creating a bad user experience."*

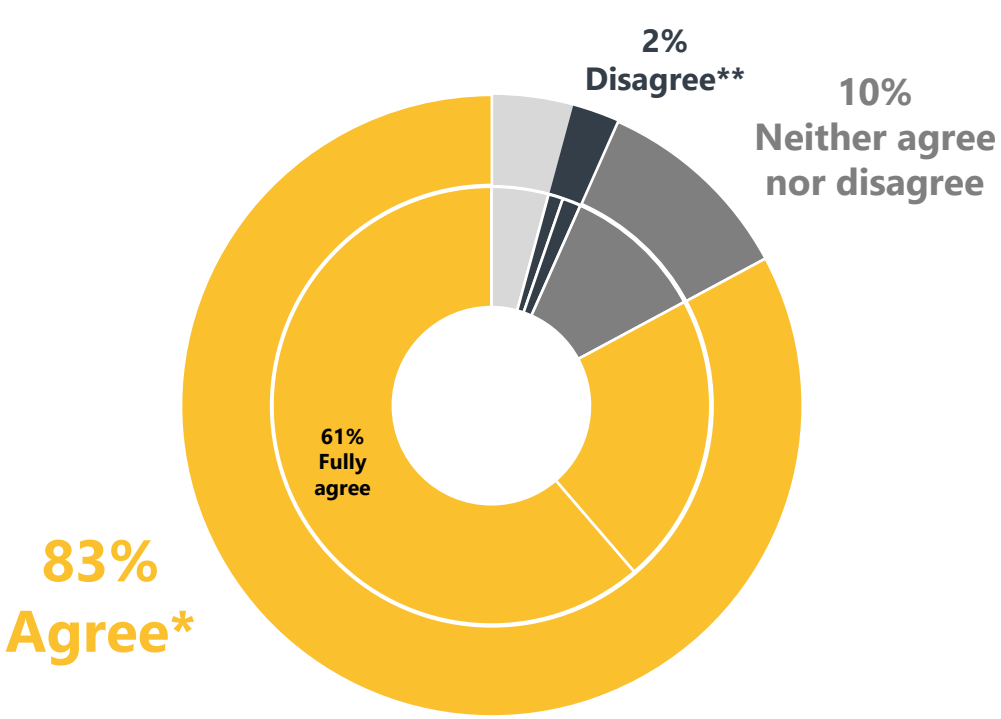
Deezer CEO Jeronimo Folgueira
during an earnings call on 1 March 2023

Source: Marconette (2023); Luminate Data (2024); Tencer (2023b).

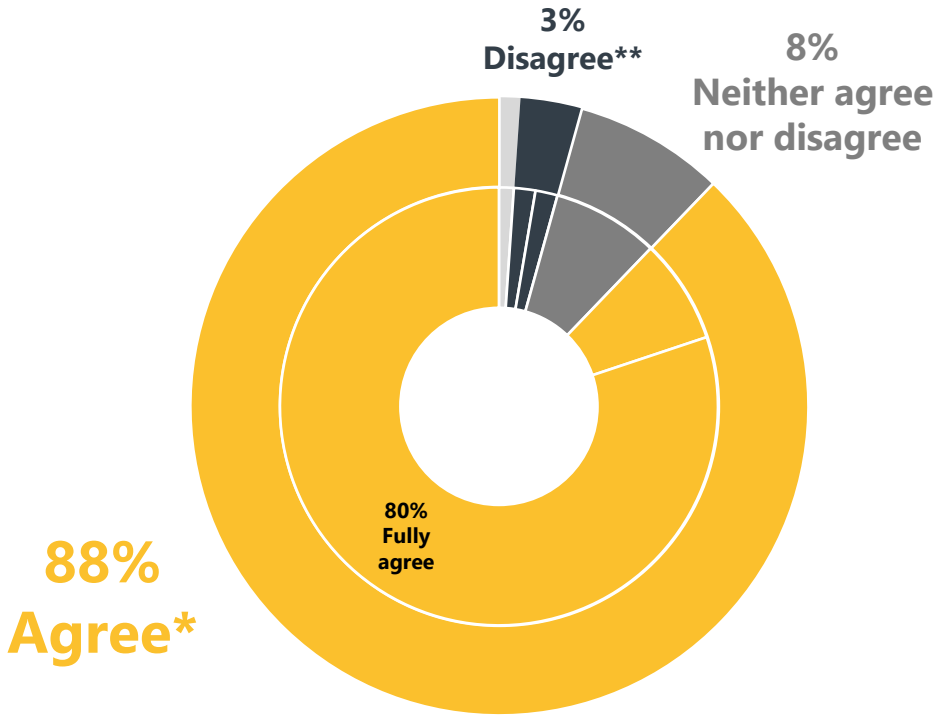
VISIBILITY ISSUES AND PROMOTION OF HUMAN-MADE MUSIC

Of the APRA AMCOS members who completed the survey, 83% agree that due to the increase in AI-generated works, issues around visibility and discoverability of songs on streaming platforms are becoming increasingly important. In an era where the number of real songs is being diluted by millions of published AI songs, support for human-made music on streaming platforms is vital to creators. 88% of respondents agree that music made by humans should be promoted on streaming platforms.

Q: Due to the increase in AI-generated works, issues of visibility and discoverability of songs on streaming platforms are becoming increasingly important.



Q: Music made by humans should be promoted ahead of AI-generated music on streaming platforms.



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,251 / 4,220. Basis: APRA AMCOS members. Rounding differences possible.
*Left / Right: *Fully agree = 61% / 80%; Somewhat agree = 22% / 8%; **Fully disagree = 1% / 2%; Somewhat disagree = 1% / 2%. Difference to 100% = No answer.*

"I think the greatest risk is eliminating the need for human interaction to create and produce music, which will dilute the music available for consumption. Especially in this age of mass-produced, flash-in-the-pan music, audiences may not bother searching deeper for music that they truly feel and relate to, and they may stop questioning what a song or piece of music actually means to them as the human element and emotion of those pieces become more and more opaque.

*"**There will always be a place for soul and emotion in music, and the songs that truly strike a chord with people will always cut through. It will just become more difficult to wade through the mud of formulaic music and rise out the other side, and this, I fear, will frighten more people from stepping into the mud at all.**"*

Dean Hanson

Guitarist, Ball Park Music

Photo: Dean Hanson

AI-DRIVEN RECOMMENDATION ENGINES

All major music streaming platforms have invested heavily in AI technologies to improve the user experience and secure competitive advantages.

One of the most important application areas are AI-supported analyses of the tastes and preferences of listeners and recommendation systems based on these. AI-driven recommendation engines have become an integral part of the music discovery process.

In April, Spotify added a new AI tool that can automatically compile a playlist based on user-entered text strings.
The company has launched a beta version of a feature it calls AI Playlist, available first to Spotify Premium subscribers in the U.K. and Australia. The new tool lets users "turn your most creative ideas into playlists," according to Spotify. Examples of AI Playlist prompts that Spotify listed include:

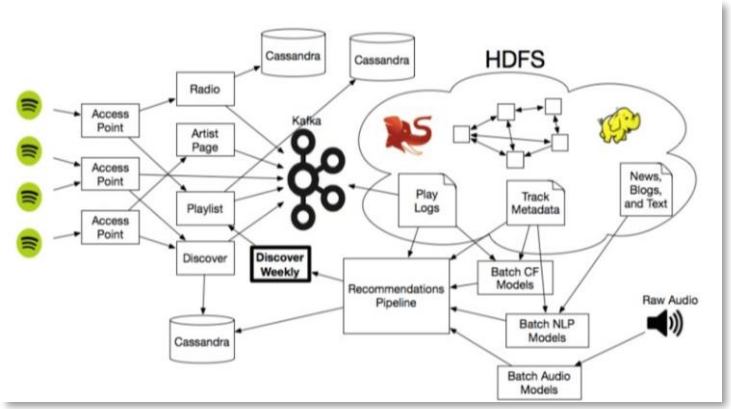
"An indie folk playlist to give my brain a big warm hug".[1]

Already back in 2017, Spotify bought the French AI start-up Niland and used it to develop the "Your Mix of the Week" playlist (Discover Weekly), among other services.

Three models are used for this:

- Collaborative filtering: An algorithm first analyses other playlists created by users that contain the same tracks that the listener in question plays. It then checks which other tracks other users have included in the same playlists.
- Natural Language Processing (NLP): Relevant text content (articles, blog posts, etc.) is scanned based on the metadata of a song. Artists and titles are then assigned keywords and weighted. Filtering and recommendations are therefore based on semantic information.
- Audio modelling: Convolutional Neural Networks (CNN): While NLP primarily recommends popular songs, audio models can also identify unknown songs that are similar to the songs already used in terms of sound. CNNs are based on parameters such as key, major/minor, beats per minute, volume and much more.

DATA FLOW FOR PERSONALISED SPOTIFY "MIX OF THE WEEK"



Source: Hovsepyan et al. (2021). [1] Spangler (2024).

"Streaming services can replace editorial playlists (they already are) with personalised algorithmic playlists, then introduce large amounts of AI-created music (e.g., 30%) that they produce 'in-house' and own into those playlists. As every algorithmic playlist would be individual, it would be close to impossible to tell the actual percentage of streaming service-owned AI music being delivered or to determine how they are tilting the field in their favor and directing plays to their own generated content.

*"**Without a legislated ability to independently monitor and audit their playlist data, and act accordingly where, for example, proprietary AI music is being added, it threatens the livelihoods of all artists and labels, exacerbating already significant economic chokepoints, and allowing them to further strong-arm reductions in fees or add additional 'premium service costs' to the detriment of the entire music industry. Those with the least negotiating power will be the first to suffer.**"*

Chris Chetland

Chair of the Music Producers Guild of Aotearoa/New Zealand

Photo supplied

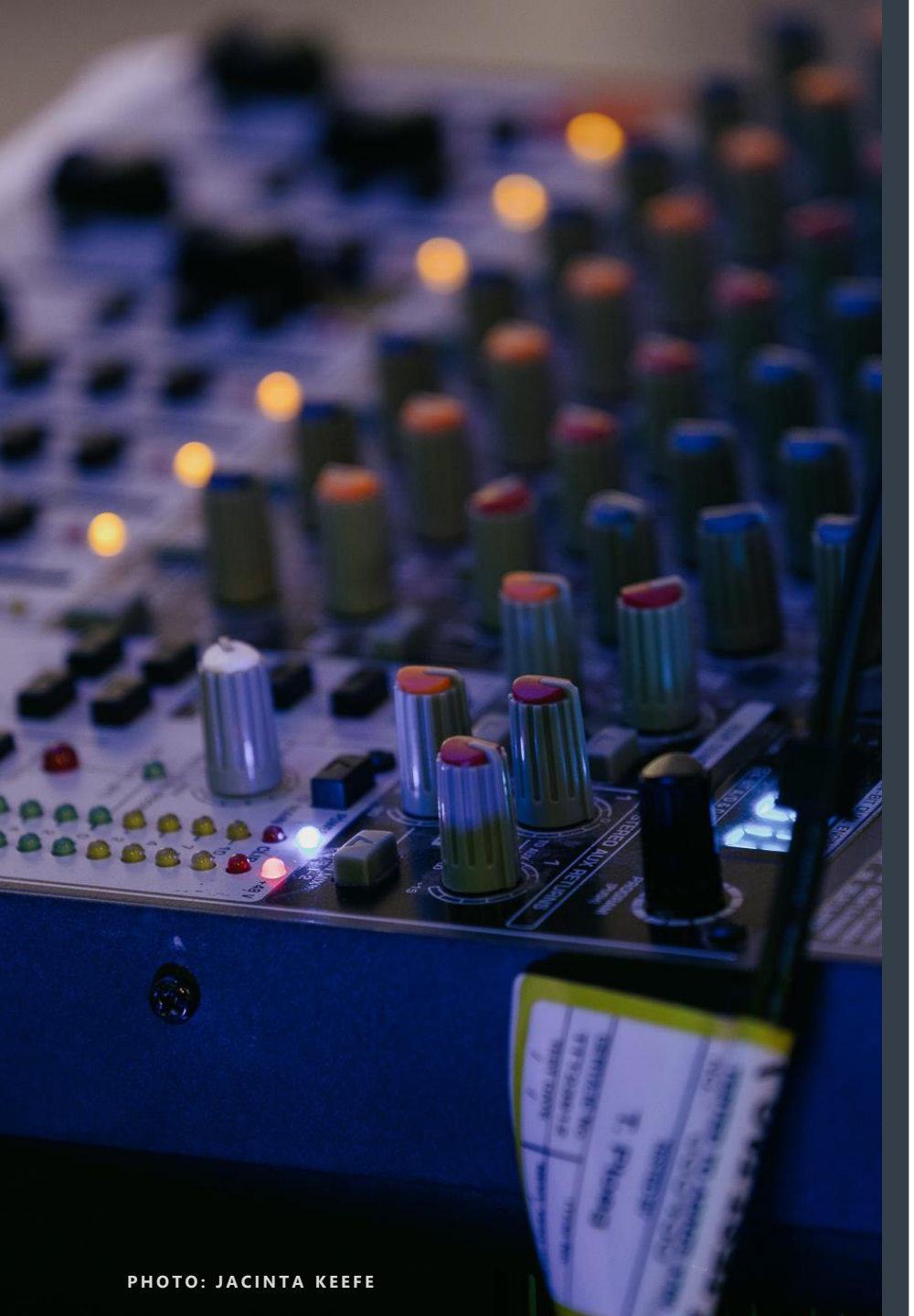


PHOTO: JACINTA KEEFE

PART 3: CHALLENGES

Overview

Copyright, Credit and Consent

Remuneration and Economic Implications

Personal Rights

AI and Music Streaming

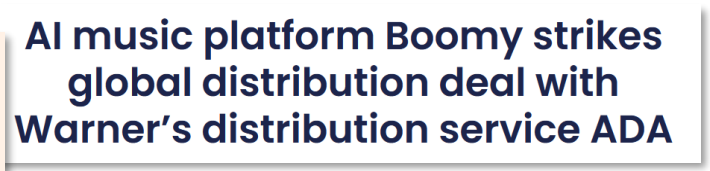
Outlook

THERE ARE NEW COLLABORATIONS COMING UP THAT MIGHT INFLUENCE MARKET CONSTELLATIONS

YouTube in talks with record labels over AI music deal

Licensing negotiations come as industry wrestles with legal and creative impact of artificial intelligence

