



SCHOOL OF
ECONOMICS AND
MANAGEMENT

AI created music – copyright infringement or new creation?

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DEPARTMENT OF BUSINESS LAW

Master's Thesis in European and International Trade Law

15 ECTS

HARN63

Spring 2025

Contents

Abstract	4
Abbreviations	6
1 Introduction	7
1.1 Background	7
1.2 Purpose and research questions	8
1.3 Method and materials	9
1.4 Delimitations	11
1.5 Outline	11
2 Copyright and music	13
2.1 What is copyright?	13
2.2 Music copyright – what counts as a musical work? What is protected? ...	16
2.3 Eu copyright and its limitations	18
2.4 Summary	20
3 Artificial Intelligence.....	22
3.1 What is AI? What can it do?	22
3.2 DSM Directive art 4 , Text and data mining	24
3.3 Temporary acts of reproduction	28
3.4 Summary	30
4. Does Copyright protect creators enough?	32
4.1 The Exclusive Rights.....	33
4.2 Are the exceptions in DSM too broad or narrow?	33
4.3 How effective is opt out?	35
4.4 Is copyright effective enough to protect creators in the era of AI?	39
4.5 Summary	41
5. Summary and conclusions	43
References.....	44

Abstract

Artificial Intelligence has existed for many years and keeps developing. AI has become better at generating new works, for example music, which raises a question of whether AI can potentially infringe on copyright. This thesis examines the legal framework regarding copyright and AI and whether AI used in music can constitute a copyright infringement. The question that is focused on is “To what extent is copyright law capable of achieving the objective of protecting the interests of music artists in the era of AI?”

This was addressed by analysing how EU law handles copyright protected works when training AI, and how AI generated musical outputs are handled. The thesis explains the difference between musical works protected by copyright, and phonograms and performances that are protected under neighbouring right, or related rights.

The InfoSoc Directive provides rightsholders exclusive rights, such as the right to reproduction and communication to the public, which aims to protect rightsholders and their work. AI generated music is often reproduced more than once when training AI. The InfoSoc Directive aims to harmonize copyright law in today’s digital environment, by introducing the exceptions and protect creators.

The thesis also examines the impact the DSM Directive has on the use of copyright protected content, focusing on music. Article 4 of the DSM Directive allows text and data mining when content has been lawfully accessed, as long as the rightsholder has not opted-out. The opt-out mechanism is an option for rightsholders if they do not wish for their work to be used for text and data mining activities. The DSM Directive attempts to modernize the law in the digital age, but the effectiveness of the opt-out

mechanism is limited. It would be beneficial to update the legal framework to be able to ensure a balance between innovation and the creator's rights.

The transparency obligation that is introduced in the AI Act can help the rightsholders strengthen their rights, as the transparency obligation obligates for companies to be transparent with how and if copyright protected works are used for AI. However, although progress has been made to copyright in the digital era, there are still uncertainties. The current legal framework is based on human creativity and authorship, which can make it complicated to apply when AI is involved. The legal framework should be updated to ensure better transparency, fair compensation and a better balance between human creativity and AI, as the use of AI in creative fields, like music, are growing.

Keywords: Music, AI, Copyright, Data, Rightsholder.

Abbreviations

AI	Artificial Intelligence
AI ACT	Artificial Intelligence Act Com 2021/206
AI-HLEG	High-Level Expert Group on Artificial Intelligence
Berne Convention	Berne Convention for the Protection of Literary and Artistic Works (adopted 14 July 1967, entered into force 29 January 1970) 282 UNTS 221
CJEU	Court of Justice of the European Union
DSM Directive	Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market
EU	Court of Justice of the European Union European Union
InfoSoc Directive	Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society
TDM	Text and Data Mining
WTO	World Trade Organisation
WIPO	World Intellectual Property Organization

1 Introduction

1.1 Background

In today's society, artificial intelligence has become a big and central part in the development of technology. AI has made it possible to create and consume media in new ways.¹ This new technology affects all types of media, including music, as AI has learned to mimic artist's style and sound. An example of this happening is the song "Heart on my sleeve", which was AI generated and mimicked the sound of Drake and the Weeknd.² This has led to discussions about if AI can constitute a copyright infringement by copying sounds and style. It has been brought to courts by rightsholders and AI developers have been challenged.³ However, it is not within EU and there are still concerns concerning AI and music. By using AI, there is a risk that artists and the creative industry gets harmed, which sparks a fear for those who make a living out of music and other art.⁴ The aim of EU is to foster innovation and reward creativity by using copyright laws to make sure that artists are rewarded.⁵ But the ability that AI has to make multiple creations based on one piece of music creates challenges for artists in the way their music is used and consumed.⁶ EU has implemented the AI Act to try and make sure that AI is being transparent and respectfully used. The AI Act aims to address challenges that can occur when AI is used, for example copyright

¹ Andrew Chow. "AI's Influence on Music Is Raising Some Difficult Questions." TIME, 4 December (2023).

² Rachel Reed 'AI Created a Song Mimicking the Work of DRAKE and The Weeknd. What does that Mean for Copyright Law?' Harvard to day, 02 May (2023).

³ The New York Times Company v Microsoft Corporation and OpenAI, Inc., Case No 1:23-cv-11195 (United States District Court Southern District of New York, filed 27 December 2023)

⁴ Cameron Shackell, 'Will AI kill our creativity? It could – if we don't start to value and protect the traits that make us human' (The Conversation, 27 September 2023)

⁵ Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society (InfoSoc Directive), Recital 10.

⁶ Regulation (EU) 2024/ 1689 of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) Recital 105.

issues.⁷ However, there are still issues that can occur regarding the use of AI and copyright protected music. In this essay I will examine if the use of a sound by AI is an infringement and to what extent copyright law is capable of achieving the objective of protecting the interests of music artists in the era of AI.

1.2 Purpose and research questions

The development of Artificial intelligence has led to both creative opportunities as well as legal challenges. In the music industry, AI can be used to replicate for example styles, artists and music arrangements, which has raised questions about how copyright law deals with the development of AI. There is tension between ensuring the protection of artist's intellectual property rights while also promoting AI and technological innovation.

The purpose of this thesis is to examine what rules apply when AI is used to mimic a sound or style of an existing artist. More specifically, it is of interest to know if the copyright law is enough to protect the interests of music artists when AI is involved, or if it is lacking. The question to be answered is: To what extent is copyright law capable of achieving the objective of protecting the interests of music artists in the era of AI?

To answer this question, the thesis will explore the relation between copyright law, music and artificial intelligence within EU. It will explore the reproduction right and scope of protection under Article 2 InfoSoc Directive, as well as how effective and clear the limitations to the reproduction right for text and data mining are in Article 4 of the DSM Directive. The reproduction rights are important because they provide an economic right for rightsholders in the digital age, it gives them the exclusive right to prohibit reproduction.

⁷ European Parliament, 'EU AI Act: first regulation on artificial intelligence' (European Parliament, 8 June 2023)

Text and data mining are relevant because it affects how content is used and raises questions about consent and fair use in the context of music and AI.

1.3 Method and materials

This thesis will use a legal dogmatic method to examine the research question. A legal dogmatic method aims to provide an explanation, of principles, rules and concepts of law and how they relate to one another, to solve gaps in the existing law.⁸ I will look at principles and rules that control copyright protected musical works as well as what applies when AI is involved. As well as analysing case law, for example Case C-5/08, *Infopaq International A/S v Danske Dagblades Forening*, as it is considered a very important case regarding copyright law. Infopaq sets a base for what qualifies as a protected work under EU copyright law. It also sets out important examples for digital use of content, such as TDM. The InfoSoc Directive (2001/29/EC) as well as the DSM Directive (2019/790/EU) will be used as well, these Directives are important because the InfoSoc Directive set out the basis for the reproduction right and the DSM Directive introduces the TDM exceptions which will be of importance throughout the thesis. Article 2 and Article 5 of the InfoSoc Directive will be focused on. Because the InfoSoc Directive provides rights and limitations related to this topic and is an important part of copyright law. Article 4 of the DSM Directive will be analysed, as the DSM Directive is a key piece of EU copyright legislation. Article 4 regulates data mining which is relevant to discuss in relation to the use of AI. Treaties will be used as well, such as the Berne Convention, the core principles of this treaty is the protection of author's rights, it sets out the international standards for originality and reproduction. The applicable law in this thesis consists primarily of the EU copyright framework, including the InfoSoc Directive (2001/29/EC) and DSM Directive (2019/790/EU). The law will be interpreted, and by using a legal dogmatic method, the law can be

⁸ Jan Smits, 'What is Legal Doctrine? On the Aims and Methods of Legal-Dogmatic Research' In R. van Gestel, H. Micklitz, & E. L. Rubin (Eds.), *Rethinking Legal Scholarship: A Transatlantic Dialogue* (Cambridge University Press, 2017).

analysed.⁹ The copyright law will be examined from a perspective that considers several interests, which is the promotion of creativity, the protection of author's rights and the need for innovation in AI, this is a perspective that is set out in the InfoSoc Directive.¹⁰ The thesis will examine how well the copyright framework succeeds to uphold a balance between innovation and protection of creators in relation to AI and text and data mining.

