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Blockchain and Collective Rights Management of Copyright and Related Rights at the Global Level

The Case of the Music Industry

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List of Abbreviations

Abs.	paragraph (Absatz)
AFMA	Anstalt für musikalisches Aufführungsrecht
AKM	Gesellschaft der Autoren, Komponisten und Musikverleger
AMRE	Anstalt für mechanische Rechte
AMMRE	Anstalt für mechanisch-musikalische Rechte
ARESA	Anglo-American Rights European Service Agency
art.	article(s)
ASCAP	American Society of Composers, Authors and Publishers
Berne Convention	— Berne Convention for the Protection of Literary and Artistic Works
BMI	Broadcast Music Incorporated
c.	chapter
CA	California
CEO	Chief Executive Officer
ch.	chapter
CISAC	Confédération internationale des Sociétés des auteurs et compositeurs
CMO(s)	collective management organisation(s)
COALA	Coalition of Automated Legal Applications
COALA IP	Coalition of Automated Legal Applications – Intellectual Property
CRM	collective rights management
CRM Directive	— Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online uses in the internal market
CT	Connecticut
CTO	Chief Technology Officer
ed(s)	editor(s)
etc.	and so forth (et cetera)
DDEX	Digital Data Exchange
DSR	Digital Sales Report Message Suite Standard
EU	European Union
ff.	and the following (folio)
GATT	General Agreement on Trade and Tariffs
GDT	Genossenschaft deutscher Tonsetzer

GEMA	Gesellschaft für musikalische Aufführungs- und mechanische Vervielfältigungsrechte
i.e.	that is (id est)
IP	intellectual property
MA	Massachusetts
MCPS	Mechanical-Copyright Protection Society
MLC	Music Licensing Collective
MMA	Music Modernization Act
Nr.	number (Nummer)
NY	New York
old GEMA	Genossenschaft zur Verwertung musikalischer Aufführungsrechte
p. / pp.	page(s)
par.	paragraph
PPL	Phonographic Performance Limited
Pub.L.	public law
PRS	Performing Right Society
RIAA	Recording Industry Association of America
Rome Convention	International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations
RRAs	reciprocal representation agreements
s.	section
SACD	Société des auteurs et compositeurs dramatiques
SACEM	Société des auteurs, compositeurs et éditeurs de musique
sec.	section
SESAC	Society of European Stage Authors and Composers
SGAE	*Sociedad General de Autores y Editores*
Stat.	Statutes at Large
TRIPS Agreement	Agreement on Trade-Related Aspects of Intellectual Property Rights
UK	United Kingdom
US	United States
WCT	WIPO Copyright Treaty
WIPO	World Intellectual Property Organization
WPPT	WIPO Performances and Phonograms Treaty
WTO	World Trade Organization

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Statutes, 1909 Copyright Act: An Act to Amend and Consolidate the Acts Respecting Copyright, Pub.L. 60-349, 35 Stat. 1075 (1909).

Introduction

In 2008, the technology of blockchain was introduced to the public. Only on paper at first but also in practice a few months later. Many ideas have emerged since of how it could transform business. Blockchain has often been described as revolutionary or disruptive and compared to the Internet regarding its future impact. The most widely discussed topics have been enabling transactions between parties without having to trust intermediaries such as banks, guaranteeing confidentiality when transacting, and ensuring that the transaction data could never be altered.[1] Blockchain has been said to bring about more efficiency, transparency, security, and inclusion.[2] The discussion has focused mostly on the financial sector, but later turned to the creative industries as well, especially the music industry.

The music sector has undergone a significant change since the new business model of streaming became successful. The consumption of music content via streaming has been rising in recent years and so have the profits of record labels,[3] but there has been criticism that the artists, without whose work none of the businesses would exist in the first place, receive too small a share of that income.[4] The music industry is commonly described as being full of intermediaries who all take a share of the revenue – e.g., music publishers, record labels or the streaming platforms such as Spotify or Pandora –, leaving little for the creators. When blockchain entered the scene, there were ideas that artists could become more independent of the intermediaries and receive more compensation for their music, as they could decide about the conditions under which they provide their music to listeners through blockchain-based applications.[5]

1 See DE FILIPPI PRIMAVERA / WRIGHT AARON, *Blockchain and the Law: The Rule of Code*, Cambridge, MA: Harvard University Press, 2018, p. 3.

2 See TAPSCOTT DON / TAPSCOTT ALEX, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, New York: Portfolio/Penguin, 2016, pp. 5-6.

3 SWENEY MARK, "'Odds Are Against You': The Problem With the Music Streaming Boom' (2 October 2021) *The Guardian*.

4 TOWSE RUTH, 'The Economic Effects of Digitization on the Administration of Musical Copyrights' (2013) *Review of Economic Research on Copyright Issues*, pp. 55-67, at pp. 65-66.

5 TAPSCOTT/TAPSCOTT, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, pp. 236-237.

Nowadays, music content is being licensed by the streaming platforms so that they can provide access to consumers. There are usually multiple rights holders for each musical work and sound recording, such as composers, songwriters or performers, and all of them need to provide their consent. However, contacting each rights holder individually would be inefficient and would practically ruin the market. It would also be impossible for the rights holders to enforce their rights on their own as they could never know about every use of their works, e.g., whether and how much radios over the world are playing their songs. Therefore, at the end of the eighteenth century, entities were established that helped artists enforce their rights and at the same time lowered the transaction costs of the licensing process. Such entities represent a significant number of rights holders and a sufficiently large repertoire, so it makes sense for users to purchase licences from them. These licensing entities are called collective management organisations (CMOs) and, as the name suggests, their main activity is the collective management of copyright and related rights (CRM).