YouTube wants to scale up its AI music project after a limited test of its 'Dream Track' tool last year
© Noam Galai/Getty Images for YouTube



AI music platform Boomy strikes global distribution deal with Warner's distribution service ADA

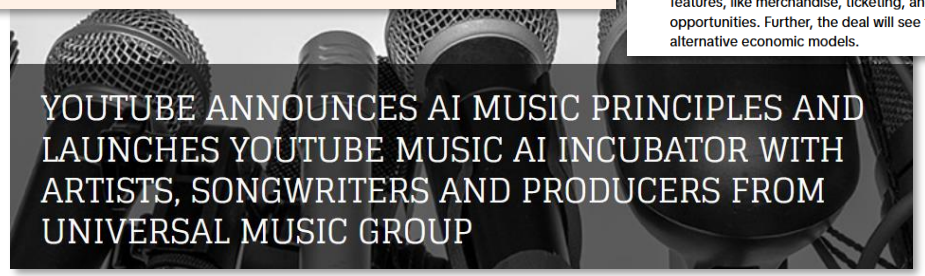
Warner Music Group & TikTok Announce First-of-its-Kind Expanded Agreement

Global deal creates new revenue, marketing and insights opportunities for artists and songwriters

Warner Music Group and TikTok today announced a wide-ranging, first-of-its-kind partnership that will benefit WMG's artists and songwriters, and TikTok's billion-plus users around the world. The multi-year, multi-product deal licenses the repertoire of Warner Recorded Music and Warner Chappell Music to TikTok, TikTok Music, CapCut, and TikTok's Commercial Music Library.

The deal will expand the level of partnership, collaboration, and innovation between the two companies. It will create new revenue, marketing, and insights opportunities for WMG's artists and songwriters, while deepening the engagement with TikTok's huge audience of passionate music fans.

As part of the deal, Warner Music Group and TikTok will find new ways to harness TikTok's revenue generation and promotional capabilities, as well as a wealth of insights. In addition, artists and songwriters will have access to new ways of working with TikTok's vibrant brand partners, as well as to new fandom development and monetization features, like merchandise, ticketing, and digital goods and services, among other opportunities. Further, the deal will see the joint development of additional and alternative economic models.



YOUTUBE ANNOUNCES AI MUSIC PRINCIPLES AND LAUNCHES YOUTUBE MUSIC AI INCUBATOR WITH ARTISTS, SONGWRITERS AND PRODUCERS FROM UNIVERSAL MUSIC GROUP

There are various new collaborations between music and other media companies and AI tech companies that might influence market constellations.

In August 2023, YouTube Music launched a so-called AI Incubator, initially kicking off with artists, songwriters and producers from Universal Music Group, including Anitta, Björn Ulvaeus, d4vd, Don Was, Juanes, Louis Bell, Max Richter, Rodney Jerkins, Rosanne Cash, Ryan Tedder, Yo Gotti, and the Estate of Frank Sinatra, amongst others and other partners from the music industry since then.

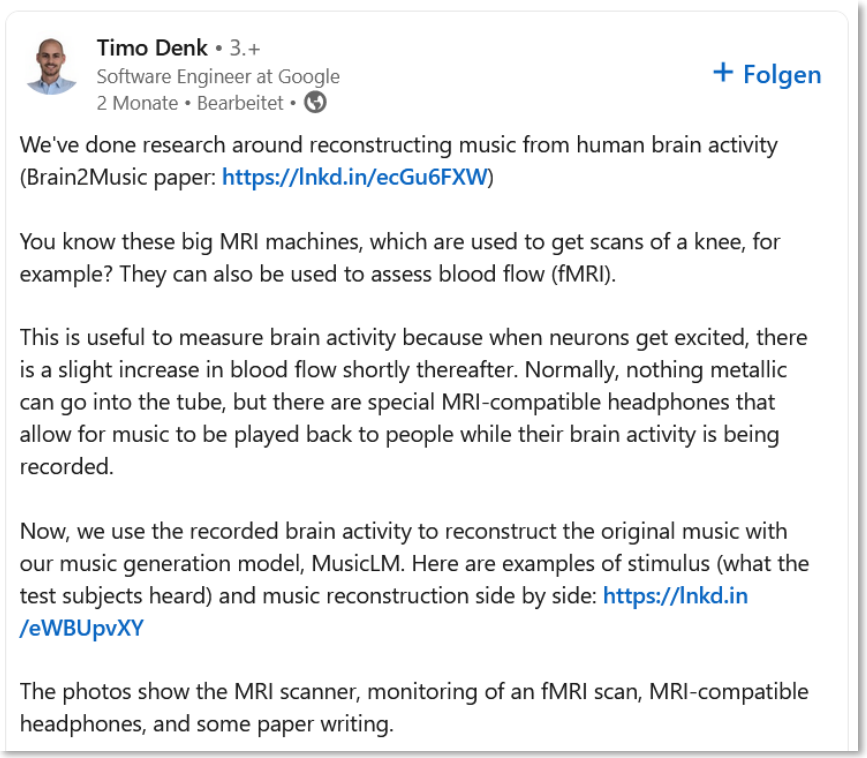
In this context, YouTube also publicised the platform's three "fundamental AI music principles [which] are rooted in its commitment to collaborate with the music industry alongside bold and responsible innovation in the space."[1]

YouTube is also in talks with record labels to license their songs for AI tools that clone popular artists' music, hoping to win over a sceptical industry with upfront payments. YouTube needs music content to legally train AI song generators, as it prepares to launch new tools this year, according to three people familiar with the matter.[2]

Source: [1] YouTube (2023); [2] Nicolaou (2024). Screenshots: Universal Music Group (2023); OpenAI (2023); TikTok (2023); Financial Times (2024).

TECH COMPANIES ARE ALREADY WORKING ON MUSIC GENERATION FROM BRAIN ACTIVITY

The fact that tech companies such as Google are now even working on processing brain activity into Gen AI models shows the speed at which development is progressing. This raises the question of whether regulation will even come close to keeping up with the rapid market development.



Timo Denk • 3.+
Software Engineer at Google
2 Monate • Bearbeitet •

+ Folgen

We've done research around reconstructing music from human brain activity (Brain2Music paper: https://lnkd.in/ecGu6FXW)

You know these big MRI machines, which are used to get scans of a knee, for example? They can also be used to assess blood flow (fMRI).

This is useful to measure brain activity because when neurons get excited, there is a slight increase in blood flow shortly thereafter. Normally, nothing metallic can go into the tube, but there are special MRI-compatible headphones that allow for music to be played back to people while their brain activity is being recorded.

Now, we use the recorded brain activity to reconstruct the original music with our music generation model, MusicLM. Here are examples of stimulus (what the test subjects heard) and music reconstruction side by side: https://lnkd.in/eWBUpvXY

The photos show the MRI scanner, monitoring of an fMRI scan, MRI-compatible headphones, and some paper writing.

Source/Screenshots: Timo Denk on LinkedIn; Denk et al. (2023).

"Music is fundamental to how we express ourselves, and how we connect with each other. If we let something "artificial" take it over – no matter how "intelligent" that machine is supposed to be – then we will lose part of what it means to be human."

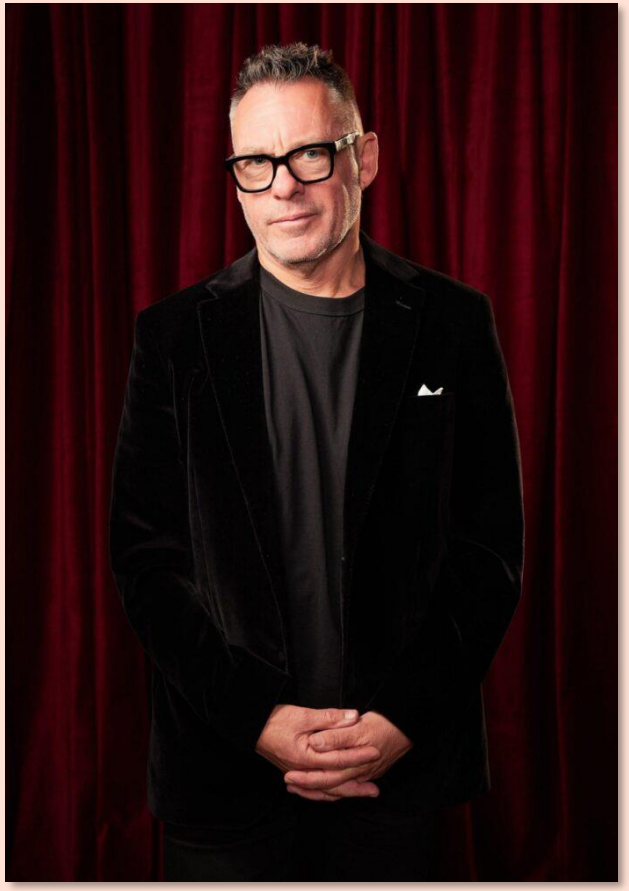
Jimmy Barnes

Singer/songwriter

Photo: Jesse Lizotte

PHOTO: JESS GLEESON

FIELDS OF ACTION



*"**There's no doubt that AI will put people out of work in some sectors of the industry. Unless we legislate now, companies and platforms who are profiting from the scraping of every recording ever made will not be held to any ethical standards, there will be no transparency around where the music that made up the AI soundtrack came from, no credits, and no compensation. AI has the ability to devalue the creative process of making music.** However, I think music thrives on human connection and authenticity – only time will tell how discerning people are, and how important those things are to them."*

Jonathan Zwartz

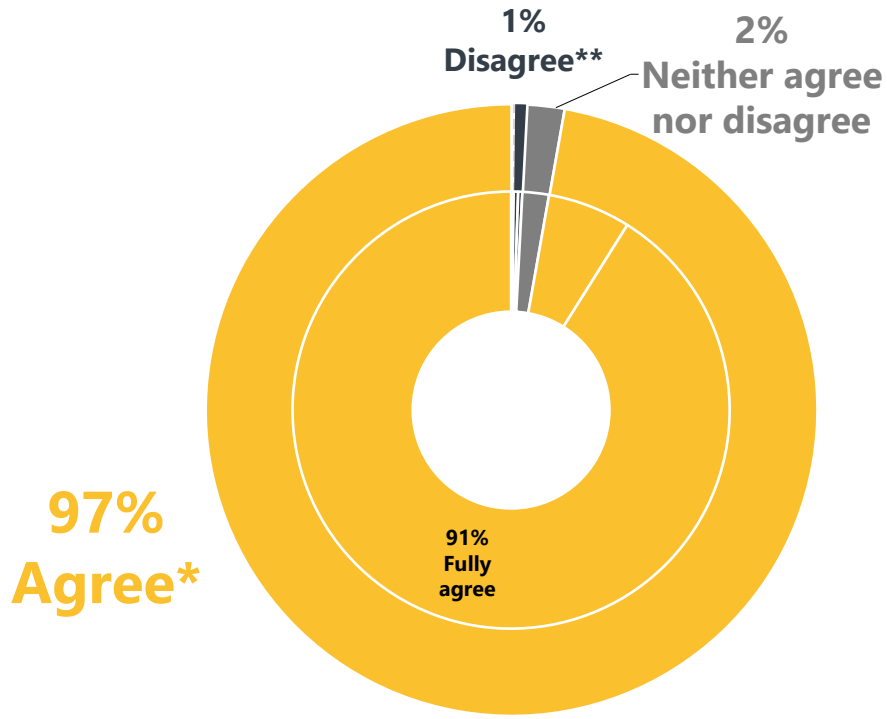
Composer and songwriter

Photo: Daniel Boud

POLITICAL IMPLICATIONS RELATED TO GEN AI

Of all surveyed music creators, **97% call for policymakers to pay more attention to the challenges related to AI and copyright**. Only 1% disagree with this, while 2% are neutral.

Q: Policymakers should pay more attention to the challenges related to AI and copyright.