This thesis will focus on the issue that can arise when music is AI generated and mimics an artist's sound, and whether this is a copyright infringement. The EU consists of multiple countries, each with their own legal system. Copyright is primarily national in its scope, which can lead to different interpretations across countries. However, EU aims to harmonise copyright law, through directives such as the InfoSoc Directive. This Directive has provided a common legal framework across the EU regarding the right of reproduction and the right of communication to the public. The Court of Justice of the European Union (CJEU) plays an important role in interpreting these rights and ensuring that they are applied in a way that is consistent across the Member States. The CJEU can also clarify differences between the scope of rules in different Member States.¹¹

The AI Act will also be mentioned as the AI Act regulates AI systems and indirectly regulates AI's relationship to copyright law. The purpose of the AI Act is to improve the internal market and its function by providing a legal framework for the use of AI. It is therefore relevant when discussing the use of AI systems.

⁹ Jan Kleineman 'Rättsdogmatisk metod' in Maria Nääv and Mauro Zamboni (eds) *Juridisk Metodlära* (MTM 2018) 23-25.

¹⁰ InfoSoc Directive, Recital 4,9.

¹¹ Annette Kur, Thomas Dreier & Stefan Luginbuehl, *European intellectual property law: text, cases and materials* (2nd edn, MTM 2021).

1.4 Delimitations

There are two stages when AI is being discussed, the training stage, and the exploitation stage when the system is used. The training stage of AI is what will be focused on throughout the thesis regarding AI.

1.5 Outline

The background explains that the use of AI in music production challenges traditional copyright frameworks. And that this thesis will examine whether EU copyright law protects creators in the age of AI. The question is “To what extent is copyright law capable of achieving the objective of protecting the interests of music artists in the era of AI?”

In chapter two, copyright and its purpose is defined, focusing on the reproduction right (InfoSoc Art. 2). The chapter examines the harmonisation of copyright in the EU, through the InfoSoc and DSM Directive, and discusses exceptions and limitations. The chapter also examines what counts as a musical work under EU law.

Chapter 3 introduces AI and its ability to create content. It explains the difference between input data and output, and discusses whether AI-generated music can be copyright protected. Article 4 of the DSM Directive on text and data mining (TDM) is analysed and discussed, including the opt-out mechanism and its role in AI training.

Chapter 4, discusses whether current EU copyright law protects creators enough in the age of AI. The scope of the DSM exceptions are discussed, and whether the opt-out mechanism is effective or not in protecting rightsholders against unlicensed AI use.

Lastly, chapter 5 summarises and concludes the thesis.

2 Copyright and music

In this chapter, the essay will discuss what copyright protection is, as well as what is included in the protection and what requirements there are for protection. To determine if copyright is capable of protecting rightsholders in the era of AI, it is important to explore the basics of copyright to determine if protection is actually provided. The InfoSoc Directive will be introduced and explained because the Directive introduces the reproduction right which is relevant regarding AI. Limitations and exceptions to copyright will be discussed, as well as musical works and what that is.

2.1 What is copyright?

Before the harmonization of intellectual property law, copyright was controlled mostly by national law, the effect of EU law on intellectual property law of the Member States was limited. EU law influenced intellectual property law through rules on free movement of goods, as well as competition. Because that is essential for creating an internal market.¹² The free movement of goods and services is a EU principle that is fundamental, however, the EC Treaty, which is a treaty on the functioning of the European Union, allows exceptions to this principle, if it is necessary to protect for example copyright.¹³ This means that it is possible to restrict goods and services across borders if the purpose is to protect intellectual property rights. The European Court of Justice (CJEU) clarifies that the exercise of intellectual property rights need to comply with EU law, even if the existence of those rights are left to national laws. This means that you can have national

¹² Articles 28/30 (free movement of goods), Arts 49–55 (free movement of services), Art 81–89 EC Treaty

¹³ Article 36 reads ‘The provisions of Articles 34 and 35 shall not preclude prohibitions or restrictions on imports, exports or goods in transit justified on grounds of... the protection of industrial and commercial property. ...’ In *Musik-Vertrieb Membran v. GEMA*, the ECJ clarified that industrial and commercial property includes copyright; ECJ 20 Jan. 1981, Joined Cases 55 and 57/80, ECR [1981] 147, (*Musik-Vertrieb Membran*).

intellectual property laws, but they cannot be used in a way that conflicts with EU principles.

Copyright protects any original work that is created, such as literary or artistic. To be granted copyright protection for a work itself, the work needs to not only be original but also reflect the creator's own intellectual creation.¹⁴ A work cannot be considered original if there is no space for creative choices. Copyright protection grants the rightsholder exclusive rights, which means that nobody can use a creator's work without consent if the use falls within the rights.¹⁵ In EU, copyright protects an intellectual property 70 years after the creator's death.¹⁶

Related rights are generally protected for 50 years from the date of the performance. Related rights protect the way performances or recording are communicated to the public, and the ways it is used.¹⁷

Copyright is based on the principle of territoriality, meaning that the content of the copyright is subjected to the law of the country, meaning that there is no union-wide copyright that EU refers to.¹⁸

The InfoSoc Directive (2001/29/EC) is central in the EU copyright framework. It contains exclusive rights, the right of reproduction in Article 2 as well as the right of communicating to the public in Article 3 to authors of works. The InfoSoc Directive does not include a definition of "works".

The Berne Convention contains a definition however and is incorporated in the EU framework through Article 1(4) WCT, as WCT does not include a right of reproduction.¹⁹ The definition of "work" can be interpreted through Article 2 of the Berne Convention, as this article states that work can include

¹⁴ WIPO, 'Understanding Copyright and Related Rights' (2nd ed, WIPO 2016) 20; European Commission, 'Copyright' (European IP Helpdesk)

¹⁵ Directive 2006/116/EC of the European Parliament and of the Council of 12 December 2006 on the term of protection of copyright and certain related rights (Copyright Term Directive) Article 1.1- 1.2. Article 9(1) Berne Convention.

¹⁶ Directive 2006/116/EC of the European Parliament and of the Council of 12 December 2006 on the term of protection of copyright and certain related rights (Copyright Term Directive) Article 1.1- 1.2.

¹⁷ InfoSoc Directive, Article 3.

¹⁸ Harmonizing European Copyright Law, Prof. P. Bernt Hugenholtz Institute for Information Law University of Amsterdam. Ch 9, p. 327.

¹⁹ Kacper Szkalej, Martin Senfleben. Generative AI and Creative Commons Licences The Application of Share Alike Obligations to Trained Models, Curated Datasets and AI Output, 5. WCT, Art. 1(4).

any production in the artistic, literary or scientific domain. Such as musical works. Creators are granted the reproduction right regarding their work, while for example performers and phonogram producers are provided similar rights in relation to their recordings and performances. However, these rights are referred to as neighbouring rights, or related rights. These related rights are important in the music sector. Article 2 and 3 of the InfoSoc Directive list the exclusive rights for performers, like singers and musicians.²⁰

Within the EU copyright framework it is established that the exclusive rights granted to both copyright and neighbouring rights holders extend to all forms of copying of protected content. Some types of copying can fall under exceptions, but the fact is that the right of reproduction in the EU is broad in scope and includes acts of copying in digital environments.²¹

The InfoSoc Directive wants to establish an internal market and ensure that competition is not unfair. By harmonising the laws on copyright and related rights, this contributes to ensuring a fair competition and a functioning internal market.²² Copyright and related rights protect and help the development of new products. Harmonising the law supports the implementation of the four freedoms of the internal market and ensures alignment with fundamental legal principles, such as intellectual property rights and freedom of expression.²³

There are cases that have interpreted Article 3 of the InfoSoc Directive, one of these cases is Case C-306/05, *Sociedad General de Autores y Editores (SGAE) v Rafael Hoteles*. In this case, SGAE sued Rafael Hoteles, claiming that the hotel had infringed copyright by installing TV in guest rooms, and by doing that they allowed broadcasting of copyright protected works. The question that appeared was whether making television broadcasts of copyright protected works could constitute a “communication to the public” under Article 3 of the InfoSoc Directive. It was held that having TVs in guest rooms that enabled guests to watch broadcasts, qualified as a communication

²⁰ InfoSoc Directive, Article 2, Article 3.