If blockchain were used to establish a platform where rights holders could directly reach customers, what would this mean for CMOs? Some intellectual property, technology, media and entertainment analysts suggest that CMOs would become obsolete.[6] Others note that this would probably not happen and that the disintermediation potential of blockchain might have been exaggerated.[7] In both cases, the argumentation used is linear-causal. Either it is argued that, because blockchain will enable those who offer musical works to directly transact with those who desire the works, there will be no more need for intermediaries.[8] Or, with an opposite outcome, it is argued that the data and the transactions on blockchain will still need to be verified and therefore intermediaries fulfilling this task will still be needed.[9] Observers of the debate about the potential of blockchain are left with doubts about what to expect in the future and what to prepare for. This thesis will provide deeper insights into the issue to better understand how the emergence of blockchain

6 HOWARD GEORGE, 'What the Music Business Could Learn from the Internet of Things' (27 September 2015) *Forbes*.

7 BODÓ BALÁZS / GERVAIS DANIEL / QUINTAIS JOÃO PEDRO, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?' (2018) *International Journal of Law and Information Technology*, pp. 311-336, at p. 318; O'DAIR MARCUS / BEAVEN ZULEIKA / NEILSON DAVID / OSBORNE RICHARD / PACIFICO PAUL, 'Music on the Blockchain', Middlesex University, Blockchain For Creative Industries Research Cluster, Report Nº 1 (July 2016), p. 19.

8 HOWARD, 'What the Music Business Could Learn from the Internet of Things'.

9 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 318.

is affecting the music industry and how it might develop further. First, the question will be tackled whether CMOs can become obsolete. In order to answer this question, the functions of CMOs will be studied and it will be assessed whether blockchain-based alternatives to current CRM would be able to fulfill the same functions. Second, the broader question of how blockchain will affect the music industry in general will be addressed to assess whether blockchain is on the way to disrupt the music industry. This does not mean that the outcome of this thesis is a prediction of the future. To the contrary, it will be explained why it is not possible to do that.

Linear-causal reasoning will not be used in this thesis when dealing with the question of how blockchain will affect CRM, because there are many groups of stakeholders that can influence the outcome, such as the developers of blockchain-based applications, music industry intermediaries, creators of music, or CMOs. The complexity of the issue is so high that it is not possible to identify all (probably hundreds or thousands of) cause-and-effect relationships, put them into the correct order, and provide the answer to that question. Instead, Luhmann's systems theory will be used to address the question. It is a theory of society that considers society to be composed of systems, where each system has its own function, code, internal processes, structures, and boundaries that set it apart from the environment. Systems are autopoietic, as they produce new elements out of their own elements. The basic element of each system is communication, and only communication can produce further communication. It can be said that Luhmann viewed society as fragmented into a plurality of autonomous discourses.[10] Those are autonomous because each system creates its own construct of reality according to its internal code and programs. The emergence of blockchain can be viewed as an event in the environment of the systems, to which each system reacts in its own way. Analysing the reactions of each system separately allows for a comparison of these reactions and an assessment of whether the reactions of the systems converge or diverge. The analysis of the multiple autonomous discourses with the help of Luhmann's systems theory can thus be used as a solid basis for answering the question of where the overall development of the music industry after the introduction of blockchain might be headed.

10 TEUBNER GUNTHER, 'How the Law Thinks: Toward a Constructivist Epistemology of Law' (1989) *Law & Society Review*, pp. 727-757, at p. 738. Discourse being understood in the sense of Foucault as an "anonymous, impersonal, intention-free chain of linguistic events", as described in TEUBNER, 'How the Law Thinks: Toward a Constructivist Epistemology of Law', p. 735.

To sum up, this thesis will provide "a theoretical framework for understanding the impact of blockchain technology" that is often lacking in the legal literature about blockchain and copyright[11]. In Chapter 1, the history of copyright and collective rights management will be studied in order to clarify the rationale behind it. This is important for assessing whether the emergence of blockchain and its application in the music industry might challenge the rationale of the relevant legal norms. What blockchain is and how it can be deployed in the copyright and CRM domain will be discussed in Chapter 2. This discussion constitutes the basis for Chapter 3, where Luhmann's systems theory will be presented to provide the theoretical framework, which is then applied to study the impact of blockchain on CRM. The concluding chapter will summarise the findings.

11 LANE AARON M. / PLATZ CHRISTINA, 'The Other Side of the Ledger: Blockchain Makes a New Entry in the Historical Record of Copyright Law and Technology' (2021) *European Intellectual Property Review*, pp. 83-97, at p. 84.

Chapter 1:
The Path of Collective Rights Management

CRM is a phenomenon that emerged in Europe in the eighteenth and nineteenth centuries. In this section, the key circumstances that contributed to its emergence will be described. At that time, society in Europe had turned into a functionally differentiated society. This type of society replaced the previous stratified society where each member had a certain position based on the strata they belonged to. A functionally differentiated society consists of distinct subsystems that specialise and institutionalise functions.[12] In this framework, the system of society is considered to be composed of subsystems, each of which has a special function that cannot be substituted by any other system.