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,234. Basis: APRA AMCOS members. Rounding differences possible.
**Fully agree = 91%; Somewhat agree = 6%; **Fully disagree = 0,3%; Somewhat disagree = 0,3%. Difference to 100% = No answer.*

"Like it or loathe it, AI is here to stay, so it's high time we got our heads around it... but how, exactly? It's a technology that could indeed offer unimaginable benefits to those willing to engage with it as a tool of collaboration and co-creation, however, as an original songwriter, my concerns remain legion. The level of forethought/legal frameworks required to protect the rights of creators have not had time to be put in place, and the pace at which it's developing makes me wonder, is that even going to be possible?"

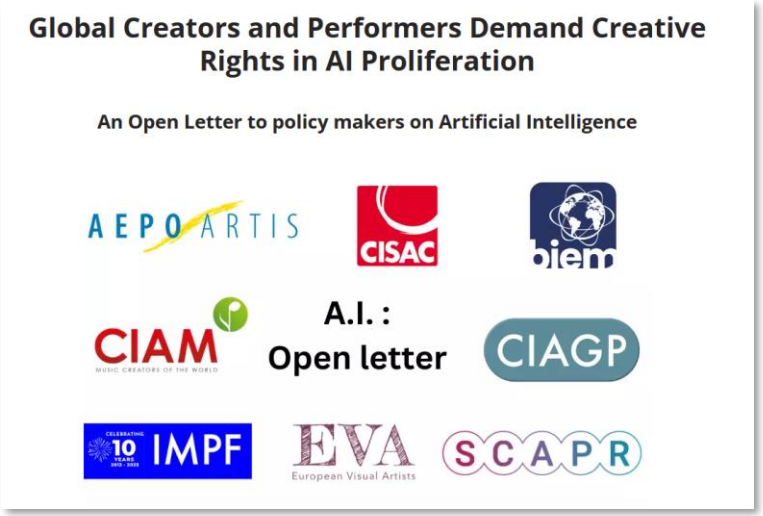
Clare Bowditch

Singer/songwriter

Photo: She Is Aphrodite (Michelle Pitiris)

SEVEN DEMANDS FROM MUSICIANS IN CONNECTION WITH AI

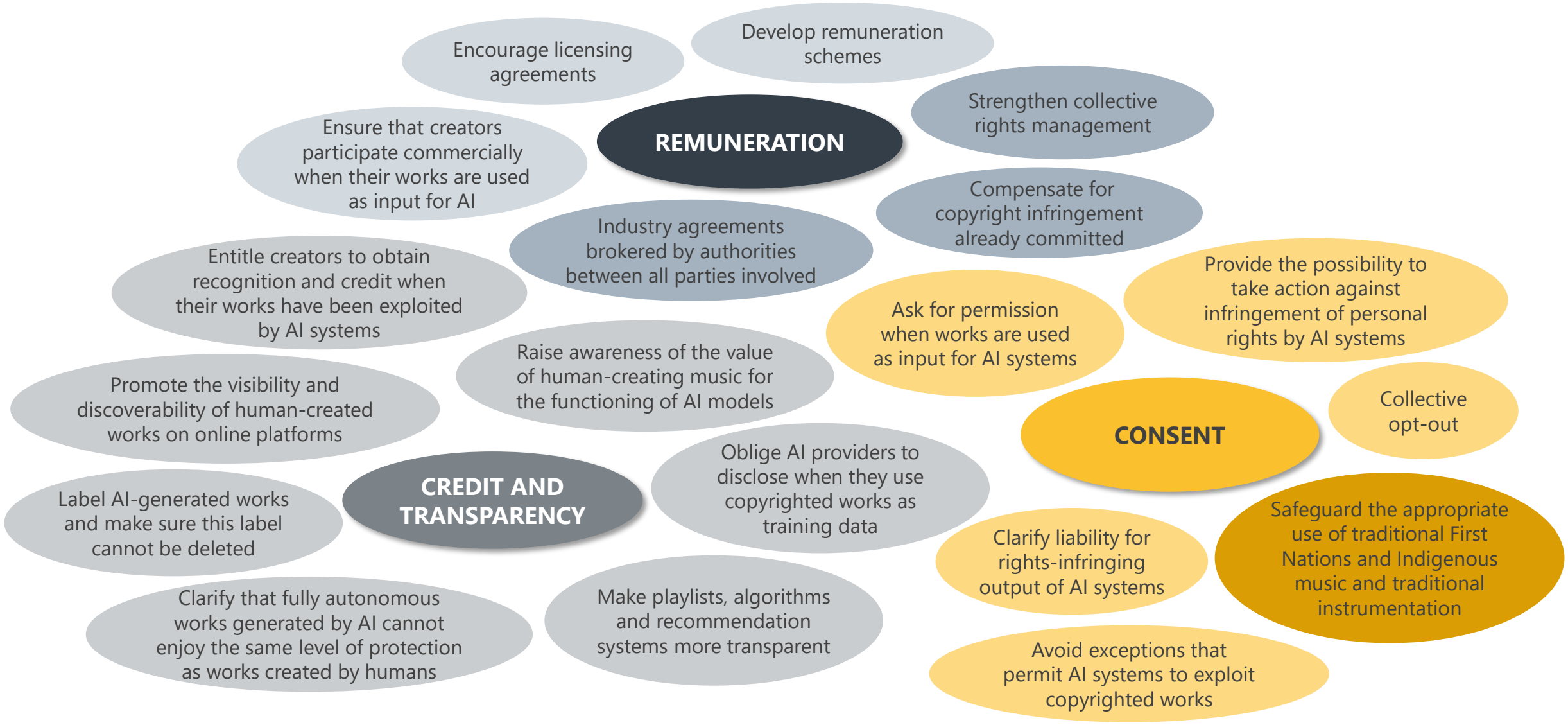
In July 2023, several international associations representing mainly authors, performers and collecting societies from the music sector,[1] published an open letter setting out seven principles that should guide legislators in the regulation of Gen AI.



1. AI systems analyse, scrape and exploit vast amounts of data, typically, without authorisation. **Creators' and performers' rights must be upheld and protected when exploited by AI systems.**
2. **Licensing solutions** should be available for all potential exploitation of copyright works, performances and data by AI systems.
3. AI systems are enabled to exploit copyrighted works through legal exceptions, e.g., for text and data mining. **Exceptions for text and data mining which do not provide for effective opt-out by rights holders should be avoided.**
4. If the work of authors and performers has been exploited by AI systems, this should be **mentioned by name with appropriate credits**.
5. **Transparency obligations should apply** for the use of creative works and performances by AI systems to ensure fairer AI practices.
6. **AI companies should be held liable** for activities and results that infringe the rights of authors.
7. AI models are merely a tool. **Policymakers must clarify that fully autonomous works generated by AI cannot enjoy the same level of protection as works created by humans.**

Source: CISAC (2023b). [1] Among them APMA, BIEM, CISAC and IMPF.

FIELDS OF ACTION FOR GEN AI IN MUSIC



Source: Goldmedia analysis.

"Music and art are entirely human endeavors. We express our wide range of experiences, moods, and emotions to grow, heal, and connect with one another, not only in the present moment but through time as well. For this reason, I fail to see the point of AI-created works apart from a thinly veiled effort by large corporate entities to hijack and automate the creative process for commercial gain.

*"**The greatest risk is not the AI itself but rather us as an audience. If we, en masse, continue to consume things superficially without giving presence to the work, then we risk accepting AI-generated art as the norm. I still think we will seek out music that connects with us emotionally, but we will seek it out from familiar bygone eras and artists. As a result, we'll risk losing a whole generation of storytellers, the people best suited to help us emotionally navigate our own time on this planet.**"*

Ben Woolner, SAFIA

Singer/songwriter

Photo: WILK

"AI will inevitably change the meaning and value of music. The value of some music will be decreased to virtually nothing while other music will be lifted to the status of a tulip in the Dutch Golden Age. AI gives us hope, but it won't matter until it can offer us solace and forgiveness. A photo of a lemon is not a 'lemon'; just as a song created by AI is not a 'song'."

Franc Tetaz

Composer and producer

Photo: Peter Turrman

PHOTO: JACINTA KEEFE

AI AND ABORIGINAL AND TORRES STRAIT ISLANDER MUSIC

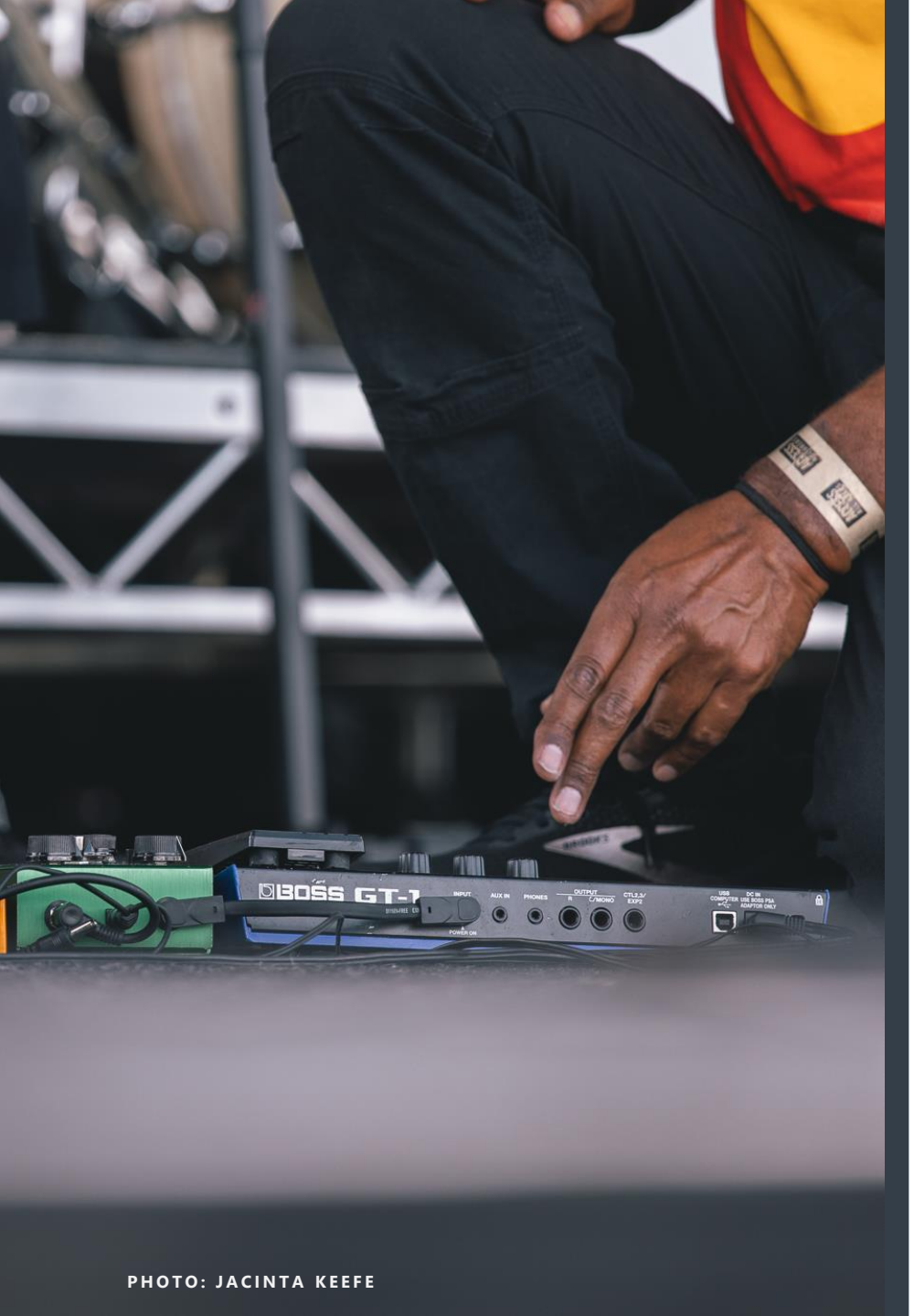


PHOTO: JACINTA KEEFE

"As the Director of the Aboriginal and Torres Strait Islander Music Office (NATSIMO), I present this survey of Aboriginal and Torres Strait Islander music creators. The NATSIMO is deeply committed to fostering self-determination for Aboriginal and Torres Strait Islander musicians, aiming to nurture a vibrant, self-determined Aboriginal and Torres Strait Island music industry. Our goals include working with Aboriginal and Torres Strait Islander members to better understand the value of their music and collectively advocate for music rights while promoting the sustainable growth of a self-determined Aboriginal and Torres Strait Islander music industry.