²¹ Ibid, 6.

²² InfoSoc Directive, Recital 1.

²³ InfoSoc Directive, Recital 2-3.

to the public.²⁴ Communication to the public can therefore be seen as a very broad concept as there is no need for an actual transmission, giving access is enough. The interpretation of exclusive rights, such as reproduction rights and communication to the public, should be broad, as is shown in this case. The InfoSoc Directive also confirms that the interpretation should be broad regarding exclusive rights.²⁵

2.2 Music copyright – what counts as a musical work? What is protected?

The definition of a musical work is a musical composition, either with or without lyrics. Musical works can include musicals, operas, songs, or a melody for example. It is a musical expression of an idea.²⁶ Copyright protects original works, for example the lyrics and the music itself. A work needs to meet the originality requirement and express the creator's own intellectual creation. The creator should express free and creative choices.²⁷ In the context of music, it is important to distinguish between two different types of subject matters that are protected. The first one is musical works, which is an authorial work and protected by copyright under Article 2 of the InfoSoc Directive. A musical work refers to the composition itself, which includes such things as melody, rhythm and lyrics, created by a composer. This is protected if it meets the originality requirement.²⁸

The second subject that is protected is sound recordings, which is protected under neighbouring rights, also called related rights. A sound recording is a fixation of a performance of a musical work. Neighbouring rights are granted to performers, like musicians and singers, as well as phonogram producers who invest in the recording. In this case, the protection applies to a recorded performance, not the composition and there is no originality requirement

²⁴ *Case C-306/05, Sociedad General de Autores y Editores (SGAE) v Rafael Hoteles*. In this case, SGAE sued Rafael Hoteles, p 47.

²⁵ InfoSoc Directive, Recital 9.

²⁶ The Berne Convention, Article 2(1).

²⁷ C-5/08 - Infopaq International, para 37.

²⁸ Hugenholtz, Bernt, *Harmonising European Copyright Law*, 236.

regarding related rights.²⁹ Authorial rights can be described as protecting the content, while neighbouring rights protect the signal.³⁰ Copyright protection is broader than the neighbouring rights. Copyright protection requires creativity and intellectual creation, while neighbouring rights protect performances or productions that might not meet the originality criteria, such as sound recording or performances. Neighbouring rights can therefore be seen as more limited than copyright.

When talking about music, the possibility of sampling should be mentioned. Sampling is done when a part of a sound recording is taken and used in a new song. According to the CJEU, the definition of sampling is a “user taking a sample from a phonogram, most often by means of electronic equipment, and using the sample for the purpose of creating a new work”³¹

The copyright in music is often held by the artist, as the artist is the creator of the work usually. However, the rights can be transferred either partially or fully, to record labels through agreements. When a right is transferred to a record label, the copyright protects the label’s interest as the rightsholder, however, it is still rooted in protecting the artist’s original creative effort. Article 18 of the DSM Directive states that creators that transfer their exclusive rights shall receive appropriate compensation.³²

Sampling is the use of fragments of existing recordings in new music, it can be a portion of a phonogram.³³ This centres on the exclusive rights granted by copyright law. Under Article 2 of the InfoSoc Directive, phonogram producers hold the exclusive right to prohibit a reproduction of their recording. Which means that copying a sound recording, which includes sampling, requires consent. An example of what risks can occur when sampling can be seen in the band The Verve’s case. The band incorporated a sample from a Rolling Stones song in their new song. The Verve had obtained a license to use the sample, but they had not obtained the publishing rights. The band had obtained a license for the sound recording, but they had not

²⁹ Ibid, 183, 185. WIPO, 27. International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations (adopted 26 October 1961, Article 3 (a)-(c).

³⁰ Kacper Szkalej, Copyright in the Age of Access to Legal Digital Content : A study of EU copyright law in the context of consumptive use of protected content, 2021, p. 70.

³¹ Pelham and Others v Hütter and Others (C-476/17), para 35.

³² DSM Directive, Article 18.

³³ P. Bernt Hugenholtz, Neighbouring Rights are Obsolete, 1009.

secured the publishing rights.³⁴ Because of this, they had to give up the royalties. The issue regarding sampling has been dealt with in C-476/17, *Pelham and Others v Hütter and Others*, where the CJEU ruled on the copyright of sampling and discussed the boundaries between artistic freedom and sampling. In this case, Pelham produced a song that used a 2-second sample from another song without permission. The CJEU ruled that under Article 2(c) of the InfoSoc Directive, sampling without permission is an infringement of the reproduction right, unless the sample is changed and unrecognisable. If the sample is not identifiable, this can instead be considered an artistic expression, potentially falling outside the scope of the exclusive right.³⁵

However, it is important to distinguish between copyright and neighbouring rights in musical works. When sampling audio, a part of a sound recording is cut and pasted into another song. In this case, the actual sound recording is being copied, which infringes the neighbouring rights.³⁶ While if an artist makes their own recording of someone else's song, this infringes the copyright of a musical work, not the neighbouring rights.³⁷ Unauthorised sampling can infringe both reproduction and possibly communication rights, unless it is unrecognisable, or consent is obtained.

2.3 Eu copyright and its limitations

To determine whether an unauthorized use of a copyright protected work can be lawful, the InfoSoc Directive provides a harmonised framework for exclusive rights and their exceptions. Article 5 of the InfoSoc Directive contains a list of exceptions and limitations to the reproduction and communication to the public rights, that are defined in Articles 2 and 3. According to recitals 31 and 31 of the InfoSoc Directive, exceptions and

³⁴ 'Bitter Sweet Symphony: Rolling Stones return royalties and rights to Richard Ashcroft after 22-year row

³⁵ Pelham, para 39.

³⁶ InfoSoc Directive, Article, 2(c).

³⁷ Hugenholtz, Bernt, *Harmonising European Copyright Law*, 185.

limitations must comply with the “three-step test”, which has been set out by The Berne Convention which is an international copyright treaty.³⁸

However, the exceptions are only applied in some cases and cannot conflict with any normal use of a work and must not harm the market. The three conditions that allow exceptions to copyright is (1), that the exception must apply in special cases, (2), it cannot conflict with any normal use of the work, and (3), it cannot prejudice the author’s legitimate interests.³⁹

Exceptions and limitations can be found in the InfoSoc Directive Article 5 and the DSM Directive.⁴⁰ The purpose of these limitations and exceptions are to attain public policy goals, these can be divided into three different categories. There are exceptions that support fundamental freedoms, like freedom of expression, exceptions that favour public interest such as access to information. Making parodies or quoting a work. These exceptions are not obligations. As this is crucial for enabling the use of digital content without infringing on copyright protection.⁴¹ CJEU has stated that exceptions must be interpreted strictly, because copyright and its exceptions are deviations from the general rule that a rightsholder has exclusive rights. So exceptions has to be applied cautiously.⁴² CJEU case law has also been interpreted to mean that the three-step test is not intended to alter the content of the exceptions in Article 5 of the InfoSoc Directive. In that case, if a particular use falls within one of the exceptions, it should be considered to comply with the three-step test. The exceptions and limitations should be interpreted in light of Article 5(5) InfoSoc Directive.⁴³ It has been suggested that the three-step test is addressed to national legislatures, which suggests that there is limited legal basis for applying Article 5(5) of the InfoSoc Directive in private litigation.⁴⁴

³⁸ Article 9(2) of the Berne Convention for the Protection of Literary and Artistic Works. P. Bernt Hugenholtz & Ruth Okediji, *Conceiving an International Instrument on Limitations and Exceptions to Copyright* (2008) 16.

³⁹ The Berne Convention, Article 9.