In this case, one of the key processes of differentiation for the emergence of CRM was that of art, which meant the establishment of the system of art as an autonomous system. Part of this process was that artists no longer had to follow the instructions of the commissioner (patron), which led to the creation of a piece that was given meaning solely in the context for which it was created, for example in a religious context.[13] Since the fourteenth century, artworks have achieved independence from this context and came to be evaluated solely according to the inherent artistic skill (although evaluation was still carried out by the patrons).[14] Furthermore, the way to the differentiation of art included the transition from the system of patronage to the market system towards the end of the seventeenth century.[15] In the eighteenth century, a civil society emerged whose members were interested in artwork and could also

12 LUHMANN NIKLAS, 'Differentiation of Society' (1977) *Canadian Journal of Sociology / Cahiers canadiens de sociologie*, pp. 29–53, at pp. 35–36.

13 LUHMANN NIKLAS, *Art as a Social System*, Stanford, CA: Stanford University Press, 2000, pp. 159–160.

14 LUHMANN, *Art as a Social System*, p. 160.

15 LUHMANN, *Art as a Social System*, pp. 162–164.

afford it.[16] Art started being bought, stocked and eventually resold,[17] and thus it "became a business that involved risk,"[18] especially for the publisher or gallerist who bought artworks from artists with the expectation of finding buyers for them on the market.[19] This situation gradually freed evaluation of art from the "correct" criteria of some external experts, as the market did not care about it.[20] Art established its own assessment criteria.[21] The process of functional differentiation of art was completed after 1800.[22] The first artistic style of that new era was romanticism.[23] Since its differentiation, art is no longer seen as related to the state, society or any worldly affairs; it is a system where interactions between artists, experts and consumers take place.[24]

The development towards the differentiation of art can be spotted in the development of music as well. In the Middle Ages, music was commissioned by patrons, usually a church or a court, and served a certain liturgical or political function.[25] Since the fourteenth century, the growing economic power of Italian cities and their rivalry created a market for artwork that could be independent of these functions.[26] Composers and performers gained more freedom for their creative work, although it was still the patron who judged the work.[27] Towards the end of the seventeenth century, it was no longer noble status but expertise in art that defined a patron.[28] The transition from patronage to market was significant for musicians in the sense that under patronage, the musician's audience used to be a narrow group of possibly cultivated people, whereas in a market setting the audience would become broader but also

16 GRABER CHRISTOPH BEAT, Zwischen Geist und Geld: Interferenzen von Kunst und Wirtschaft aus rechtlicher Sicht, Baden-Baden: Nomos Verlagsgesellschaft, 1994, pp. 54-55.

17 LUHMANN, *Art as a Social System,* p. 163.

18 LUHMANN, *Art as a Social System,* p. 164.

19 For a description of the newly established market for visual art see GRABER, *Zwischen Geist und Geld: Interferenzen von Kunst und Wirtschaft aus rechtlicher Sicht*, pp. 55-56.

20 LUHMANN, *Art as a Social System*, pp. 164-165.

21 LUHMANN, *Art as a Social System*, p. 163.

22 LUHMANN, *Art as a Social System*, pp. 166-167.

23 LUHMANN, *Art as a Social System*, p. 166.

24 LUHMANN, *Art as a Social System*, pp. 166-167.

25 SINNREICH ARAM, 'Music, Copyright and Technology' (2019) *International Journal of Communication*, pp. 422-439, at p. 426.

26 LUHMANN, *Art as a Social System*, p. 160; SINNREICH, 'Music, Copyright and Technology', p. 426.

27 LUHMANN, *Art as a Social System*, p. 160; SINNREICH, 'Music, Copyright and Technology', p. 426.

28 LUHMANN, *Art as a Social System*, p. 164.

more unpredictable.[29] More risk started being involved in the ventures. It was the composer who took the risk of introducing a musical work to the public and who had to find a way to get remunerated, if that was his aim. Eventually, law provided composers with a new title that enabled them to sell their works.

Before going into a more thorough discussion of how the system of law interacted with the art market, the importance of technological tools in that process should be mentioned. Before the invention of the printing press, composers depended on live performances to reach audiences. The market was thus primarily local.[30] The expansion of the printing press in the early sixteenth century helped establish a special position for the composers in the field of music, as they were no longer dependent on performers as the only way to reach the audience.[31] Those interested in musical works could now purchase sheet music.[32] In the late nineteenth and early twentieth centuries, new inventions such as music boxes, gramophones and radio changed the habits of listeners[33] and rearranged the interests of composers, performers and disseminators of the works within the music industry[34]. As a consequence of this technological progress, producers of recording devices and data carriers, who were not primarily music industry stakeholders, became objects of legal regulation. How the steps of technological innovation affected copyright and CRM will be discussed in the following chapters.