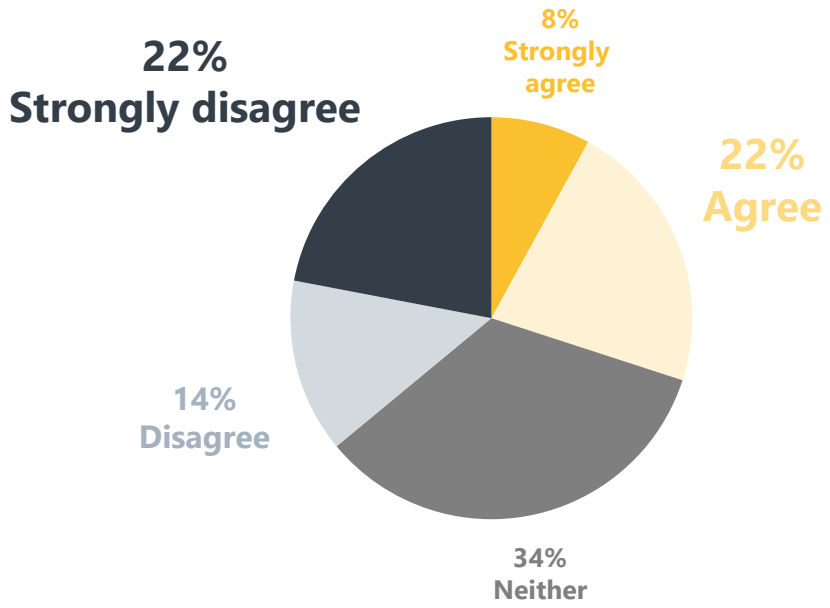
"The rise of AI technology poses significant threats to the cultural and economic wellbeing of all Indigenous communities. Due to the unique nature and cultural significance of Indigenous Cultural and Intellectual Property (ICIP), AI's effects on this vulnerable sector are profound. There are critical, unaddressed issues regarding AI's impact on Aboriginal and Torres Strait Island cultural creators in Australia. Government focus has addressed unauthorised use of ICIP in arts and crafts, particularly in mass-produced items. It is crucial that this focus urgently expands to encompass all fields of Aboriginal and Torres Strait Island cultural creation.

"Aboriginal and Torres Strait Island music creators often engage in multiple art forms, intertwining their music with visual arts, dance, crafts, ecology and politics, creating a rich cultural tapestry. Policy makers, in partnership with NATSIMO and Aboriginal and Torres Strait Island music creators, can ensure there is a comprehensive protection framework to support our diverse and interconnected creative expressions in the face of this significant technological change."

Leah Flanagan
Director, NATSIMO

WILL AI CREATE MORE OPPORTUNITIES FOR ABORIGINAL AND TORRES STRAIT ISLANDER MUSICIANS?

Q: Can AI create more opportunities for Aboriginal and Torres Strait Islander musicians and their communities within the music industry?



Respondents expressed concerns that AI could take opportunities away from Aboriginal and Torres Strait Islander people, leading to cultural appropriation and decontextualised data. They worry AI-produced art undermines traditional artworks, diverts revenue outside their communities, and devalues cultural heritage. AI might also disrupt physical and cultural connections, displace jobs, and undermine artists' originality.

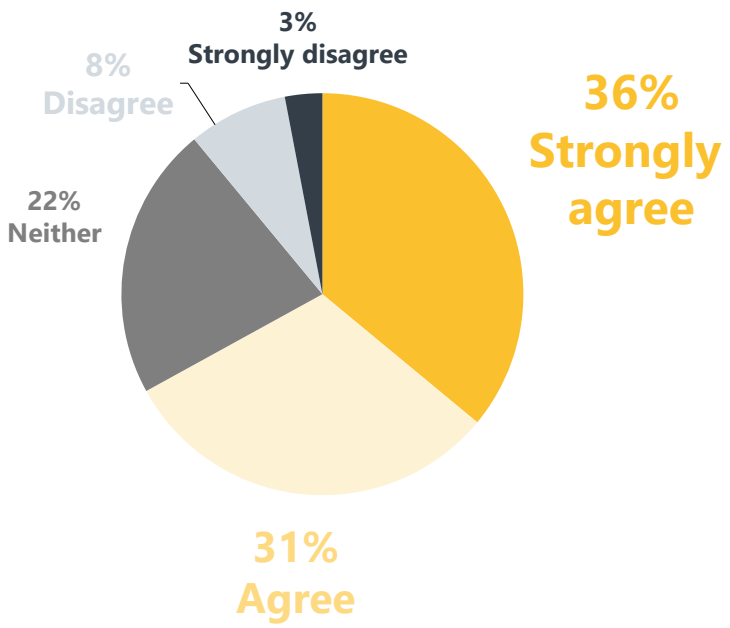
However, some believe AI could create opportunities in the music industry by automating tasks, enhancing creativity, and providing access to production tools. Many stressed the need for more AI education and that permission and consent for using cultural heritage should stay with Aboriginal and Torres Strait Islander people.

The results show a diverse range of opinions among respondents: 34% are neutral, 30% agree that AI can create opportunities for Aboriginal and Torres Strait Islander musicians and their communities within the music industry, and 36% disagree, with 22% disagreeing strongly.

Source: Goldmedia analysis based on a survey by NATSIMO for APRA AMCOS (2024), n=38. Basis: Aboriginal and Torres Strait Islander APRA AMCOS members.

IMPACT ON CULTURAL RIGHTS THROUGH THE USE OF AI

Q: Does using AI in music creation make it harder for Aboriginal and Torres Strait Islander artists to protect their cultural rights?



Respondents largely agree that AI complicates the protection of cultural rights for Aboriginal and Torres Strait Islander artists. They noted that AI often uses information without consent, making cultural content accessible to outsiders and leading to potential misuse. This lack of control over cultural information is seen as deeply disrespectful, hindering the ability to protect their Indigenous Cultural and Intellectual Property (ICIP).

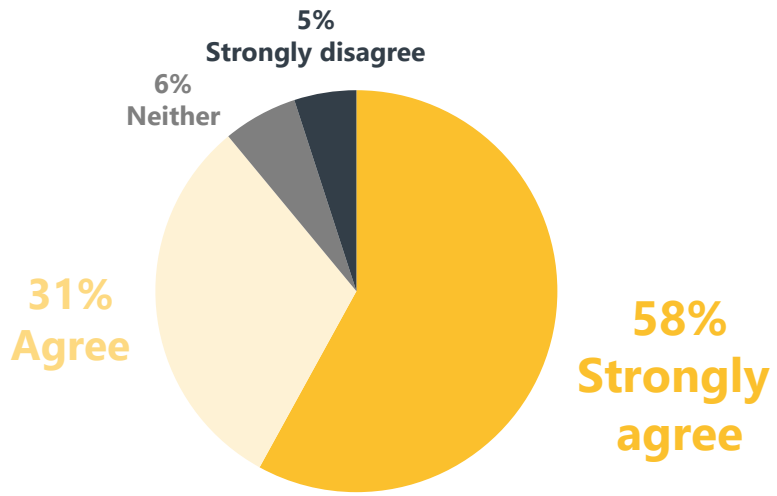
Concerns were raised that the public might not distinguish between authentic cultural works and AI-generated content, resulting in a loss of cultural depth and meaning. The absence of safeguards could lead to violations of cultural protocols and financial losses for knowledge custodians. AI-generated art could devalue culture and create confusion about copyright, stripping away the passion inherent in Indigenous music.

However, some believe AI can foster connections between Aboriginal and Torres Strait Islander artists and other communities. One respondent emphasized that First Nations people should decide how to use AI, allowing them to control its impact on their communities.

Source: Goldmedia analysis based on a survey by NATSIMO for APRA AMCOS (2024), n=38. Basis: Aboriginal and Torres Strait Islander APRA AMCOS members.

CULTURAL APPROPRIATION THROUGH THE USE OF AI?

Q: Could the use of AI lead to cultural appropriation and/or misuse of Aboriginal and Torres Strait Islander properties?



Respondents largely believe AI leads to cultural appropriation and misuse of Aboriginal and Torres Strait Islander cultural properties. They noted that tech companies and users often show little respect for Indigenous people, with AI sharing information without considering consent or cultural protocols. This mass information mining makes appropriation likely, and even well-intentioned supporters may endorse offensive or incorrect content, leading to cultural misunderstandings and harming traditional music.

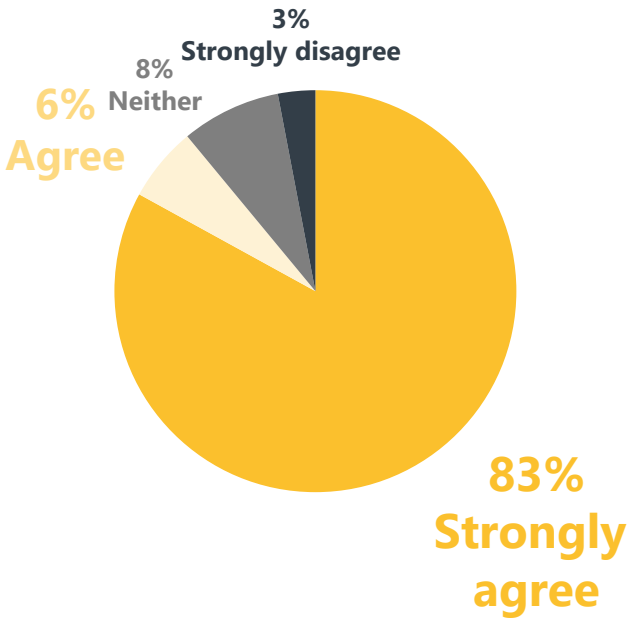
However, some respondents see AI as beneficial if used by Indigenous people for specific purposes, like creating projects and sharing stories. They stressed that AI itself isn't the problem, but its misuse can be. One respondent noted AI-generated lyrics often fail to convey the intended message.

Several respondents emphasized that the impact of AI depends on who uses the cultural information and how. With AI misuse already occurring, they suggested artists learn to use AI to gain control and called for standards and regulations to limit misuse and appropriation.

Source: Goldmedia analysis based on a survey by NATSIMO for APRA AMCOS (2024), n=38. Basis: Aboriginal and Torres Strait Islander APRA AMCOS members.

AI COPYRIGHT VIOLATIONS

Q: How important is it for the Guardians or Owners of Indigenous Cultural and Intellectual Property (ICIP) to be able to handle copyrights violations by AI?



Respondents emphasised the critical need for Guardians or Owners of ICIP to manage AI copyright violations, stating that control is essential for communities to protect their identity. They called for protection measures led by Aboriginal and Torres Strait Islander people.

Several solutions were proposed, such as processes allowing Guardians to remove their content from AI platforms. The challenge of identifying rightful Owners for new AI-generated works using ICIP was noted. Respondents stressed that decisions on cultural issues in AI should involve consultation with Elders, but identifying appropriate ICIP Owners is often complex and conflicted.

There is a pressing need for legal support and investment, as these communities often lack resources to tackle these issues. Some respondents highlighted the difficulty in holding ICIP violators accountable. AI systems could be programmed to avoid using ICIP, but legal frameworks are necessary for addressing violations.

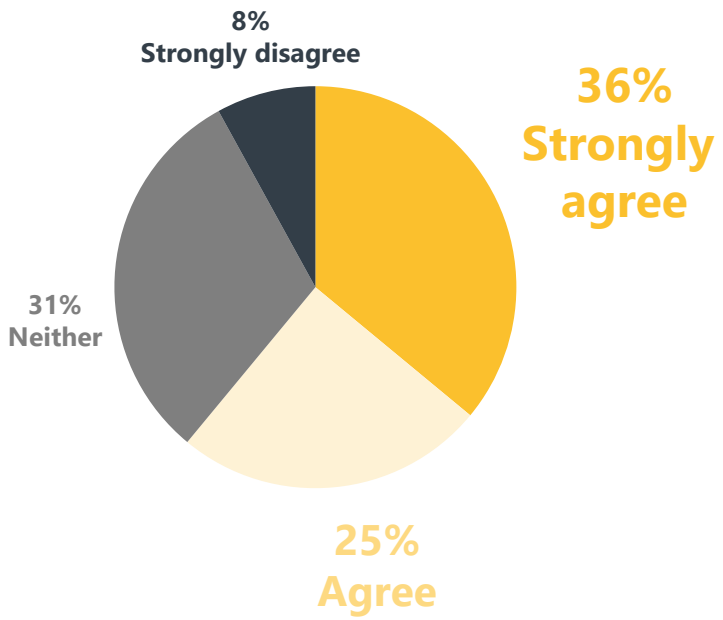
Most respondents believe Aboriginal and Torres Strait Islander people must enforce proper AI protocols, with legitimate community authority figures recognised as leaders, not external representatives.

APRA AMCOS

Source: Goldmedia analysis based on a survey by NATSIMO for APRA AMCOS (2024), n=38. Basis: Aboriginal and Torres Strait Islander APRA AMCOS members.

CAN THE USE OF AI LEAD TO ILL-INFORMED DECISIONS?

Q: Do you think the use of AI technology affects the ability for Aboriginal and Torres Strait Islander music creators and their communities to make well-informed decisions?



Respondents believe AI can significantly impact the ability of Aboriginal and Torres Strait Islander people to manage and protect their cultural content. Limited access to technology and the internet in certain regions could hinder these communities' decision-making abilities.

However, some respondents see AI as having the potential to benefit these communities without compromising their autonomy. AI can provide artists with tools to enhance their creative and business outputs, and some believe Aboriginal and Torres Strait Islander people have sufficient access to AI and should actively learn more about it. Additionally, AI could improve knowledge about cultural content and legal advice. One respondent noted that isolation and limited access to technology in certain areas could protect ICIP by preventing AI interference.