⁴⁰ Kacper Szkalej, *Copyright Liability and Generative AI: What’s the Way Forward?* 94

⁴¹ InfoSoc Directive, Article 5.2 (b), which is limited to the reproduction of the content and for use in the private sphere, Article 5 (3) (k), Article 5.3 (d).

⁴² (C-5/08) *Infopaq International A/S v Danske Dagblades Forening*, para 56.

⁴³ Eleonora Rosati, *Copyright and the Court of Justice of the European Union* (Oxford Scholarship Online 2019) 149.

⁴⁴ Christophe Geiger, ‘From Berne to national law, via the Copyright Directive: the dangerous mutations of the three-step test’ [2007] *European Intellectual Property Review* 486, 488.

2.4 Summary

In this chapter, copyright in music, neighbouring rights and exceptions have been discussed. To determine whether copyright effectively protects creators in the age of AI, it is important to understand the legal structure of EU copyright law. As outlined in the chapter, copyright in the EU has been harmonised through the InfoSoc Directive and DSM Directive. The reproduction right is central to EU copyright and applies to both authors and performers. Creators are granted copyright protection if their work is original and express the creator's own intellectual creation. While performers and phonogram producers are protected under neighbouring rights, which does not require originality. These different categories of protected subject matters and rightsholders are relevant in the context of music. It is important to distinguish between musical works and sound recordings, since they protect different things. The exceptions and limitations are guided by Article 5 of the InfoSoc Directive, set out by the Berne Convention's three-step test, show that EU wants to balance exclusive rights with public interests, which includes freedom of expression. The rights and exceptions to these rights provides context when assessing how well copyright law functions in the era

of AI. Furthermore, this essay will discuss AI and how well copyright protection protects creators when AI is involved.

3 Artificial Intelligence

In chapter 2, copyright protection was discussed. In chapter 3, the essay will examine what Artificial Intelligence is and what it can do. This chapter will explore the implication of AI in the music sector. It is relevant to know what happens when music is AI generated and how the legal framework responds to AI generation. The chapter will analyse the DSM Directive, which contains provisions that are relevant to text and data mining and digital content. This chapter will evaluate the development of AI in light of the research question, “To what extent is copyright law capable of achieving the objective of protecting the interests of music artists in the era of AI?” This will be done by analysing how the law defines authorship and how rights are granted when AI is involved.

3.1 What is AI? What can it do?

There are two stages regarding AI, the training and development stage, and the exploitation stage when the system is used. The training stage is when AI systems collect and train on data, for example music.⁴⁵

Artificial Intelligence can be defined as a machine approximating human behaviour.⁴⁶ WIPO describes AI as software that focuses on carrying out tasks that typically require human intelligence, with minimal human involvement.⁴⁷ AI collect and interpret data, processes the information provided and acts out the best action based on the information.⁴⁸ AI has the ability to adapt, understand and correct performances based on what the

⁴⁵ EU Intellectual Property Office (EUIPO), *The Development of Generative Artificial Intelligence from a Copyright Perspective* (2023), 30.

⁴⁶ Ryan Calo, ‘Artificial Intelligence Policy: A Primer and Roadmap’ (2017), p. 404

⁴⁷ WIPO, ‘Revised Issues Paper on Intellectual Property Policy and Artificial Intelligence’ (WIPO/IP/AI/2/GE/20/1 Rev, 21 May 2020)

⁴⁸ AI-HLEG, ‘A Definition of AI: Main Capabilities and Disciplines’ (European Commission, 8 April 2019) p. 1, 4

system learns from experience. This is called machine learning, which allows a machine to learn from examples that it can use to create outputs that it bases on the input it is provided.⁴⁹ Artificial intelligence can create artificial outputs by examining examples and learn their patterns. These outputs can be audio, images, videos or texts.⁵⁰ When training AI generators, pre-existing data is required, like lyrics, music or audio recordings. For example, both Getty Images and The New York Times have been used when training AI systems.⁵¹ Public datasets are sometimes used when training AI, which can include copyright-protected work. In this process of training, AI makes copies and reproduces the data that is analysed.⁵² This type of reproduction can be considered an infringement of copyright, because under Article 2 of the InfoSoc Directive, reproduction that is either direct or indirect, temporary or not is an exclusive right.

A work needs to be copyright protected for an infringement to occur when training an AI model. Songs generally qualify for such protection, for example, lyrics and music compositions are protected by copyright.⁵³ This means that any reproduction of a protected material needs consent, or needs to fall under a copyright exception to be lawful.⁵⁴

Regarding the exploitation stage, making content that is protected, available without permission is a copyright infringement. The risk of copyright infringement is very apparent when AI is used to make and generate new music.⁵⁵ Over the last few years, the use of AI in music has increased.⁵⁶ AI

⁴⁹ Theodoros Chiou, 'Copyright Lessons on Machine Learning: What Impact on Algorithmic Art?' (2019) 10(3), p 398-399.

⁵⁰ Axhamn J, Artificial Intelligence and the Need for Legislation, in Morten Rosenmeier, Thomas Riis, Jens Schovsbo, and Henrik Udsen (eds), *Festschrift till Jørgen Blomqvist* (Lund University 2021), 119.

⁵¹ *The New York Times v. OpenAI* (n 4) and *Getty Images v Stability AI* (n 4).

⁵² Zirpoli, Christopher T, *Generative Artificial Intelligence and Copyright Law*.

⁵³ Case C-476/17, *Pelham and Others v Hütter and Others* (2019) ECLI:EU:C:2019:624, para 29. The CJEU has clarified that the reproduction of a sound sample, regardless of how short, must be interpreted as a reproduction "in part" of the phonogram, and as a result, the reproduction falls within the exclusive rights granted to the phonogram's producer under that provision.

⁵⁴ EU Intellectual Property Office (EUIPO), *The Development of Generative Artificial Intelligence from a Copyright Perspective* (2023), 34.

⁵⁵ Kempas T, *Artificiell Intelligens och immaterialrätt i Sverige och EU* (Norstedts juridik 2023). P. 158, 172

⁵⁶ Nantheera Anantrasirichai and David Bull, *Artificial Intelligence in the Creative Industries: A Review*. (2021) 55 *Artif. Intell. Rev.* 589.

can produce music that captures a vocal style, a tone, melody and rhythm for example. Artificial Intelligence also has the ability to modify songs that already exist. Many systems that generate music use networks that rely on already existing musical works. To be able to create new music, the system searches for patterns in chords. This method can however vary between different AI systems, some systems rely on the input data, while other systems might use principles from music theory.⁵⁷

3.2 DSM Directive art 4 , Text and data mining

The DSM Directive wants to ensure that the internal market is functional for copyright law in today's digital environment, where it is important to maintain a good level of protection for rightsholders, while stimulating innovation and creativity.⁵⁸ There are two exceptions in the DSM Directive, which can be found in article 3 and 4. These exemptions permits certain text and data mining activities. TDM activities are activities like acquiring and securing data for analysing or processing to generate knowledge.⁵⁹ Text and data mining starts by getting access to the content, then copying, or extracting this content, mining the data to discover patterns to gain knowledge.⁶⁰ The DSM Directive explains that text and data mining (TDM) refers to technologies that allow computers to automatically analyse digital information, including things like images or audio.⁶¹ To asses if the training of AI counts as text and data mining (TDM), it is important to examine how closely AI training aligns with typical TDM activities. There is some uncertainty regarding the application of TDM to AI, both in EU and national copyright laws. Because even though TDM and machine learning rely on algorithms that are similar when detecting patterns, they are used for different purposes.⁶²

⁵⁷ Johan Axhamn, 44.

⁵⁸ DSM Directive, Recital 2.

⁵⁹ Kempas T, *Artificiell Intelligens och immaterialrätt i Sverige och EU* (Norstedts juridik 2023). P. 176

⁶⁰ Eleonora Rosati, *Copyright and the Court of Justice of the European Union* (Oxford Scholarship Online 2019), 205.

⁶¹ DSM Directive, .Recital 8.

⁶² Rosati (2019). 201, 199.