A last introductory remark concerns the law that will be studied. The approach will not concentrate on a certain type of law – national, supranational or international. Such a limitation would not be commensurate to the problem being approached. None of the types of law just mentioned would, on its own, be sufficient when dealing with the phenomenon of CRM in the field of online music streaming. The streaming of music is a global topic for many reasons; those include the ubiquitous nature of the Internet and the potential global market for online service providers. It is also enabled by the nature of art that is perceptible everywhere. However, there is no global law and therefore different types of law will be studied, depending on how they relate to the

29 EHRLICH CYRIL, 'Market Themes' (1989) *Journal of the Royal Musical Association*, pp. 1–5, at pp. 1–2.

30 SINNREICH, 'Music, Copyright and Technology', p. 426.

31 SINNREICH, 'Music, Copyright and Technology', p. 427.

32 SINNREICH, 'Music, Copyright and Technology', p. 427.

33 TOWSE RUTH, 'Economics of Music Publishing: Copyright and the Market' (2017) *Journal of Cultural Economics*, pp. 403–420, at pp. 406 and 412.

34 Dommann describes how radio accentuated conflicts of interest among the music industry stakeholders. DOMMANN MONIKA, *Authors and Apparatus: A Media History of Copyright*, Ithaca, NY: Cornell University Press, 2019, pp. 107–108.

issue of blockchain and CRM at the global level. This approach corresponds with the methodology of transnational law, which deals with all kinds of law that react to cross-border problems.[35] Thus, moments in the development of various national laws, supranational laws and international law will be identified that often influenced one another in the sense of norms convergence. These moments will be described in the discussion of the history of copyright and CRM. The scientific discourse on this topic mostly concentrates on a certain territory, time period, type of right or influence, such as technological or market developments. There is no work that comprehensively describes the development of copyright and CRM on the global level. In the following chapters an attempt will be made to sketch such a picture.

I. History of Copyright and Related Rights in Musical Works

The emergence of copyright as a title of the author was a major step in the evolution of the system of law that affected the differentiation of art. Prior to that, copyright meant a sole right to copy, which was pushed through by publishers and granted them the exclusive right to print books in a certain territory.[36] It is only since the end of the eighteenth century that the idea of copyright has been perceived as the author's right of ownership in their work.[37] This is connected with a few other developments. Apart from the end of patronage and the growing market for cultural goods, which enabled authors to make a living through their creative work,[38] a change of paradigm also occurred regarding

35 See ZUMBANSEN PEER, 'Transnational Law: Theories and Applications' in Zumbansen Peer (ed), *The Oxford Handbook of Transnational Law*, New York, NY: Oxford University Press, 2021, pp. 3-30, at pp. 5-6.

36 See BENTLY LIONEL, 'Introduction to Part I: The History of Copyright' in Bently Lionel / Suthersanen Uma / Torremans Paul (eds), *Global Copyright: Three Hundred Years Since the Statute of Anne, from 1709 to Cyberspace*, Cheltenham, UK / Northampton, MA: Edward Elgar, 2010, pp. 7-13, at pp. 9-11; MELTON JAMES VAN HORN, *The Rise of the Public in Enlightenment Europe*, Cambridge: Cambridge University Press, 2008, p. 137.

37 MELTON, *The Rise of the Public in Enlightenment Europe*, p. 124.

38 GROSHEIDE WILLEM, 'Transition from Guild Regulation to Modern Copyright Law – A View From the Low Countries' in Bently Lionel / Suthersanen Uma / Torremans Paul (eds), *Global Copyright: Three Hundred Years Since the Statute of Anne, from 1709 to Cyberspace*, Cheltenham, UK / Northampton, MA: Edward Elgar, 2010, pp. 79-102, at p. 93.

the concept of the author. Before the eighteenth century, authors were seen only as vehicles or instruments who delivered to the audience what they had learned or created through inspiration from God or a muse.[39] In the eighteenth century, that notion of an external source inspiration was internalised and placed in the author's own genius.[40] An author was now regarded as someone who created something individual and original. The work was the author's achievement, an expression of their individual formation.[41] In addition, John Locke's argument in his *Two Treaties of Government* from 1690 that a person's labour makes the work their property was used by other scholars to conclude that intellectual activity gave authors rights of ownership in their intellectual works.[42] The importance of the author in the musical field also reflected the fact that in the nineteenth century, musical notation became more detailed, so the work could be performed as the composer intended.[43] From the late eighteenth onward and in the course of the nineteenth century, copyright as a right of the author found its way into several national legal systems.[44] This development originated in the domain of literary works,[45] but musical copyright was soon explicitly introduced into copyright law as well.

In 1791, the French National Assembly enacted that public theatres may not perform works of living authors without their consent.[46] This established protection of authors who created music for theatres and enabled them to demand royalties for the performance of their works. These rights in dramatico-musical works are usually called 'grand rights'.[47] In 1793, the same Assembly enacted a more general clause stating that "… the composers of music … enjoy for their whole life the exclusive right to sell, have sold, to distribute and to

39 WOODMANSEE MARTHA, 'The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author'' (1984) *Eighteenth-Century Studies*, pp. 425-448, at p. 427.

40 WOODMANSEE, 'The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author'', p. 427.

41 FICHTE JOHANN GOTTLIEB, 'Beweis der Unrechtmässigkeit des Büchernachdrucks' (1793) *Berlinische Monatsschrift*, pp. 443-483, at p. 450.

42 DRAHOS PETER, *A Philosophy of Intellectual Property*, Aldershot; Brookfield: Dartmouth, 1996, pp. 43-44 and 47-48.

43 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 23.