While some refrained from commenting due to a lack of knowledge about AI, perspectives varied based on age. Older generations might avoid AI, whereas younger individuals may embrace it. Additionally, one respondent chose not to comment due to a lack of direct experience with these communities.

Source: Goldmedia analysis based on a survey by NATSIMO for APRA AMCOS (2024), n=38. Basis: Aboriginal and Torres Strait Islander APRA AMCOS members.

"As music production software uses more AI it makes production elements like music theory and sound design more accessible and intuitive, so it potentially becomes more accessible to create music and beats for First Nations artists. But also, as a flip side, it could be potentially easier to use AI to fake and mimic traditional First Nations sounds and musicality in production instead of using and paying a living person to do a manual recording.

*"**It would be easy for people who are looking for a quick and cost effective First Nations sound element to create an atmosphere to use AI. Using AI in that application would effectively take the soul/spirit/human/lived experience/ history out of the sounds, and then no one is entitled to rights and it's not attributed to a culture, but it still creates a musical product with a certain feel. From my perspective, it seems like protecting ICIP is already difficult, and rampant black cladding is already used in arts and commerce without persecution, so I am concerned about how individuals and commercial entities could use AI to undermine and capitalise on First Nations culture.**"*

Michelle Levings aka GLVES

Singer/songwriter

Photo: Dane Hansen

METHODOLOGY

The purpose of this survey was to engage and consult with the Aboriginal and/or Torres Strait Islander membership to assess their understanding of AI within the communities and to identify potential impacts, key needs, and desired outcomes regarding the control of their cultural heritage content and ICIP within the AI space.

The survey, **titled "NATSIMO Your Opinion is Important: Take the Survey to Help Us Understand How Artificial Intelligence Could Impact Indigenous Culture in Music,"** was open from **12 June to 30 June 2024**. It received a total of **38 responses**. The youngest participant was **15 years old**, and the oldest was **91 years old**, with most responses coming from members within the **30–44-year-old** age bracket.

The survey was distributed via newsletter and text messaging, and responses were collected online using Survey Monkey.

It consisted of five questions with two response options:

- Mandatory Response Option One:
  Survey participants could respond by choosing between 'Strongly Disagree', 'Disagree', 'Neither Agree nor Disagree', 'Agree' and 'Strongly Agree'.
- Response Option Two:
  Optional written response allowing respondents to provide justifications or extra information to inform their decision.

Photo: Jacinta Keefe

PHOTO: AMANDA RATCLIFFE

AI AND MĀORI MUSIC

PHOTO: AMANDA RADCLIFFE

"As a kaitiaki (or guardian) of information for a musical heritage, APRA AMCOS is committed to nurturing kaitito Māori (songwriters), supporting the creation of new compositions and promoting waiata reo Māori on both national and international stages. We recognise the opportunities that technology provides our songwriters and composers as well as the risks, particularly when talking about generative AI and cultural appropriation.

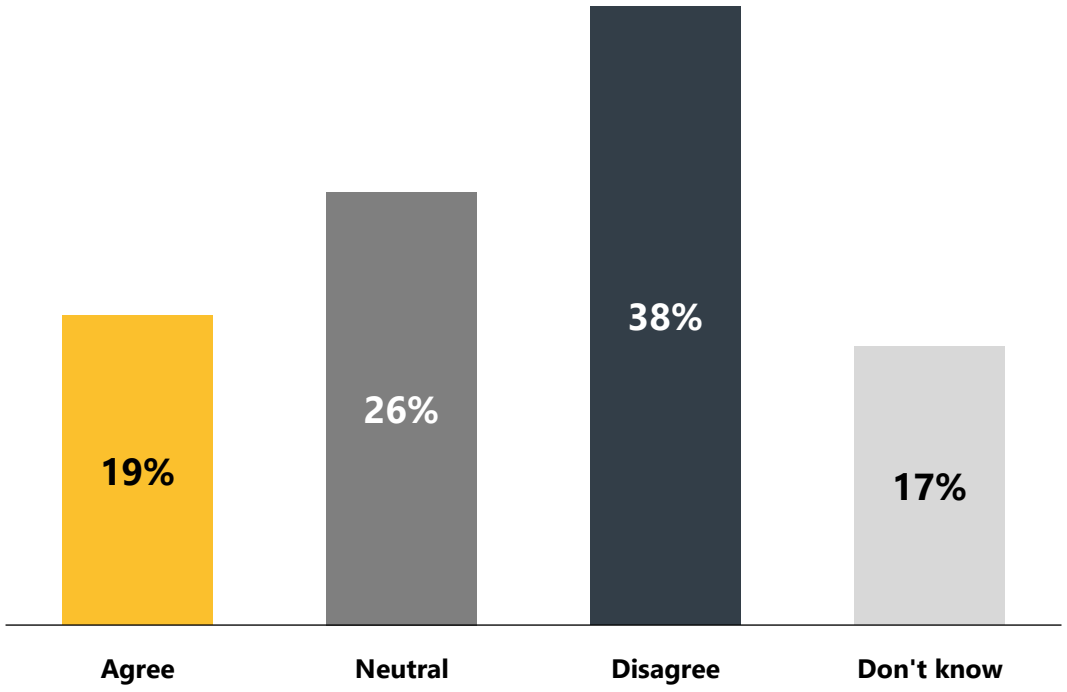
"The use of AI technology must respect cultural integrity and uphold basic principles of consent, credit and fairness. In regard to toi Māori (the arts), Māori want to be involved in AI development and ensure that AI systems support and enhance their creativity while protecting indigenous cultural heritage."

Dame Hinewehi Mohi DNZM

Manukura Puoro Māori/Director of Māori Membership

WILL AI CREATE MORE OPPORTUNITIES FOR MĀORI MUSICIANS?

Q: AI will create more opportunities for Māori musicians.



AI could have particular implications for Māori musicians. While it may provide more opportunities for some Māori musicians, it also raises ethical and cultural considerations in terms of reflecting Māori perspectives and respecting cultural values. In particular, AI's historical reliance on limited data may overlook the nuances of Māori waiata (songs) and tikanga (protocols), raising issues of cultural appropriation.

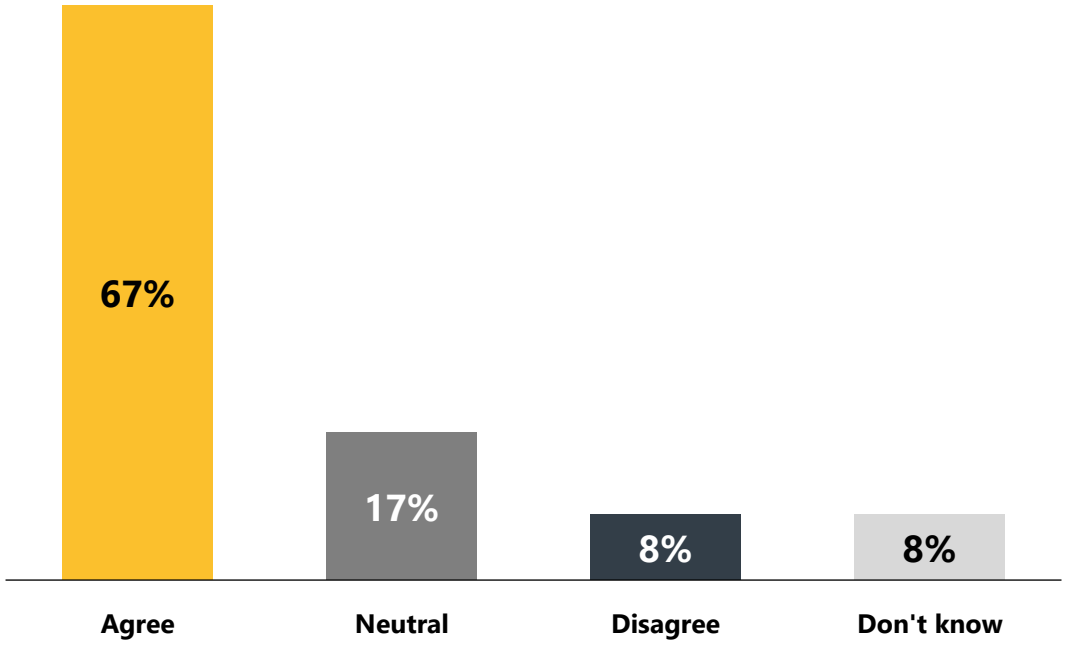
The majority of Māori musicians responding to this survey did not feel that AI would create more opportunities for them, and want provisions made for the use of AI technology to respect the cultural integrity and uphold the principles of consent and fair representation. They want to be involved in AI development and ensure that AI systems support and enhance their creativity while protecting their cultural heritage.

"In a business sense AI may have the capacity to streamline work processes. However, from an artistic and cultural perspective I'm concerned about the protection of our cultural materials and IP which has already been under threat without these technologies."[1]

Source: Goldmedia analysis based on survey by APRA AMCOS (2024), n=53. Basis: Māori APRA AMCOS members. [1] Survey respondent.

AI USE IN MUSIC CREATION AND MĀORI CULTURAL RIGHTS

Q: AI use in music creation will make it difficult of Māori musicians to protect their cultural rights (e.g., use of taongo puoro, use of traditional waiata, etc.).



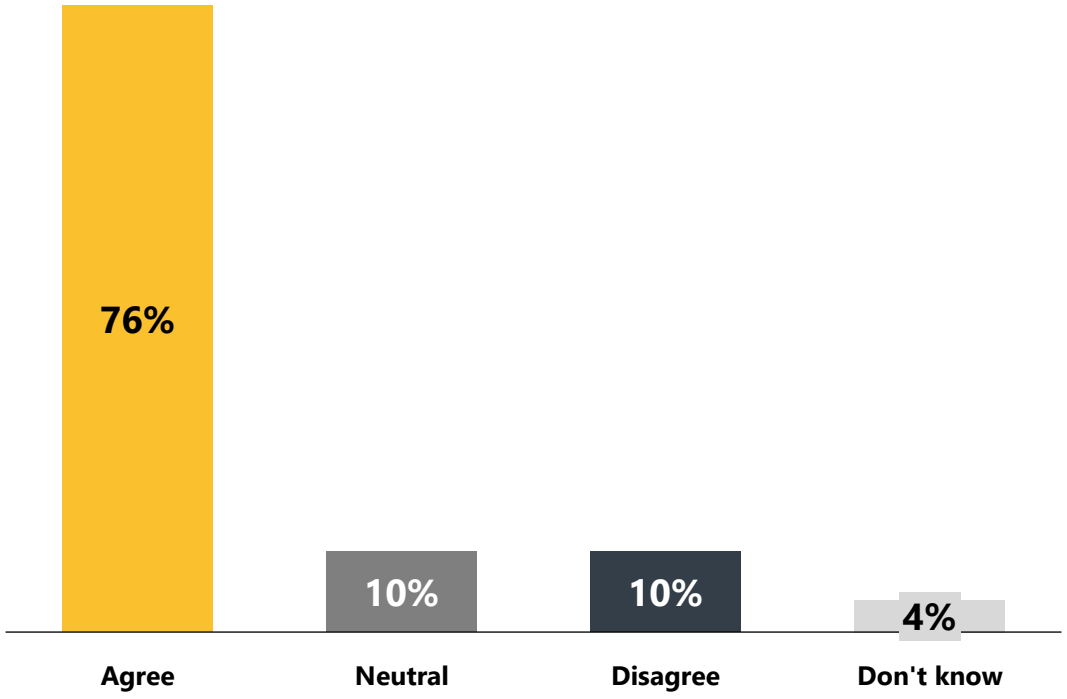
The majority of Māori members express significant concerns in the survey about AI and use of limited data for traditional music. 67% of them agree that AI will pose challenges to the protection of Māori cultural integrity. According to them, maintaining control over the legacy of sounds is critical, especially with taonga puoro (traditional instruments) used in AI-generated music. It requires the consent of Māori musicians to protect the authenticity of taonga puoro and prevent cultural appropriation.

"Engaging authentically with Māori takes time... AI removes this step, which makes it desirable in the commercial space, but it removes the strength of whakawhanaungatanga that Māori musicians bring to the arts sector as a whole."[1]

Source: Goldmedia analysis based on survey by APRA AMCOS (2024), n=52. Basis: Māori APRA AMCOS members. [1] Survey respondent.

CULTURAL APPROPRIATION THROUGH THE USE OF AI?

Q: The use of AI will lead to cultural appropriation and/or misuse of taonga puoro.



Māori members also hold a clear stance on the potential for AI to lead to cultural appropriation and/or misuse of taonga puoro: 76% agree that this is a possibility.

There are different perspectives that highlight the challenges and considerations around the impact of AI on maintaining the cultural integrity of Māori musical traditions and taonga puoro. Respondents emphasised the importance of appropriate research of material. According to them, a lack of accessible data for Māori music within AI applications can lead to inappropriate use without the necessary safeguards in place.