The DSM Directive introduces certain exceptions that allow data to be copied and extracted in specific cases. By referring explicitly to the TDM exception in the DSM Directive, the AI Act helps clarify the legal position: it confirms that TDM can be used for training AI, including for creative applications generated by AI systems.⁶³

The objective of the AI Act is to ensure that the internal market functions properly, by creating good conditions for the use and development of artificial intelligence within the Union.⁶⁴ This is achieved by introducing harmonised rules to facilitate development and the utilisation of products and services that incorporates AI.⁶⁵ The AI Act establishes a legal framework and an assurance that AI is being developed in compliance with ethical principles.⁶⁶ The AI Act should contribute to the prevention of harm and discrimination.⁶⁷ The Act specifies that AI should be developed with humans in focus and their interests, meaning that these interests should be considered when considering the purpose of the use.⁶⁸

When training AI models, there is a huge amount of data that is needed, and if a rightsholder has reserved their right properly, consent to use data for AI models must be granted.⁶⁹ The AI Act establishes an obligation to be transparent, which requires AI providers to produce a detailed summary of the content they use to train their AI models. The aim is to help copyright holders in exercising and enforcing their rights.⁷⁰ The AI Act restricts the ability to train AI models on copyright protected material. The Act references to the DSM Directive and its opt-out option, which places a limitation on the use of text and data mining techniques under Article 4 DSM, this suggests that the EU does not intend to permit use of content that is unauthorized during the training phase of AI. The Act emphasises that those who provide high-risk AI

⁶³ The AI Act, Recital 105.

⁶⁴ Ibid, Recital 6, 9, 81.

⁶⁵ Ibid, Recital 6, 9.

⁶⁶ Ibid, Recital 1.

⁶⁷ Ibid, Recital 2.

⁶⁸ Ibid, Recital 1.

⁶⁹ Ibid, Recital 105.

⁷⁰ The AI Act, Article 53.1 (a) and (d) and Recital 107.

systems need to respect intellectual property rights in accordance with national and union law.⁷¹

Like mentioned, there are text and data mining exemptions that are found in Article 4 of the DSM Directive that are broadly applied.⁷² Article 4 requires member states to make exceptions to copyright for reproduction and extraction of works, if they are lawfully accessible and used for text and data mining. Reproduction and extractions can be made as long as it is necessary to carry out TDM activities. If the rightholder has not reserved their rights explicitly.⁷³ There are conditions to the application of Article 4, the material has to be legally assessed. It is clarified in Recital 18 of the Directive that rightholders are allowed to license uses of their work that falls outside of the mandatory TDM exceptions for scientific research. Lawful access can include content that is publicly available online.⁷⁴ Situations where rightholders content through licensing can create problems when it comes to AI. When rightholders use licences, it may be difficult to identify who needs to grant permission to use the content.⁷⁵ As mentioned, rightholders should reserve their right in an appropriate manner if they wish to make reservations in relations to text and data mining. There is no definition of what counts as appropriate, but it is generally understood that they should be made through technical means. This preference stems from case law, the CJEU has emphasized the difficulty to determine whether a rightholder intends to prohibit a use otherwise.⁷⁶ This means that the rightholders database should be capable of interacting with the text and data mining tools that a third party uses. Rightholders do not need to adopt elaborate technical measures, using terms and conditions on websites is enough.⁷⁷ The ability rightholders have to reserve their right restricts the impact of Article 4 DSM, in particular in the music industry, as music streaming platforms often prohibit text and data mining activities through their terms and conditions.

⁷¹ Article 25 (5) AI Act

⁷² Rosati (2019), 200.

⁷³ DSM Directive, Article 4.

⁷⁴ Football Association Premier League and Others, para 168.

⁷⁵ Rosati (2019), 208.

⁷⁶ Case C-392/19 VG Bild-Kunst v Stiftung Preußischer Kulturbesitz (2021), para 46.

⁷⁷ DSM Directive, Recital 18.

The exceptions and limitations that exist in the DSM directive want to achieve a balance between the users and the rightsholders.⁷⁸ It is reasonable that rightsholders are allowed to opt out of permitting TDM activities, without having to permit individual requests which are usually necessary for the use of other copyright protected material. Independent musicians might have a harder time with this as they often distribute their music via personal websites. It should be enough to use terms and conditions on a website, but AI usually have a hard time with recognising whether a site is subject to contractual limitations or not. Article 4 specifies that data that is obtained through text and data mining may be stored only as long as it is necessary.⁷⁹ This means that data must be deleted once the TDM process is completed, which is specified in Article 4 of the DSM directive.

However, as the DSM Directive remains relatively recent, there is still uncertainty, particularly regarding works obtained before the TDM exception came into effect, which may still be regarded as infringing intellectual property. Furthermore, the Directive only permits acts of reproduction, which significantly limits its applicability to AI-generated music.

In addition to the opt-out mechanism that is available, there is also a requirement called “lawful access” criterion. This criterion sets out that rightsholders’ works can only be used for AI training if the user has lawful access to the content.⁸⁰ The lawful access requirement helps to further strengthen the rightsholders’ positions by ensuring that only legitimately obtained content may be used.⁸¹ An example of lawful access is that it is possible for rightsholders to use a principle of territoriality of copyright, which can be seen as a limitation when enforcing copyright but can be beneficial when making contractual negotiations.⁸² This restriction can limit the access for a user to, for example, Sweden. This means that if a project is a collaboration with partners from another country, those partners will need to go to Sweden,

⁷⁸ DSM Directive, Recital 6.

⁷⁹ Case C-433/20, *Austro Mechana* (2022) para 16-18.

⁸⁰ Szkalej, Kacper, *The Paradox of Lawful Text and Data Mining? Some Experiences from the Research Sector and Where We (Should) Go from Here* answer, 312.

⁸¹ *Ibid.*

⁸² Szkalej, Kacper, *Copyright in the Age of Access to Legal Digital Content. A Study of EU Copyright Law in the Context of Consumptive Use of Protected Content* (n 12) 84-87.

unless they obtain their own license that can apply to the territory of their own country.⁸³ From a rightsholders perspective, the lawful access criterion can be valuable when balancing interests between protecting creators and enabling technological innovation.

3.3 Temporary acts of reproduction

An instant reproduction means that work that is used digitally often results in instant copies on different servers during the transferring of data, which is considered a copyright infringement. However, they are necessary.⁸⁴ This issue was addressed by introducing Article 5(1) InfoSoc Directive, which deals with temporary acts of reproduction, which are mentioned in Article 2 InfoSoc Directive. Temporary acts of reproduction that are transient are exempt, if they enable “a lawful use of a work that does not have an independent economic value” or if they enable “a transmission in a network between third parties by an intermediary”⁸⁵ If the conditions are met, the Article covers actions that permit browsing, as long as the information is not altered or interfere with any legal use.⁸⁶ It has been ruled by the CJEU that temporary copies that emerge during data-gathering can be supported, if they are transient and have no independent purpose to the process.⁸⁷ The reproduction has to be necessary and part of the technological process to function properly.⁸⁸ If a reproduction is necessary, it can be permitted when training AI if it has been made during the training.⁸⁹ Because when producing musical works, reproductions are essential during the training of AI. Training

⁸³ Szkalej, Kacper, *The Paradox of Lawful Text and Data Mining? Some Experiences from the Research Sector and Where We (Should) Go from Here* answer, 313.

⁸⁴ Kempas, 184.

⁸⁵ InfoSoc Directive, Article 5 (1).

⁸⁶ InfoSoc Directive, Recital 33.

⁸⁷ Case C-360/13, *Public Relations Consultants Association Ltd v Newspaper Licensing Agency Ltd* [2014] para 43.

⁸⁸ Case C-302/10, *Infopaq International A/S v Danske Dagblades Forening (Infopaq II)* (2012) para 29-39.

⁸⁹ Kempas, 185.

is therefore necessary in that case, as the more data that is used to train AI on, the better it can perform.⁹⁰

A reproduction may not exceed the required time that the procedure needs to function properly, the procedure also needs to be removed automatically when it is no longer needed.⁹¹ Case C-5/08 Infopaq International A/S is a case that is relevant. In this case, Infopaq extracted and printed articles from publishers. During the data capture process, newspaper publications were manually registered in a database, then scanned to create TIFF files. These files were deleted after being saved as text files. The files were then processed to find search words and snippets, lastly this was printed out as a cover sheet.⁹² The process of capturing data are similar to the process of machine learning.⁹³ The court found that, in this case, the cover page that was printed out was not transient, which meant it counts as a reproduction according to article 2, InfoSoc.⁹⁴ This implies that many reproductions that are carried out during machine learning cannot be defined as transient under Article 5(1) of the InfoSoc Directive.⁹⁵ This is particularly clear when AI generated content, known as outputs, for example music, are clearly influenced by the input data.⁹⁶ This can become an even bigger issue if AI companies are not transparent with how or if they use copyright protected materials. And even if a reproduction is seen as transient, it need to be lawful as well, meaning that the rightsholders consent is needed.⁹⁷

The CJEU ruled that temporary acts of reproduction that are obtained from streaming websites that are not authorised and then made on a multimedia player is not allowed.⁹⁸ Therefore, it can be difficult to determine whether reproductions that are made during the training process of AI is lawful or not,

⁹⁰ Christophe Geiger, "Elaborating a Human Rights friendly Copyright Framework for Generative AI" (2024). 8, 23.