44 See BENTLY, 'Introduction to Part I: The History of Copyright', p. 10.

45 LUF GERHARD, 'Philosophische Strömungen in der Aufklärung und ihr Einfluß auf das Urheberrecht' in Dittrich Robert (ed), *Woher kommt das Urheberrecht und wohin geht es?*, Wien: Manzsche Verlags- und Universitätsbuchhandlung, 1988, pp. 9-19, at p. 9.

46 EGLOFF WILLI, *Copyright Stories: Sketches on the Political Economy of Copyright*, Berne: advocomplex, 2018, p. 14.

47 For more information about 'grand rights' see FICSOR MIHÁLY, *Collective Management of Copyright and Related Rights*, Geneva: WIPO, 2002, pp. 38 and 40.

assign ownership of their works or parts of it in the territory of the Republic."[48] Thereby the way was cleared for protection of non-dramatic musical works, so-called 'small rights' works.[49] The condition for making use of the right was printing of the work.[50] Courts soon narrowed the scope of protection to include only works that were first published or premiered on French territory.[51] This state of affairs made opera composers such as Giacomo Meyerbeer and Giuseppe Verdi choose to introduce their works in France.[52] The librettist Scribe insisted on the first performance of the opera, for which he wrote the libretto, in France, although the opera had originally been requested for a Berlin theatre.[53] This reinforced the status of Paris as the most attractive musical scene for opera composers in Europe.[54]

This was not welcomed by other states, which also aspired to have an important cultural scene.[55] Prussia, the United Kingdom, the Kingdom of Naples, the Kingdom of Sardinia and the Empire of Austria are examples of states that introduced legal protection of authors during the first half of the nineteenth century.[56] Apart from national legislation, support for a country's artists was enhanced by entering into reciprocal agreements, which granted artists protection abroad as well.[57] For example, Austria and Sardinia (followed by many other Italian states, as well as the Swiss Canton of Ticino)[58] entered into a bilateral agreement.[59] France also entered into many bilateral agreements with other states.[60] This development of broadening territorial protection through

48 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 16.

49 For more information about the difference between 'grand rights' and 'small rights' see FICSOR, *Collective Management of Copyright and Related Rights*, pp. 38 and 40.

50 WALTER MICHAEL, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, Stuttgart; Weimar: J.B. Metzler, 1997, p. 207.

51 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 16.

52 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 27.

53 WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, pp. 207-208.

54 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 27; WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, p. 212.

55 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 20; EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 27.

56 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 27; WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, pp. 217-224.

57 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 27.

58 BLAKENEY MICHAEL, 'The Industrial Protection of Intellectual Property From the Paris Convention to the TRIPS Agreement' WIPO/IP/CAI/1/03/2 (February 2003) *WIPO National Seminar on Intellectual Property*, p. 8.

59 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 27; WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, pp. 225-228.

60 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, pp. 27-28.

reciprocal agreements peaked in 1886, when the Berne Convention for the Protection of Literary and Artistic Works (Berne Convention) was accepted. Every contracting country to the Convention agreed to recognise authors' rights which they obtained in compliance with the law of another contracting country and granted those authors the same protection as their own nationals.[61]

Until the end of the nineteenth century, the main object of music copyright protection was written music, and so unauthorised reproduction basically meant unauthorised reprinting of the musical notation.[62] This view was challenged with the invention of music boxes,[63] machines that could play melodies, as a rotating cylinder with metal pins on it would collide at a certain time with metal teeth of different lengths, vibrating them and thus producing various tones.[64] French courts initially subsumed the transfer of musical works to music boxes without authors' permission as unauthorised reproduction,[65] but had to abandon this practice due to trade agreement negotiations with Switzerland, a huge exporter of music boxes[66], which even managed to exempt them from the scope of the Berne Convention.[67] But towards the end of the nineteenth century, the advent of the phonograph in 1877 and the gramophone in 1887 that could faithfully record and reproduce sound, including musical performances, led to changes in the concepts of work and reproduction. The work did not need to have a written form anymore and could be reproduced by other means than copying sheet music.[68] Phonographs could be used for recording sound onto cylinders, gramophones for recording sound onto phonograph disc records. Eventually, authors of musical works were granted an exclusive right to authorise adaptation of their works for 'mechanical reproduc-

61 Berne Convention for the Protection of Literary and Artistic Works, 9 September 1886, art. 2 in INTERNATIONAL BUREAU OF INTELLECTUAL PROPERTY, *The Berne Convention for the Protection of Literary and Artistic Works from 1886 to 1986*, Geneva, 1986, p. 228.

62 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 24; EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 22.

63 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 22.

64 BULLEID H. A. V., 'Musical Box' (2001) *Grove Music Online*, Oxford University Press.

65 KAUFMANN, 'Literarisches und künstlerisches Eigenthum' in Furrer Alfred (ed), *Volkswirtschafts-Lexikon der Schweiz (Urproduktion, Handel, Industrie, Verkehr etc.), Vol. II*, Berne: Schmid Francke, 1889, pp. 342-354 as cited in DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 26; RÖTHLISBERGER ERNST, 'Urheberrecht' in Reichesberg Naúm (ed), *Handwörterbuch der Schweizerischen Volkswirtschaft, Sozialpolitik und Verwaltung. Vol. 3*, Berne: Verlag Enzyklopädie, 1903-1911, pp. 1142-1148 as cited in DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 26.