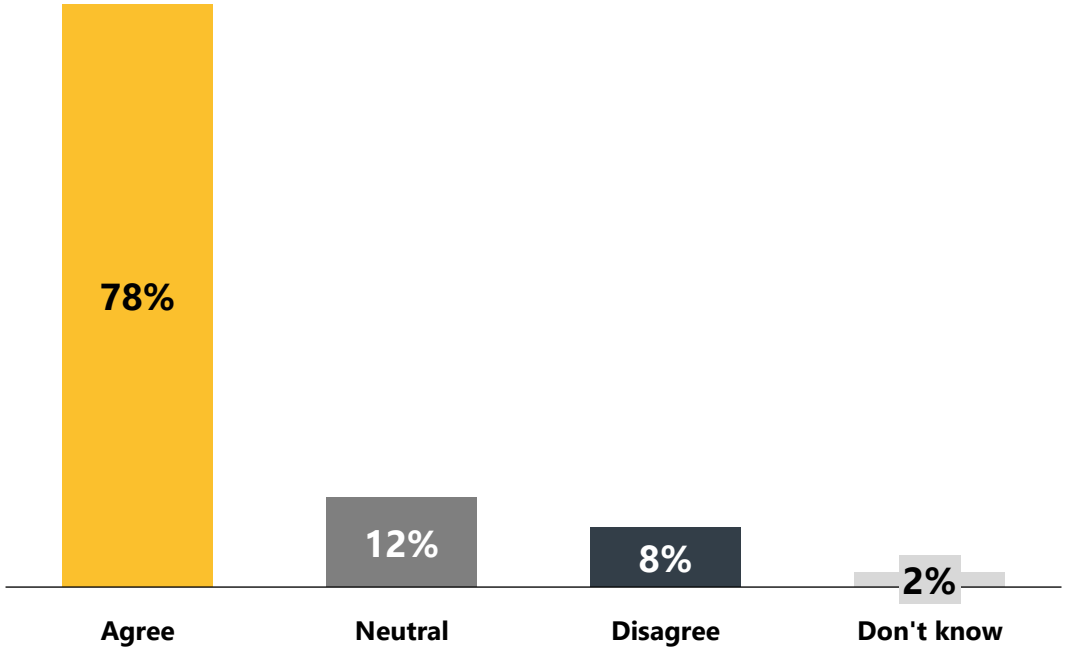
"We are already hearing our instruments in AI music, but what is the whakapapa of those sounds? We don't know what data has been used to create them. If we could control the whakapapa, it may be different. But if we can't? We, and people who are using AI outside of our community, are making uninformed decisions that are culturally and spiritually unsafe. We are [also] seeing a lot of 'pasifika soup' or even 'indigenous soup'; where AI creates sounds with a wider pool of data using other related idioms or music traditions to find those sounds. But who gave the permission for the creation of this whakapapa? To create whakapapa, consent is crucial. Without consent, rarurarau eventually finds its way out into the open."[1]

Source: Goldmedia analysis based on survey by APRA AMCOS (2024), n=51. Basis: Māori APRA AMCOS members. [1] Survey respondent.

AI COPYRIGHT VIOLATIONS

78% of Māori members surveyed agree that it's important to deal with AI copyright infringement, for the use of taonga puoro and traditional waiata, in their own way. Members' perspectives highlight the intersection of technology, cultural heritage and legal frameworks, and the need for specific approaches in the context of Māori rights in the use of AI in music. Participants point to the need for government-level regulations and intervention to ensure the appropriate use of Māori music globally, particularly in the case of AI companies. They stress that waiata should not be subjected to AI technologies without the necessary cultural considerations and permissions.

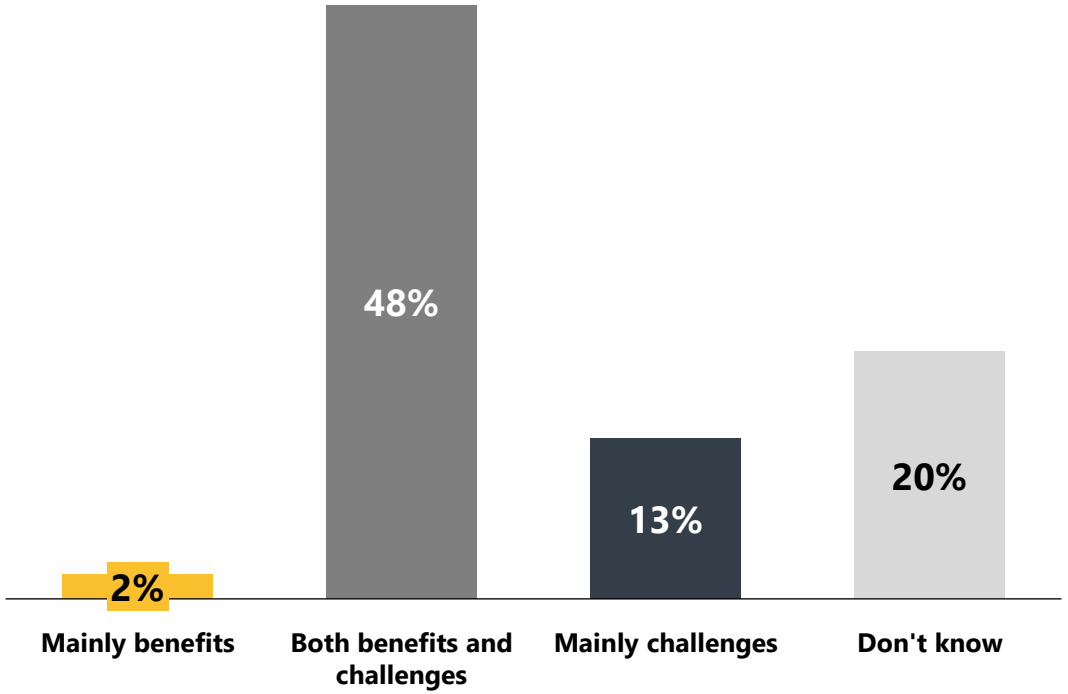
Q: It is important for Māori to be able to handle AI copyright violations in their own way (e.g., for use of taonga puoro, use of traditional waiata, etc.).



Source: Goldmedia analysis based on survey by APRA AMCOS (2024), n=50. Basis: Māori APRA AMCOS members.

CHALLENGES AND BENEFITS OF USING AI

Q: Can you see any future challenges or benefits for Māori musicians that would occur from the use of AI?



In terms of the future challenges and benefits of using AI, almost half of Māori members surveyed (48%) see both benefits and challenges. 13% of them see mainly challenges, while 2% see mainly benefits.

Some participants expressed concern that AI could lead to Māori musicians losing control of cultural protections of their artistic direction. Another challenge may be the potential barriers to inclusion. Some also mention the preservation of indigenous taonga (treasures) as a problem.

"AI models are trained from easily available information. The information that is most available to train from, has been historically narrow minded toward Māori, and conditional on external political motivations."[1]

Source: Goldmedia analysis based on survey by APRA AMCOS (2024), n=51. Basis: Māori APRA AMCOS members. [1] Survey respondent.

METHODOLOGY

The purpose of this survey was to engage and consult with the Māori membership to assess their understanding of AI within our communities and to identify potential impacts, key needs, and desired outcomes regarding the control of their cultural heritage within the AI space.

The survey, titled **"Māori Membership AI Survey: AI and Māori Music"** was open from **13 June to 30 June 2024**.
It received a total of **53 responses**.

The survey was distributed via newsletter and social media, and responses were collected online using Survey Monkey.

It consisted of five questions with two response options:

- Mandatory Response Option One:
  Survey participants could respond by choosing between 'Agree', 'Neutral', 'Disagree', 'Don't Know'.
- Response Option Two:
  Optional written response allowing respondents to provide justifications or extra information to inform their decision.

Photo: Amanda Ratcliffe

PHOTO: ABRAM RASMUSSEN

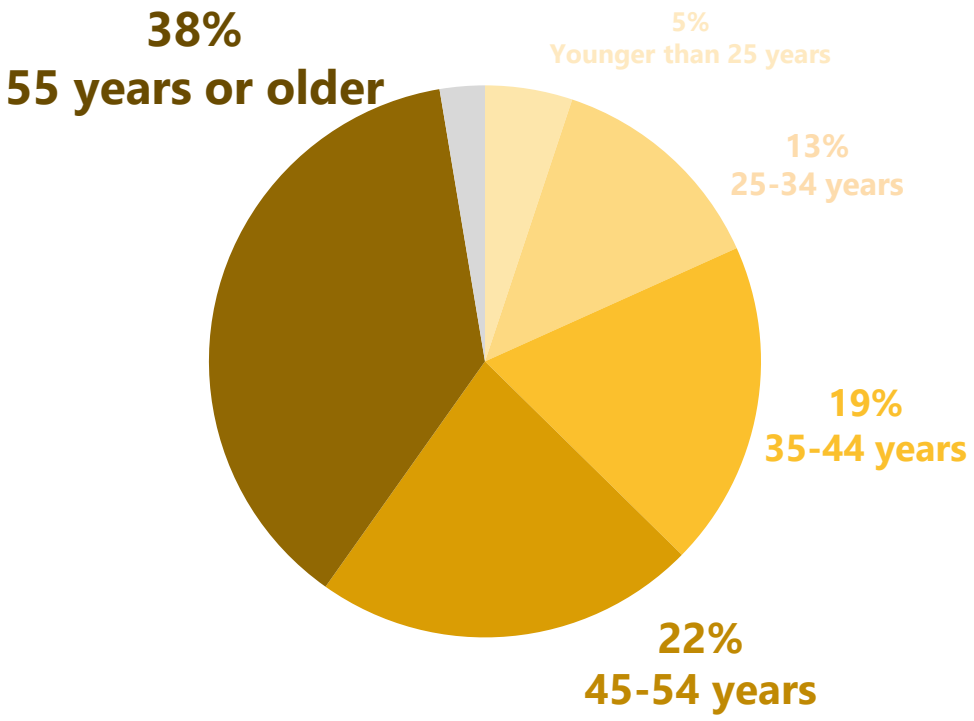
APPENDIX

Additional Survey Results

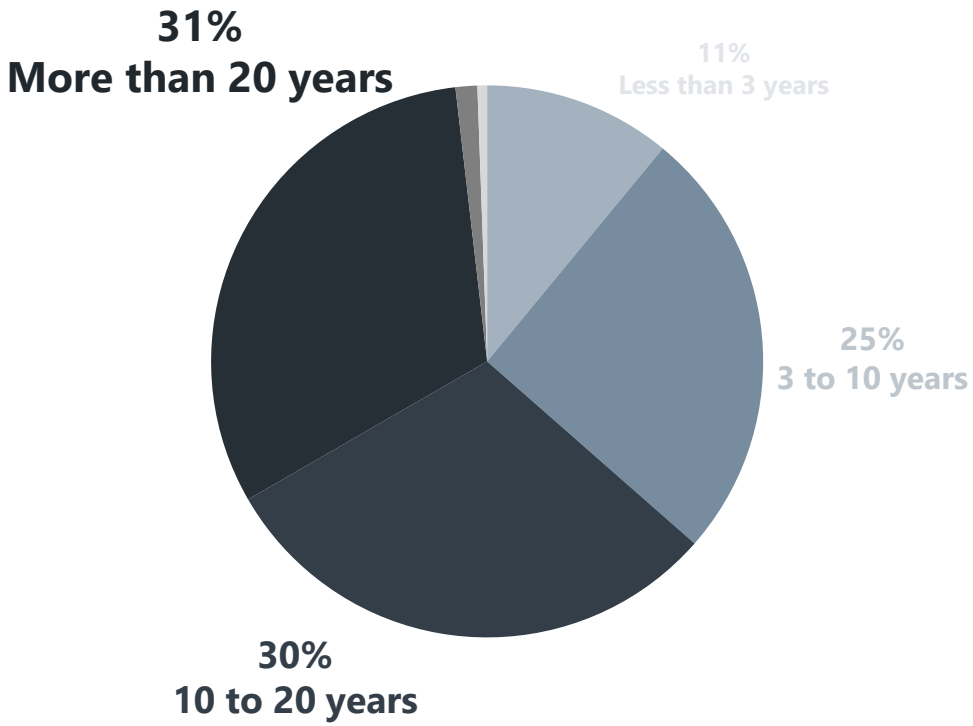
List of Sources

AGE AND MEMBERSHIP STATUS

Q: How old are you?