⁹¹ Case C-5/08 Infopaq International A/S para 62-63.

⁹² Case C-5/08 Infopaq, 13-2.

⁹³ Thomas Margoni, Artificial Intelligence, Machine Learning and EU Copyright Law: Who Owns AI?. (2018) CREATe Working Paper 16.

⁹⁴ Infopaq, para 70.

⁹⁵ European Commission, Directorate-General for the Internal Market and Services, Jean-Paul Triaille, Jerome de Meeûs d'Argenteuil & Amelie de Francquen, Study on the Legal Framework of Text and Data Mining (TDM) (Publications Office 2014) 46.

⁹⁶ C-360/13 Public Relations Consultants Association, para 45-52.

⁹⁷ InfoSoc Directive, Recital 33.

⁹⁸ C-527/15, Stichting Brein v Jack Frederik Wullems, par 69-72.

especially when it comes to music. The systems use copied material and generate new music based on the material.⁹⁹ A temporary reproduction should not have any independent economic value, which is not being fulfilled if the reproduction makes profit unlawfully. It might be acceptable with a small profit, as long as it is proportional to the efficiency gains.¹⁰⁰

To summarize, like mentioned, temporary copies that are created during machine learning can be considered transient if they are deleted after processing. But the exemption in Article 5(1) of the InfoSoc Directive still faces challenges when it comes to justifying reproductions that are made during the training of AI. The CJEU emphasizes that the criterion for the exemption needs to be applied strictly, so that such temporary reproductions are unlikely to be allowed under Article 5(1).¹⁰¹

3.4 Summary

This chapter has examined the copyright framework that can be applied to the training of AI, with focus on how exceptions to copyright deal with AI. Copyright exceptions aim to balance the interests of rightsholders and innovation. In the context of AI, two exceptions were in focus, the text and data mining exception under Article 4 of the DSM Directive, and the exception for temporary reproduction under Article 5 of the InfoSoc Directive.

Artificial intelligence refers to a machine that can approximate human behavior, with very little human involvement. WIPO defines AI as a software that is capable of performing tasks that typically require humans. AI collect data to interpret it and improve it through machine learning by recognizing patterns in for example texts or audio. The training requires large amounts of data, sometimes including copyright protected material such as music or phonograms. The copying of these works can constitute copyright infringement under Article 2 of the InfoSoc Directive.

⁹⁹ Axhamn 55.

¹⁰⁰ Infopaq, para 50-54, para 51.

¹⁰¹ Football Association Premier League Ltd and Others v QC Leisure and Others (C-403/08) and Karen Murphy v Media Protection Services Ltd (C429/08) [2011], para 162.

The DSM Directive wants to modernize copyright law in today's digital era, innovation should be promoted at the same time as rightsholders are protected. The DSM Directive introduces two exceptions for text and data mining in Articles 3 and 4, but this chapter focused on Article 4. Article 4 DSM permits text and data mining on works that are lawfully accessible, unless rightsholders explicitly opt out, through for example terms and conditions. The opt-out ability limits AI's access to music content, because many platforms prohibit text and mining activities. Even though the DSM Directive provides a mechanism for lawful AI training, its restriction to acts of reproduction create limitations for AI generated music.

The AI Act wants to ensure that the internal market can function properly by setting harmonized rules for the development of AI and its use. Emphasizing that AI needs to prevent harm and discrimination. The AI Act introduces the obligation of transparency, which requires AI developers to disclose detailed summaries of training data, to protect the rightsholders. The AI Act also supports the opt-out mechanism that can be found in the DSM Directive, reinforcing the fact that unauthorized use of content that is copyright protected when training AI is not permitted.

Lastly, this chapter examines if temporary reproductions during the training process of AI can be justified under Article 5(1) InfoSoc. This Article provides an exception for transient and incidental acts of reproduction. The reason why this is an issue is because when training AI, like when producing music, this involves reproducing copyright protected material. An example is the case C-5/08 Infopaq where acts of copying and reproduction, including temporary, were considered an infringement under Article 2 InfoSoc, because they did not count as transient. Outputs that are AI generated are very influenced by the input, which makes it hard to determine if the reproduction can be considered transient. It can also be difficult to determine whether the copyright protected content was used with permission from the rightsholder. Article 5(1) permits temporary reproductions, but it can still be difficult to protect AI outputs, as CJEU has laid out strict criteria and AI outputs are often not protected under the exemption.

Copyright exceptions do not fully allow unrestricted AI training. The exceptions include safeguards to protect rightsholder's interests, through the lawful access criterion and opt-out condition under the TDM exceptions. This chapter highlighted how the legal framework limits the use of copyright protected material when AI is involved. The framework seeks to strike a balance between protecting intellectual property rights while encouraging innovation.

4. Does Copyright protect creators enough?

4.1 The Exclusive rights

The exclusive rights that are set out in the InfoSoc Directive, the reproduction right and the right of communication to the public, are meant to reflect the fundamental objectives of copyright protection in the EU. Copyright aims to protect and reward creativity, and by granting creators exclusive rights over their works, creators are encouraged to produce content.¹⁰² The exclusive rights giving creators and performers means to control the reproduction of their work, aligns with the InfoSoc Directive's goal of ensuring a balance between the interest of rightsholders and users.¹⁰³

Before the InfoSoc Directive was introduced to harmonise key rights and exceptions, copyright laws led to uncertainty as the national copyright laws were different from one another.¹⁰⁴ The reproduction and communication rights express the commitment that EU has to protect intellectual property, and to ensure that creators can succeed in the digital age.¹⁰⁵

4.2 Are the exceptions in DSM too broad or narrow?

The Directive aims for the legislation to be harmonized to support a well-functioning internal market, while also fostering creativity and innovation of digital content. Because new technologies are being developed, there is a use for legislation that is adaptable to not hinder progress.¹⁰⁶

The Directive addresses development by complementing EU copyright framework, while also maintaining the protection of rightsholders.¹⁰⁷

¹⁰² InfoSoc Directive Recital 4.

¹⁰³ Ibid, Recital 3, 4..

¹⁰⁴ Ibid, Recital 1, 2.

¹⁰⁵ Ibid, Recital 9.

¹⁰⁶ Ibid, Recital 2, 3.

¹⁰⁷ DSM Directive, Recital 3.

The Directive wants to achieve a fair use of interests between the users and the rightsholders. The exceptions and limitations are applicable in special cases, they do not conflict with any normal use of a work and do not infringe on the interest of the rightsholder.¹⁰⁸ The protection in the InfoSoc Directive is still important however to ensure protection of rights of rightsholders.¹⁰⁹ Today's digitalization has led to easier access for consumers to copyright protected content. Copyright needs to be adapted to the fact that limitations and exceptions are harmonized.¹¹⁰ The exception in the DSM Directive excludes the exclusive right of reproduction, according to the InfoSoc Directive Article 2(1). Text and data mining is defined in the DSM Directive as a technique that is used to analyze digital text and data to generate information based on it, such as patterns and correlations, according to Article 2(2) in the DSM Directive.¹¹¹ The definition in the Directive can be seen as broad, as it captures most of the activities that uses technology to analyze information. The Directive covers a big area within AI, making the definition quite future-proof.¹¹² However, there are text and data mining that are based on data that is not copyright protected. The DSM Directive states that Article 5(1) of the Directive should still apply to TDM activities where the copying goes outside the scope of the exception in Article 5 (1) InfoSoc Directive.¹¹³ The definition in the DSM Directive is broad and covers a wide range of data technologies that analyzes digital information. Including a lot of modern forms of AI.¹¹⁴

Article 4 in the DSM Directive has the “opt-out” option, which, as mentioned in chapter 3, which means that rightsholders can refuse others to use their copyright protected work for text and data mining. This option can narrow down the amount of work that is available, if many rightsholders decide to opt out.¹¹⁵ Since the provision in Article 4 includes an opt out option, this

¹⁰⁸ Ibid., Recital 6.