66 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 22.

67 Final Protocol to the Berne Convention for the Protection of Literary and Artistic Works, 9 September 1886, par. 3 in INTERNATIONAL BUREAU OF INTELLECTUAL PROPERTY, *The Berne Convention for the Protection of Literary and Artistic Works from 1886 to 1986*, p. 228.

68 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 42-43.

tion' and the public performance of their works by means of such reproduction by various legal orders. The Berne Convention was also revised in 1908 to include that provision.[69] As a result of this development, printed sheet music lost its exclusive position in copyright.

The revision of the Berne Convention in 1908 not only introduced the right of authors to authorise adaptation of musical works for mechanical instruments and public performance through mechanical means, it also enabled the contracting countries to adopt reservations and conditions regarding these rights, which Great Britain and Germany made use of. The inspiration came from the US (a non-party to the Berne Convention at that time), where granting the right to make copies of musical works by mechanical means was introduced together with a compulsory licence to anyone who paid royalties, the amount being set by the law[70] in order to prevent the emergence of trusts and monopolies.[71] Compulsory licences meant that authors lost absolute control over record production of their works once they permitted this kind of use.[72] This US approach influenced the revision of law in Europe.[73] In Germany in 1910, authors were granted an exclusive right to transfer their work onto a record.[74] The law also set compulsory licences for the reproduction of records, but not the amount of royalties; the amount was to be negotiated between the rights holders and the record industry.[75] The British Copyright Act of 1911 granted authors the right to make records[76] and also allowed production of such records to anyone who paid a certain amount of royalties, given that the author had already given consent to such a production in the past.[77] In contrast to Germany, the royalties for the compulsory mechanical licences were set by the law.[78]

69 Revised Berne Convention for the Protection of Literary and Artistic Works, 13 November 1908, art. 13 in INTERNATIONAL BUREAU OF INTELLECTUAL PROPERTY, The Berne Convention for the Protection of Literary and Artistic Works from 1886 to 1986, p. 229.

70 1909 Copyright Act: An Act to Amend and Consolidate the Acts Respecting Copyright, Pub.L. 60-349, ch. 320, sec. 1(e), 35 Stat. 1075, 1075-1076 (1909); DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 60.

71 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 61.

72 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 61.

73 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 62.

74 Gesetz betreffend das Urheberrecht an Werken der Literatur und der Tonkunst, 19 June 1901, RGBL 1901 at 227, as amended on 22 May 1910, RGBL 1910 at 793, § 12 Abs. 2 Nr. 5 in LINDEMANN OTTO, *Gesetz, betreffend das Urheberrecht an Werken der Literatur und der Tonkunst vom 19. Juni 1901 in der Fassung des Gesetzes vom 22. Mai 1910*, Berlin: J. Guttentag Verlagsbuchhandlung, 1910, p. 58.

75 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 64.

76 Copyright Act 1911, 1 & 2 Geo. c. 46, s. 1(2)(d).

77 Copyright Act 1911, 1 & 2 Geo. c. 46, s. 19(2).

78 See Copyright Act 1911, 1 & 2 Geo. c. 46, s. 19(3); DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 64.

The British Copyright Act of 1911 also established copyright in records for record producers.[79] It was unique in that copyright was granted to record producers. In other states, the phonographic industry had to wait much longer for an explicit enactment of their rights, and mostly it came not in the form of copyright, but in the form of specific rights outside copyright, as will be discussed further below.

The record producers were not the only group of stakeholders who lobbied for legal protection after the advent of phonographs and gramophones. Another group were the performers,[80] who, as those who are heard and bring the musical work to life, eventually became the main stars for the public, replacing the composers.[81] The question of regulation of performers' rights was taken up by the International Labour Organisation (ILO).[82] The ILO argued that performers are dependent on their reputation and that for this reason they needed some kind of control over the sound recordings and broadcasting.[83]

The demands of both groups received serious attention at an international level only after the expansion of the radio in the 1920s[84] and the advent of the talkie.[85] Next to the publishers and the authors, performers were also lobbying for rights in the face of the changing market. Whereas authors were granted the right of authorising communication of their works to the public by broadcasting in 1928 in the revision of the Berne Convention,[86] performers were denied inclusion in this Convention. Thus although both authors and performers were interested in protecting their works or performances from any distortions, caused for example by bad-quality broadcasting technology, only authors received such protection.[87]

The radio and the talkie had a negative impact on the demand for live music, meaning that performers and orchestras ended up with fewer opportunities to earn from live performances.[88] Radio also affected the demand for

79 Copyright Act 1911, 1 & 2 Geo. c. 46, s. 19(1).

80 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 107.

81 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 52.

82 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 111–112.

83 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 112.

84 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 105.

85 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 110.

86 Revised Berne Convention for the Protection of Literary and Artistic Works, 2 June 1928, art. 11bis in INTERNATIONAL BUREAU OF INTELLECTUAL PROPERTY, *The Berne Convention for the Protection of Literary and Artistic Works from 1886 to 1986*, p. 230.