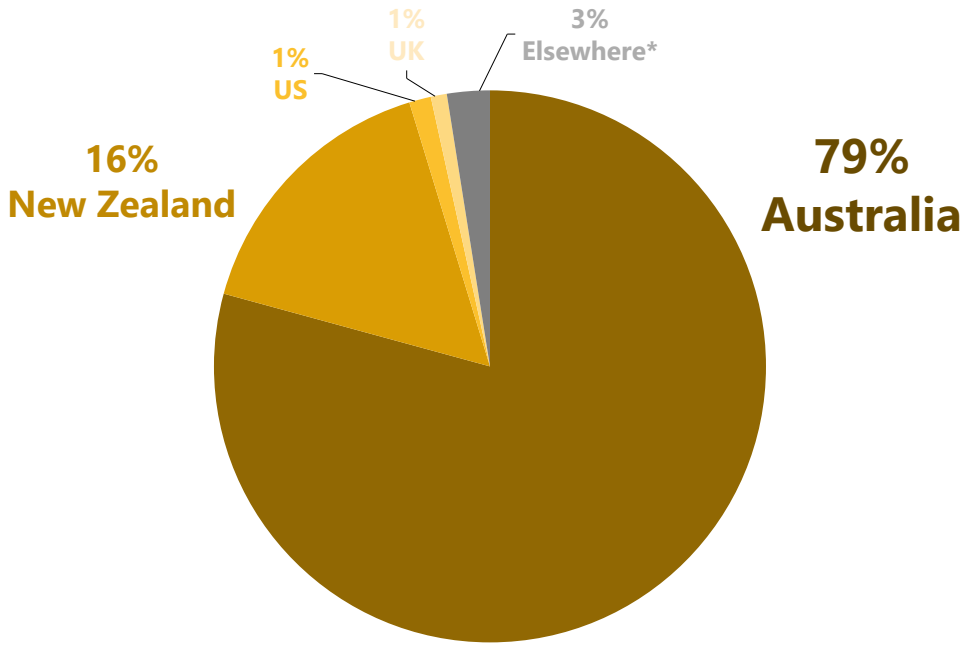
Q: How long have you been an APRA AMCOS member?



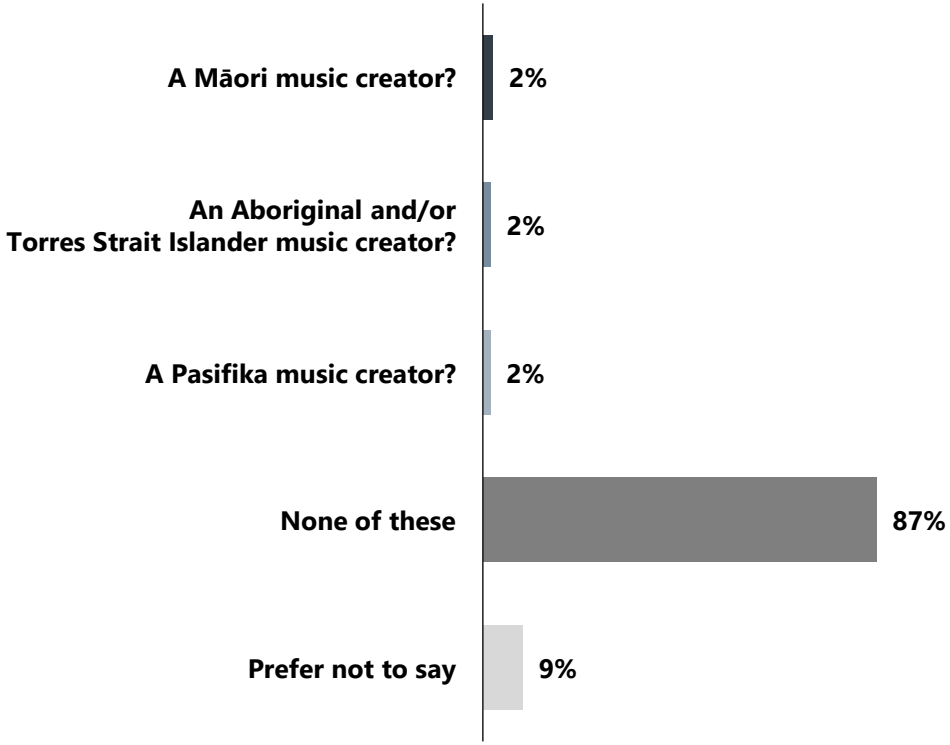
Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,908 / 4,245. Basis: APRA AMCOS members.
Difference to 100% = Prefer not to say / Unsure.

RESIDENCY AND INDIGENOUS BACKGROUND

Q: What country do you reside in?



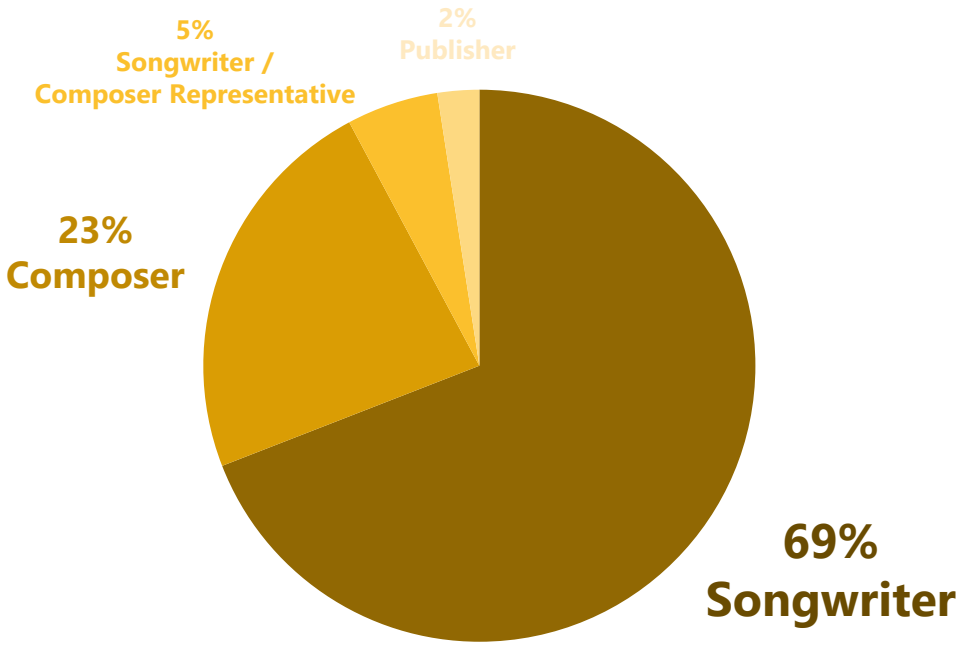
Q: We would like to ask whether you are...



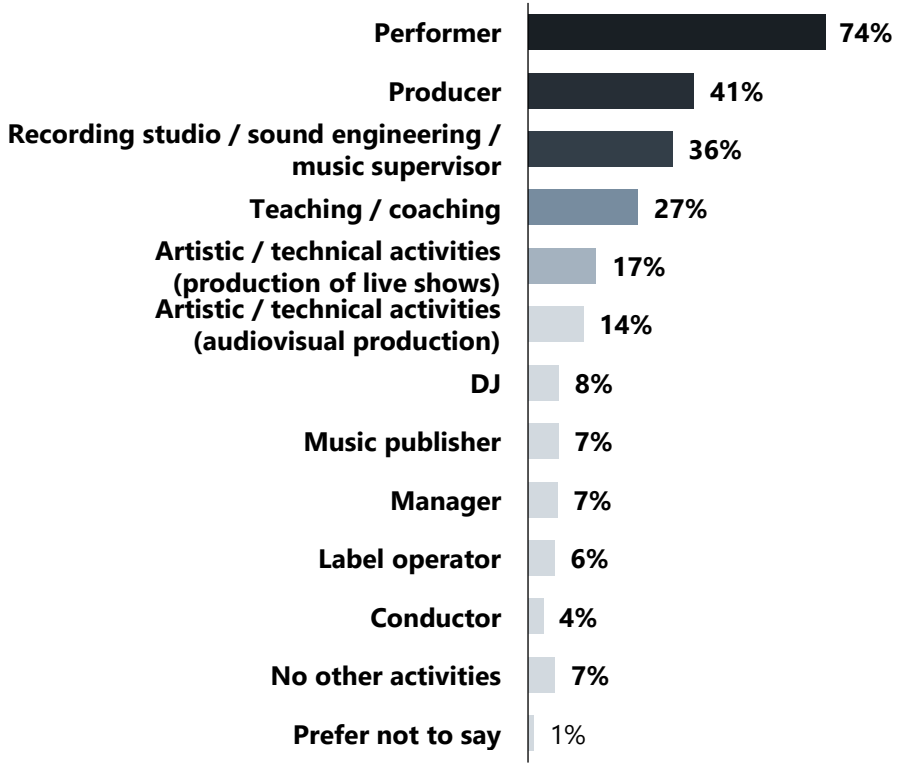
*Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,157 / 4,244. Basis: APRA AMCOS members. *Germany, Japan, Canada, Papua New Guinea, Fiji, Thailand, Ireland (Republic), France, Netherlands, Solomon Islands, Peru, Italy, Spain, Indonesia, Mauritius, Samoa, Austria, East Timor, Portugal, South Africa, Estonia, China, Norway, Sweden, Angola, Argentina, Colombia, South Sudan, India, Greece, Switzerland, Finland, Togo, Tanzania, Singapore (each below 0.5%).*

CREATIVE ACTIVITIES

Q: As an APRA AMCOS member, in which area are you mainly active?



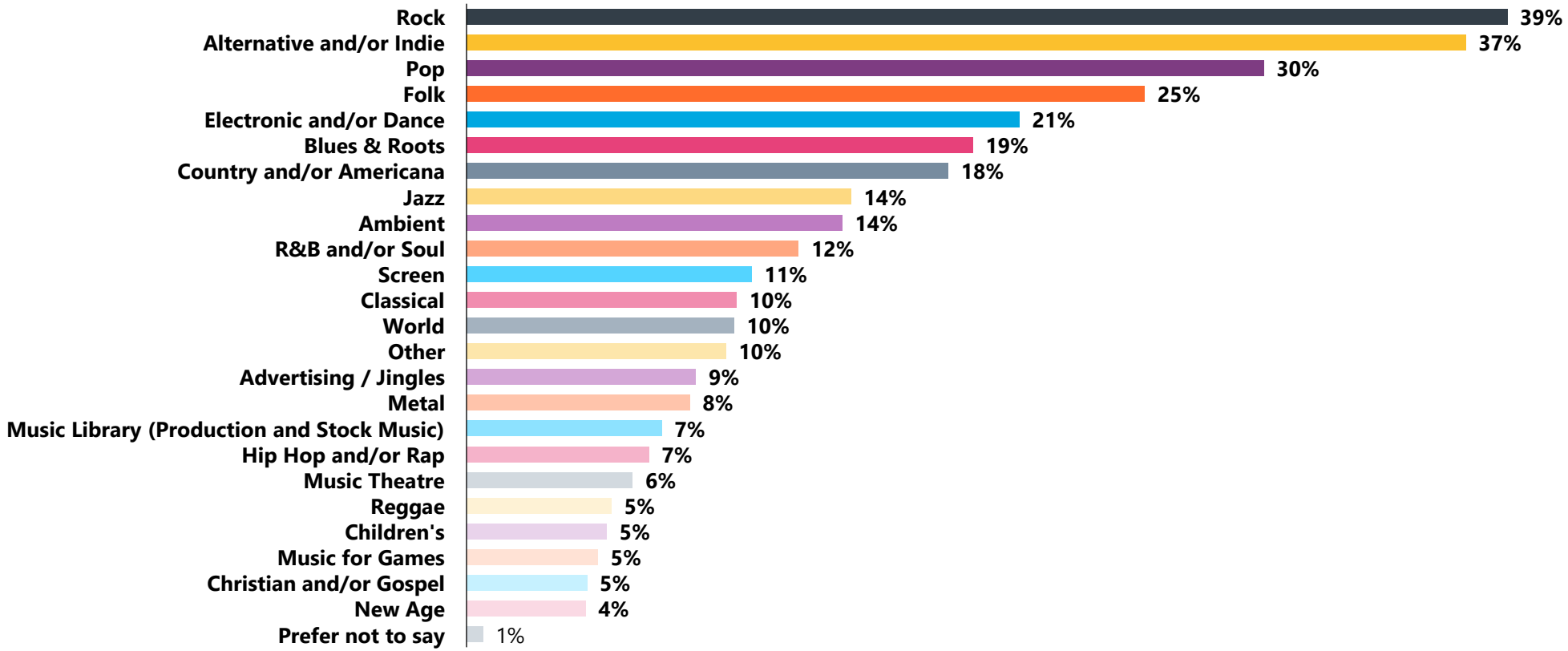
Q: Do you carry out any other activities in the creative industries / music sector?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=4,261 / 3,883. Basis: APRA AMCOS members.