¹⁰⁹ Ibid., Recital 7.

¹¹⁰ DSM Proposal, p.2.

¹¹¹ DSM Directive, Recital 8.

¹¹² Margoni, Thomas and Kretschmer, Martin, A Deeper Look into the EU Text and Data Mining Exceptions: Harmonisation, Data Ownership, and the Future of Technology (July 14, 2021). *GRUR International*, 71(8), 2022, p. 687.

¹¹³ DSM Directive, Recital 9.

¹¹⁴ Margoni and Kretschmer (2022) p.688-689.

¹¹⁵ Ibid. 686

gives the rightsholder an opportunity to restrict use, which can risk the effectiveness of the provision.¹¹⁶

To summarize, Article 4 allows users to perform text and data mining, and does not limit the purpose. However, rightsholders can opt out and reserve their rights, which means that their work can not be used for TDM activities. The regulation wants to balance the use of AI and innovation, but the opt-out option can limit the effectiveness and openness of Article 4. Which can create tension between copyright protection and innovation.

To determine whether the provisions in the DSM Directive are too broad or narrow, there are different ways to look at it. There are no restrictions when it comes to users or purpose, meaning that any user can use works for TDM activities, including AI development. This can lead to a wide use of copyright protected material without consent. This can weaken the control that rightsholders have over their work and how it is used, unless they opt-out effectively. This can be considered too broad of a provision.

However, there is the opt-out clause, which means that rightsholders reserve their rights and prohibit the use of their work for TDM purposes. Which can result in that works become unavailable for AI training. When comparing Article 3 and Article 4, Article 3 does not allow opt-out and is mandatory, while Article 4's potential is conditional. The opt-out mechanism can be considered very narrow from a developmental point of view.

Article 4 is broad in its scope when it comes to users and purpose, but narrow in effect, because of the opt out option.

4.3 How effective is opt out?

Since late 2022 when AI systems such as ChatGPT was launched, there has been a widespread creation of music, texts and images created by AI. This sparked debates about how copyright law should adapt and about how AI

¹¹⁶ Cristophe Geiger, The missing Goal-Scorers in the Artificial intelligence Team: Of Big Data. The Fundamental right to Research and the failed Text and Data Mining Limitations in the DSM Directive. Apphen aan den Rijn, Kluwer Law International. (2021).

impacts copyright law.¹¹⁷ AI systems rely on large datasets that often include copyright protected works, which can raise concerns about whether unlicensed text and data mining can potentially lead to copyright infringement.¹¹⁸ Obtaining individual licences is quite impractical due to the large amount of data that is needed, as well as the difficulty of identifying rightsholders. The EU addresses this issue in the Directive 2019/790 (DSM) by creating two TDM exceptions. Article 3, for scientific research, and as previously mentioned, Article 4 for general TDM, as long as the work is lawfully accessed and not opted out by the rightsholder under Article 4(3). As mentioned in chapter 3, Article 4 contains an opt-out mechanism, and evaluates whether the opt-out mechanism in Article 4(3) offers a fair veto right, or if it is a barrier to AI innovation.

Machine learning is essential for AI development, and to support this there needs to be clear and broad exceptions for text and data mining.¹¹⁹

Article 4 of the Copyright in the Digital Single Market Directive (CDSMD, also known as DSM) seeks to harmonize text and data mining rules across EU and create a standardized legal framework to foster innovation and provide a legal certainty for text and data mining activities.¹²⁰

However, Recital 18 DSM clarifies that Article 4 should not undermine the licensing rights of the rightsholders. The goal is to balance innovation and copyright protection, but there are doubts about the effectiveness of the framework of TDM provides exceptions that are useful in practice, since there are a lot of uncertainties about what cases are covered and the requirements.¹²¹

¹¹⁷ N Maamar. Urheberrechtliche Fragen beim Einsatz von generativen KI-Systemen. [*Copyright issues in the use of generative AI systems*], (2023) Zeitschrift für Urheber- und Medienrecht [*Journal for Copyright and Media Law*], 481.

¹¹⁸ J Nordemann and J Pukas. *Copyright exceptions for AI training data - will there be an international level playing field?*. (2022) 17 Journal of Intellectual Property Law and Practice, 973.

¹¹⁹ C Geiger. *The Missing Goal-Scorers in the Artificial Intelligence Team: Of Big Data, the Fundamental Right to Research and the Failed Text and Data Mining Limitations in the CDSMD Directive*. in M Senftleben, J Poort, M van Eechoud et al. (eds) Intellectual Property and Sports, PIJIP/TLS Research Paper Series, No. 66 (Kluwer International 2021 Alphen aan den Rijn), 383, 385.

¹²⁰ A Dermawan. *Text and data mining exceptions in the development of generative AI models: what the EU member states could learn from the Japanese “nonenjoyment” purposes?*, (2023) The Journal of World Intellectual Property 8.

¹²¹ J Drexel et al. *Artificial Intelligence and Intellectual Property Law Position Statement of the Max Planck Institute for Innovation and Competition of 9 April 2021 on the Current Debate*. (2021) Max Planck Institute for Innovation and Competition Research Paper No. 21-10, 7.

The opt-out provision in Article 4(3) DSM introduces a mechanism that allows rightsholders to reserve their rights and prevent their work from being used in text and data mining processes. This measure aims to protect intellectual property, and has sparked debate regarding its impact on the development of AI within EU.¹²²

The ability to reserve rights through the opt-out mechanism could strengthen the rightsholders negotiating leverage, which can lead to licensing agreements and financial compensation from technology companies. This can help rightsholders assert their rights against AI developers.¹²³ However, the opt-out mechanism risks leading to further market concentration and exploiting creators. There is a risk that large companies might pressure artists into waiving their rights, for example the right to prevent the use of their work for AI training, in exchange for lower compensation. This could lead to an imbalance in power, where large companies gain control and individual artists and rightsholders gets reduced compensation and less control.¹²⁴ In that regard, it is uncertain whether the opt-out mechanism is beneficial for both creators and rightsholders in the long run.

The opt-out mechanism in Article 4(3) DSM has been criticized, as there is a risk that it potentially hinders the development of AI.¹²⁵ Because the right to reserve that rightsholders have could hinder the application of the exceptions that can be found in Article 4 DSM, and weaken its purpose.¹²⁶ If a rightsholders chooses to opt-out, the providers of AI systems will have to obtain a licence if the protected data that is relevant is essential to training the AI system. When authorisation is needed for AI training, this becomes an added cost for the provider of the system in the form of licensing fees. This can effect the AI sector if the costs become too high and reduce the economic potential of licensing content for training that is copyright protected. There is

¹²² A Strowel and R Ducato. *Artificial Intelligence and Text and Data Mining, A Copyright Carol*. in E Rosati (ed.) *The Routledge Handbook of EU Copyright Law* (Routledge 2021 London), 300.

¹²³ J Quintais, *Generative AI, Copyright and the AI Ac.* (09 May 2023).

¹²⁴ Gina Maria Ziaja, *The text and data mining opt-out in Article 4(3) CDSMD: Adequate veto right for rightsholders or a suffocating blanket for European artificial intelligence innovations?*. 454

¹²⁵ *Ibid*, 455.