87 Revised Berne Convention for the Protection of Literary and Artistic Works, 2 June 1928, art. 6bis in INTERNATIONAL BUREAU OF INTELLECTUAL PROPERTY, *The Berne Convention for the Protection of Literary and Artistic Works from 1886 to 1986*, p. 230; DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 109–110.

88 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 52.

records, as music was instantly available to a large audience,[89] for the price of a radio receiver. The demand was further on the decline during the economic crisis of the 1930s.[90] Performers were losing work opportunities and at the same time they could not control how the records of their performances were exploited by third parties, such as broadcasters.[91] Although performers might have profited from the fact that records of their performances reached a larger audience and thus might have sparked interest among many people in seeing their concerts, this was likely to be true only for the big stars. Overall, job opportunities for musicians were shrinking.[92] Giving performers more control over the production and use of their records was seen as a way to improve their situation. The same thing was also expected to help the record producers, whose records were used by the broadcasters. Record producers had an interest in gaining better control over the making of copies of their records and the use of their records for public performance or in broadcasts.[93] As the broadcasters could mostly not exist without the records, "this call[ed], at the very least, for the makers' participation in the resulting profits [of the broadcasters]."[94]

The negotiation of rights for both record producers and performers in light of broadcasting was hindered and delayed by World War II, but afterwards they were eventually granted so-called neighbouring rights.[95] On the international level, these rights were enshrined in the International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (Rome Convention) in 1961. Granting copyright to those stakeholders was rejected because authors did not want to share their rights with others, not even with the performers, whose activity was at least also creative.[96] In the case of performers, the basis of the discussion that led to the

89 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 52.

90 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 54.

91 MASOUYÉ CLAUDE, *Guide to the Rome Convention and to the Phonograms Convention*, Geneva: WIPO, 1981, pp. 10–11.

92 MASOUYÉ, *Guide to the Rome Convention and to the Phonograms Convention*, p. 50.

93 MASOUYÉ, *Guide to the Rome Convention and to the Phonograms Convention*, p. 11.

94 MASOUYÉ, *Guide to the Rome Convention and to the Phonograms Convention*, p. 51.

95 The term 'neighbouring' rights will be used here; they are sometimes termed 'connected' rights, 'intermediary' rights or 'related' rights as well. See OSBORNE RICHARD, 'Is Equitable Remuneration Equitable? Performers' Rights in the UK' (2017) *Popular Music and Society*, pp. 573–591, at p. 575. Further below in this text, after introduction of the TRIPS Agreement, the term 'related rights' will be used, as this agreement is the first to use a special term for this category of rights. FICSOR, *Collective Management of Copyright and Related Rights*, p. 13.

96 This does not mean that the contracting parties could not choose to fulfil their obligations from this treaty by granting copyright. Authors were not only against granting copyright to performers and record producers, they did not support any kind of protection

creation of neighbouring rights as something different from copyright was that the performers were not *producing* an original and independent work, but only *reproducing* an already existing work.[97] In the case of record producers the basis was that the object of protection would be a tangible object, whereas copyright protects an intangible asset.[98]

The concrete protection awarded according to the Rome Convention is the following. Performers shall be protected against unauthorised broadcasting and communication to the public and unauthorised fixation of their performances.[99] Record producers shall be granted protection against unauthorised reproduction of their records, be it direct or indirect (e.g., recording of a broadcasting which contains the record),[100] to protect their risky financial investment in the record.[101] Secondary use of phonograms, i.e., use for broadcasting or any communication to the public, shall be equitably remunerated to the benefit of the performers, the producers of the phonograms or both (these rights are called 'Article 12 rights'[102]).[103] Next to the performers and producers of phonograms, there was a third group that received protection through this treaty: the broadcast companies. They could authorise or prohibit the rebroadcasting of their broadcasts, the fixation of their broadcasts and their reproductions under certain conditions and the communication to the public of their television broadcasts in public spaces with an entrance fee.[104]

The Rome Convention was signed at a time when tape recorders were spreading, but it did not address the issues that these devices raised. The reaction to the spread of tape recorders, which had been happening since the 1950s, only came later, after a legal paradigm shift in copyright. Before that

for them, as they were worried that if users were to pay royalties to more stakeholders, their income would be reduced. See EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 53.

97 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 107-108; EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 53; TOWSE RUTH, 'The Singer or the Song? Developments in Performers' Rights from the Perspective of a Cultural Economist' (2007) Review of Law and Economics, pp. 745-766, at p. 746.

98 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 55.

99 International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations, 26 October 1961, 496 U.N.T.S. 43 [hereinafter Rome Convention], art. 7.

100 Rome Convention, art. 10; MASOUYÉ, *Guide to the Rome Convention and to the Phonograms Convention*, p. 43.

101 HUGENHOLTZ P. BERNT, 'Neighbouring Rights are Obsolete' (2019) *International Review of Intellectual Property and Competition Law*, pp. 1006-1011, at pp. 1006-1007.