GENRES IN THE APRA AMCOS MEMBERS' REPERTOIRE

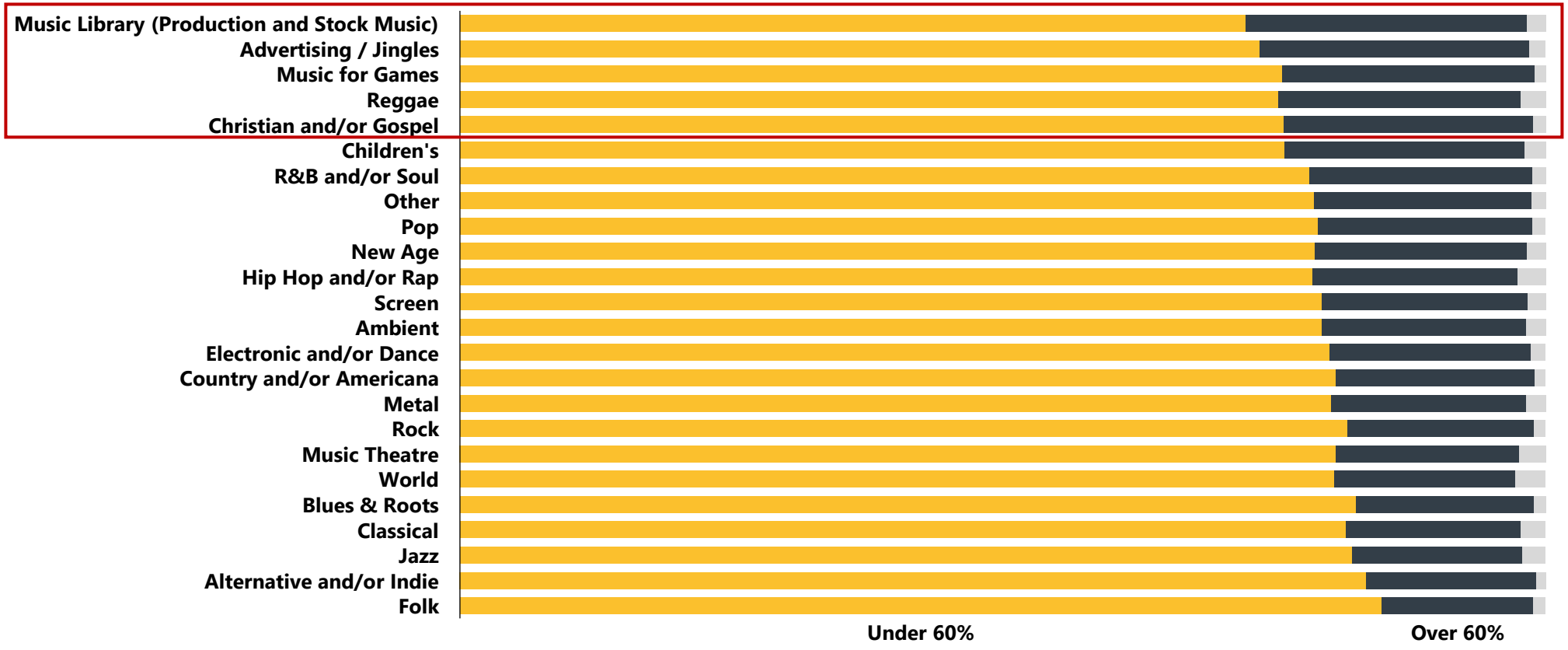
Q: Which genres / categories would you say the works in your repertoire belong to mainly?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,992. Basis: APRA AMCOS members.

GENRES MOST VULNERABLE TO REPLACEMENT BY GEN AI

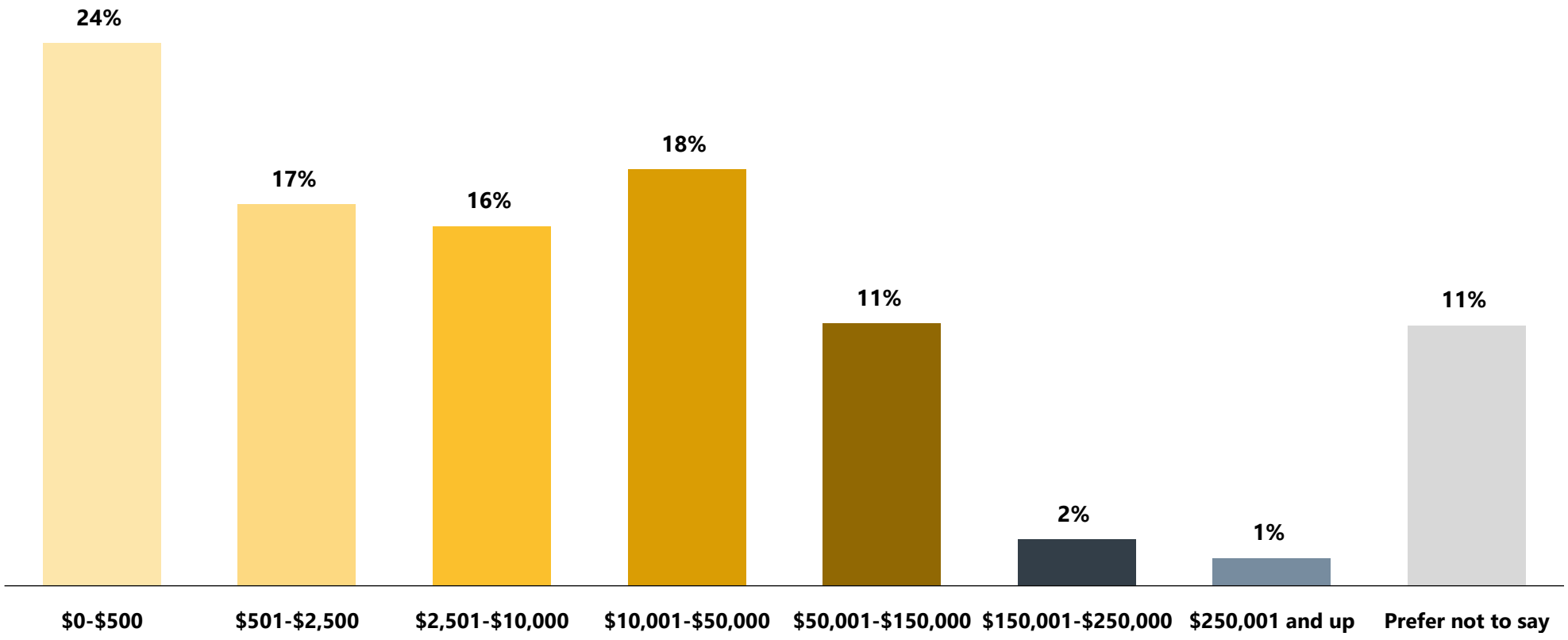
Q: To what extent (in percent) do you think your work will be replaced by AI-generated work by 2028?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,992. Basis: APRA AMCOS members.

APRA AMCOS MEMBERS' AVERAGE INCOME

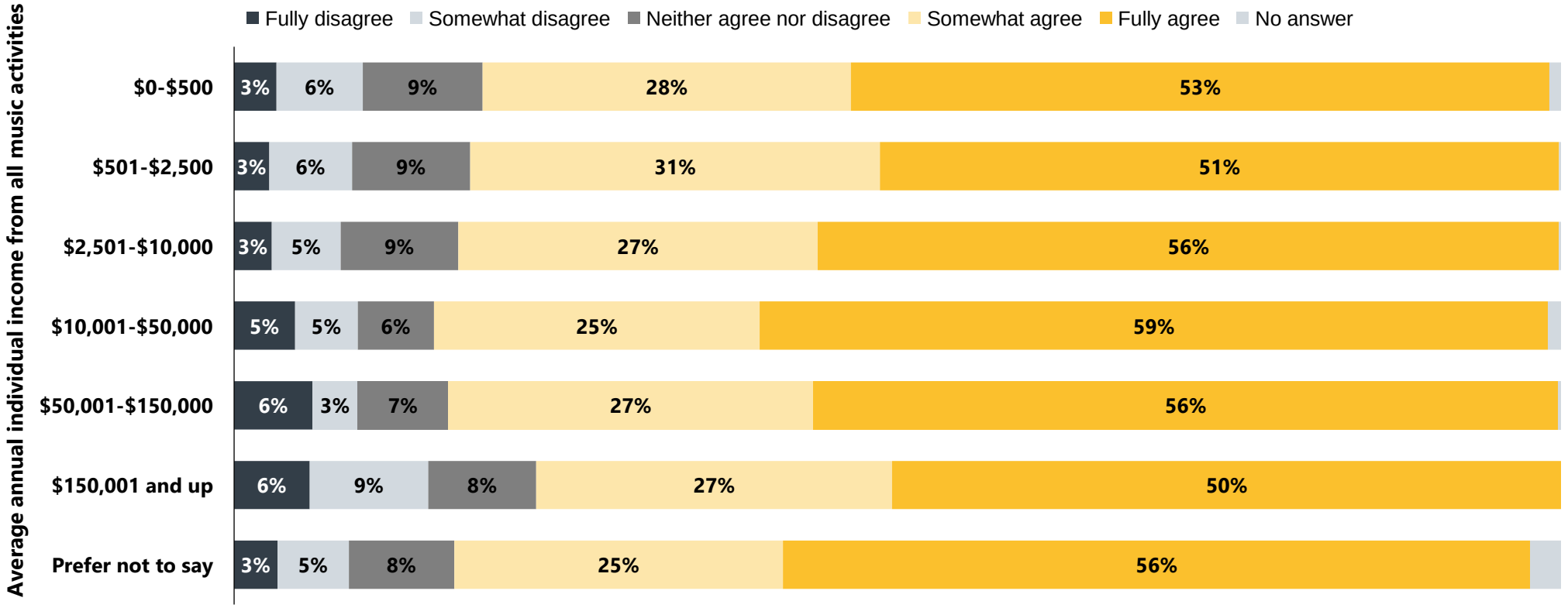
Q: On average, what is your annual individual income from all music activities?



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,889. Basis: APRA AMCOS members.

INCOME AND LIVELIHOOD FROM MUSIC ACTIVITIES

Q: The use of AI in music could lead to music creators no longer being able to make a living from their work.



Source: Goldmedia survey on behalf of APRA AMCOS (2024), n=3,889. Basis: APRA AMCOS members.

PHOTO: JESS GLEESON

APPENDIX

Additional Survey Results

List of Sources

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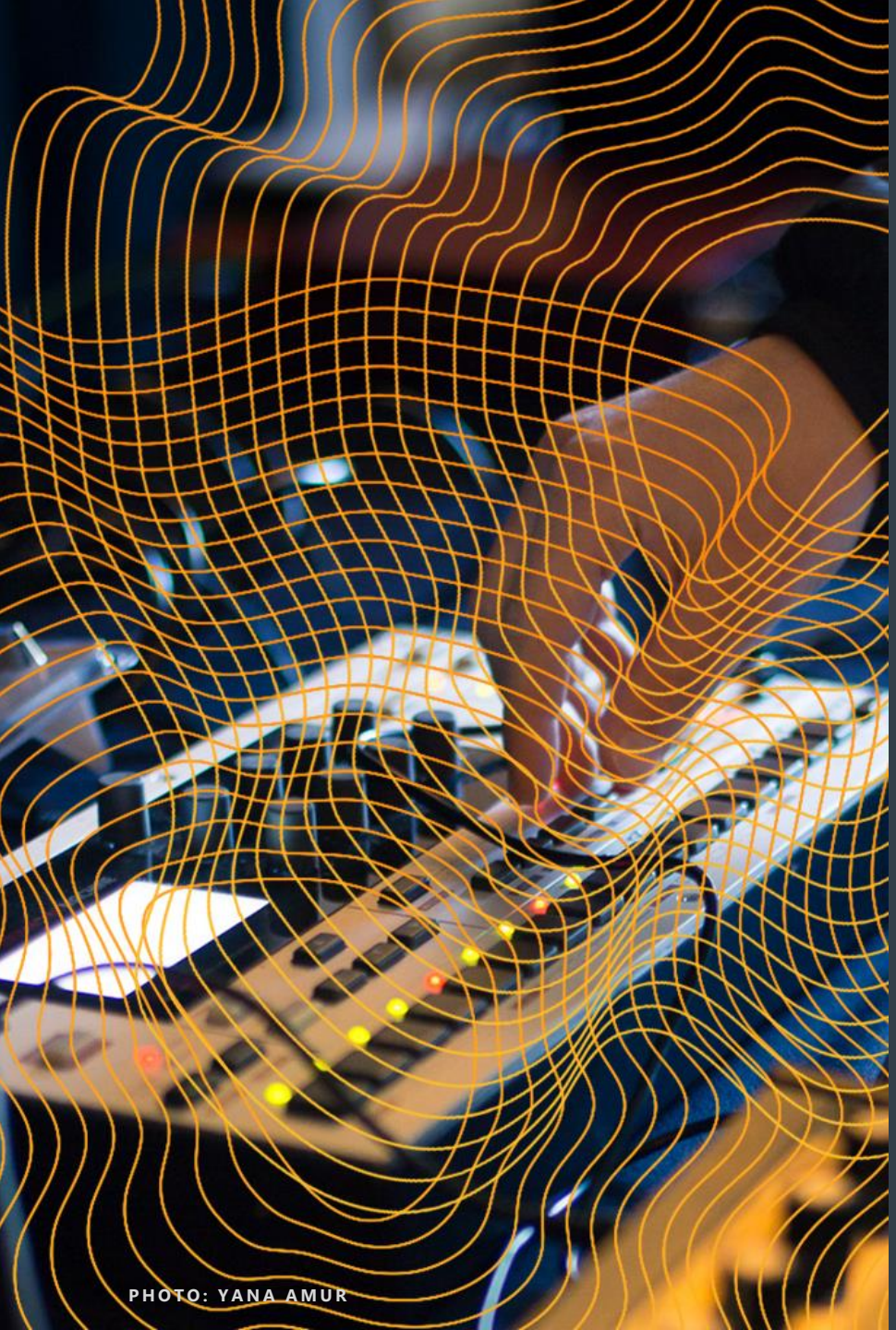

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MARKET DEVELOPMENT OF AI IN THE MUSIC SECTOR AND IMPACT ON MUSIC CREATORS IN AUSTRALIA AND NEW ZEALAND

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