¹²⁶ E Rosati, *Copyright as an obstacle or an enabler? A European perspective on text and data mining and its role in the development of AI creativity*. (2020) 27 *Asia Pacific Law Review* 198, 215.

a risk that the TDM exception leads to less profit for creative sectors and poor investment in the hightech products, which is not the DSM's intention.¹²⁷ This could also lead to that AI is trained on older or imported data, which might be biased, to avoid licence fees.¹²⁸ An option would be to impose a right to compensation on TDM activities, rather than the opt-out option.¹²⁹ Article 4(3) DSM, might also give smaller enterprises a disadvantage. Big companies have access to large amounts of data to train their AI systems. This means that they have an advantage, because they can use the data they already have available to train more advanced systems. This creates a challenge for small companies as they cannot compete with big companies that are already established.¹³⁰ In this regard, Article 4(3) DSM can rather be seen as an obstacle, more than a promoter of innovation.¹³¹

As mentioned in chapter 3, how and where the reserved rights are need to be clear in order for the opt-out mechanism to be beneficial for rightsholders. The reservation need to be made public and need to be appropriate, for example done through terms and conditions.¹³² If the measures are not effective and appropriate, it might be difficult for users to determine whether a rightsholder intends to reserve their right or not.¹³³

It can be difficult to guarantee that no reservations have been made by a rightsholders when training AI, as AI systems sometimes are trained on pre-prepared datasets. However, a reservation can still apply and exist to lawfully accessible content sourced from its original location for inclusion in a dataset. In that case, there are no clear guidance in Article 4(3) DSM on where a reservation needs to be made to be considered legally effective. Even if a rightsholder opts out in a format that is machine-readable, there is a possibility that the reservation was made at a different location than where the used material was actually aquired, which can cause problems in determining

¹²⁷ Gina Maria Ziaja, *The text and data mining opt-out in Article 4(3) CDSMD: Adequate veto right for rightholders or a suffocating blanket for European artificial intelligence innovations?*. 455.

¹²⁸ Ibid.

¹²⁹ Ibid.

¹³⁰ N Lucchi, *ChatGPT: a case study on copyright challenges for generative artificial intelligence systems*. (2023) *European Journal of Risk Regulation* 1, 12.

¹³¹ Rosati, E, Copyright at the CJEU: Back to the start (of copyright protection), 217.

¹³² DSM Directive, Recital 18.

¹³³ Rosati, 89.

whether the opt-out is enforceable in practice or not.¹³⁴ This is an area which is still uncertain, making the effectiveness of reservations complicated for rightholders.

Another complicated area is whether rightholders are aware when their work is used to train AI or not. If rightholders have no knowledge of their work being used, they cannot opt out, making the opt-out mechanism useless to secure copyright. The Artificial Intelligence Act was introduced by the European Commission, which might lead to rightholders being able to obtain knowledge of their work being used for AI training.¹³⁵ As the AI Act, as mentioned in chapter 3, requires for companies to be transparent with their use of content to train AI.

The aim is to balance rightholders interests, while also supporting innovation and not impact AI innovation negatively. It is uncertain if the opt-out mechanism in Article 4(3) DSM helps to strengthen rightholders position or not, as there is still uncertainties regarding opting out.

To conclude, Article 4(3) DSM offers an opt out mechanism for rightholders to control the use of their work, but the effectiveness of the opt-out option is limited because of its legal uncertainty. The transparency requirement in the AI Act can help enable the opt-out mechanism regarding Article 4(3) DSM. But overall, the effectiveness of opt-out is limited.

4.4 Is copyright effective enough to protect creators in the era of AI?

A question that can rise is if copyright protection is effective enough to protect creators, now that AI has become such a big part of creating content, for example music. As mentioned, rightholders are allowed to opt-out, but if

¹³⁴ J Vesala, *Developing Artificial Intelligence-Based Content Creation: Are EU Copyright and Antitrust Law Fit for Purpose?*. (2023) 54 *IIC-International Review of Intellectual Property and Competition Law* 351, 357.

¹³⁵ Parliament, *Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts*.

they do not, there are conditions in the DSM Directive that allow materials to be used in AI training. In copyright protection law, the conditions are that a work needs to be original and express the author's intellectual creation.¹³⁶ This becomes difficult when AI is involved with minimal human intervention.¹³⁷ The fact that AI generated works, such as music, is not copyright protected might not only be positive. Because AI creations are not protected, this could be negative for companies generating music and selling it, as their work in that case could be used for free.¹³⁸ But there is a bigger challenge in protecting creators' intellectual properties, as there is a lack of consistent standards in copyright, which leads to uncertainties. A creation can for example be protected in one country but not protected in another.¹³⁹ Balancing copyright protection while at the same time encouraging innovation in AI is a challenge. Effective copyright protection needs to be established by addressing issues, such as fair compensation or transparency.¹⁴⁰

Copyright can be denied for AI generated works altogether, or it could be granted to the creator of the program. This leads to a question of whether the law should recognize the programmer or the user of the program as the person arranging for the work to be generated. It is the most logical that the copyright lies with the user, as the user will use the program to create their work, and gain copyright protection for their created content. This is the case with Microsoft Word, for example.¹⁴¹ But with the help of AI, the user can contribute very little and still create content, as AI will do everything almost entirely on its own. With AI, a user barely needs to contribute with any artistic skill, making it unclear whether the content can count as copyright protected work. This is a question that likely needs to be determined on a case-by-case basis.¹⁴²

¹³⁶ (C-5/08) *Infopaq International A/S v Danske Dagbaldes Forening*.

¹³⁷ Andres Guadamuz, *Senior Lecturer in Intellectual Property Law*, University of Sussex, United Kingdom,, 2017.

¹³⁸ *Ibid*.

¹³⁹ Hutson J. The Evolving Role of Copyright Law in the Age of AI-Generated Works. *Journal of Digital Technologies and Law*. 2024;2(4):886-914

¹⁴⁰ *ibid*

¹⁴¹ Andres Guadamuz, *Senior Lecturer in Intellectual Property Law*, University of Sussex, United Kingdom, 2017.

¹⁴² *Nova Productions v Mazooma Games* [2007] EWCA Civ 219, Andres Guadamuz, *Senior Lecturer in Intellectual Property Law*, University of Sussex, United Kingdom, 2017.

As the use of AI is expanding, there is need for a new legal framework to balance the protection of rightsholders and innovation. The current copyright protection revolves around human creativity, which makes it difficult to address works that are AI generated.¹⁴³ Therefore, the legal framework would benefit from being changed to better accommodate AI while still emphasizing that human creativity is important, therefore keeping the core principles.¹⁴⁴ AI should not replace human creations or innovations, but rather assist in them. Seeing AI as a creative tool can help promote co-creation, where AI does not compete with human creativity, but rather extends it.¹⁴⁵

4.5 Summary

The DSM Directive aims to harmonize copyright law across the EU in a growing digital environment. It seeks to balance innovation in Artificial intelligence and the rights of copyright holders. The Directive introduces exceptions for text and data mining which are relevant to AI. Article 4 in the DSM Directive permits text and data mining for general purposes, as long as the material is lawfully accessed, where the rightsholder has not opted out. The scope of Article 4 is broad, but the opt-out mechanism in Article 4(3) narrows the practical impact. Rightsholders can reserve their rights and thereby exclude their work from text and data mining activities. While this empowers rightsholders, it also poses a risk of hindering AI innovation. The transparency obligation presented in the AI Act may enhance the effectiveness of the opt-out mechanism, as it requires AI providers to be transparent with their use of copyright protected training data. This can help rightsholders be aware of when their work is used. However, the legal framework would benefit from being updated.

¹⁴³ Ibid.

¹⁴⁴ Geiger, C. (2024). Elaborating a Human Rights friendly Copyright Framework for Generative AI. *International Review for Intellectual Property and Competition Law*, 55(7), 1129–1165

¹⁴⁵ Hutson J. *The Evolving Role of Copyright Law in the Age of AI-Generated Works*. *Journal of Digital Technologies and Law*. 2024;2(4):886-914.

5. Summary and conclusions

To summarize and conclude, this thesis has examined whether EU copyright law effectively protects creators in the age of AI. As AI technology develops, questions arise about whether the use of AI can infringe on copyright or not. The thesis discusses the InfoSoc Directive, which contains reproduction rights and right to communicate to the public, which are rights that are granted to rightsholders. And the DSM Directive, that contains Article 4 which governs text and data mining, which is relevant when discussing AI. As well as the opt-out mechanism, which is a mechanism that rightsholders can use when they do not want their work used for text and data mining activities.

As shown by this, there are provisions in place to protect rightsholders, but this thesis has examined whether these provisions are enough by asking the question “To what extent is copyright law capable of achieving the objective of protecting the interests of music artists in the era of AI?”.

The thesis comes to the conclusion that a legal uncertainty remains regarding copyright protection in the era of AI. The current legal framework is based on human authorship, which makes it difficult to apply to AI generated content with minimal human intervention. The use of AI in creative fields like music is growing, and the legal framework needs to be updated to ensure better transparency, fair compensation and a better balance between human creativity and AI.

The DSM Directive attempts to modernize the law in the digital age, but the effectiveness of the opt-out mechanism remains limited. To ensure a balance between innovation and the creator’s rights, it would be beneficial to update the legal framework.

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