102 FICSOR, *Collective Management of Copyright and Related Rights*, p. 28.

103 Rome Convention, art. 12.

104 Rome Convention, art. 13.

shift, copyright distinguished between the commercial and non-commercial (personal) use of music recordings and regulated only the former.[105] Making copies for personal use was generally allowed, but in the context of the spread of tape recorders, it was argued that their use for non-commercial, private reproduction was capable of harming creators' commercial interests.[106] Therefore, legislators added a levy on objects used for copying of protected works.[107] The first country to introduce such a levy was Germany in 1965.[108] The levy on recording devices was followed by a levy on the recording media in 1985.[109] The practice of collecting levies became relevant from the perspective of the Berne Convention, which introduced the so-called three-step test in 1967. The then new art. 9(2), established that reproduction of protected works could be permitted in special cases, "provided that such reproduction does not conflict with a normal exploitation of the works and does not unreasonably prejudice the legitimate interests of authors."[110] In compliance with this article, most countries now allow private reproduction on the condition that the authors and other rights holders, such as producers of sound recordings, get fairly compensated. This compensation comes from the levies collected from manufacturers or importers of recording devices or media.[111]

The high standards of copyright and neighbouring rights protection set in the Berne and Rome Conventions have gained wider acceptance in the world only since the 1980s. At that time, the core of the debate on intellectual property law shifted from the forum of intellectual property law experts around the *World Intellectual Property Organization* (WIPO), which administers the Berne Convention, to the forum of trade law experts.[112] Developed

105 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 134 and 145.

106 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 145.

107 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 134.

108 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 77.

109 FICSOR, *Collective Management of Copyright and Related Rights*, p. 90.

110 Revised Berne Convention for the Protection of Literary and Artistic Works, 14 July 1967, art. 9(2) in INTERNATIONAL BUREAU OF INTELLECTUAL PROPERTY, *The Berne Convention for the Protection of Literary and Artistic Works from 1886 to 1986*, Geneva, 1986, p. 233. The three steps of the test are the following: the reproduction of protected works is allowed only 1) in special cases, 2) when such reproduction does not exceed normal exploitation and 3) when the legitimate interests of authors are not unreasonably prejudiced.

111 See POORT JOOST / WIJMINGA HESTER / KLOMP WOUTER / JAGT MARIJE, *International Survey on Private Copying – Law and Practice 2016*, Geneva: WIPO, 2017, pp. 5 and 8.

112 For more on the topic of using international trade law to regulate intellectual property rights, see REICHMAN JEROME H., 'Intellectual Property in International Trade: Opportunities and Risks of GATT Connection' (1989) *Vanderbilt Journal of Transnational Law*, pp. 747-891, at pp. 754 ff.

countries were motivated to enhance the protection of intellectual property in fields such as biotechnology and software, in order to retain their comparative advantage in international markets.[113] Intellectual property was considered "a major national asset in a global economy", and with the increase of digitalisation, piracy presented a danger that had to be addressed.[114] Thus, intellectual property became a topic in the trade law forum. Within the forum focusing on intellectual property itself, the main goal of the discussion was to set common standards regarding authors' rights and neighbouring rights, which the rights holders could then enforce under their jurisdiction. Within the trade law forum, the aim of the discussion was to set obligations for states regarding international trade, on topics such as tariffs and other barriers to trade, which the states could enforce against one another.[115] The application of common standards of copyright and neighbouring rights became part of an international trading system, which set barriers of entry to the market for countries that did not accept the standards. The trade law treaties often integrated or repeated provisions contained in the Berne or Rome Conventions, so materially these two conventions are the most important for the legal regulation of the use of musical works.

One of the most important multilateral trade law treaties is the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), signed in 1994. It was the outcome of the Uruguay Round negotiations within the framework of the General Agreement on Trade and Tariffs (GATT), which also led to the establishment of the *World Trade Organization* (WTO). The TRIPS Agreement incorporates Articles 1 to 21 of the Berne Convention (excluding Article 6bis regarding moral rights) and obliges its contracting parties to comply with them.[116] The TRIPS Agreement also includes provisions on the rights of performers, producers of sound recordings and broadcasters, which are labelled 'related rights' there,[117] and regulates them similarly to the Rome

113 NIMMER RAYMOND T. / KRAUTHAUS PATRICIA ANN, 'Globalisation of Law in Intellectual Property and Related Commercial Contexts' (1992) *A Socio-Legal Journal*, pp. 80–103, at p. 93; REICHMAN, 'Intellectual Property in International Trade: Opportunities and Risks of GATT Connection', p. 754.

114 NIMMER/KRAUTHAUS, 'Globalisation of Law in Intellectual Property and Related Commercial Contexts', p. 99.

115 NIMMER/KRAUTHAUS, 'Globalisation of Law in Intellectual Property and Related Commercial Contexts', p. 99.

116 Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement], art. 9(1).

117 TRIPS Agreement, art 14.

Convention (with a few differences).[118] Thus, even countries that are not members of the Berne or Rome Convention must abide by many of the Conventions' rules if they are members of the WTO.

In the forum of intellectual property law experts around WIPO, new treaties were formulated in 1996. The so-called 'Internet treaties', the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT), also oblige their contracting parties to comply with certain provisions of the Berne Convention.[119] They further clarified and updated the application of existing rights of authors and performers and producers of phonograms, respectively, to the new conditions of digital communication.[120] That is, they updated the exclusive rights to include authorisation of making available to the public via on-demand services, i.e., those accessed from a place and at a time individually chosen by members of the public.[121] Like the Berne Convention, the WCT allows contracting parties to set limitations or exceptions to the rights of authors when their legitimate interests are not unreasonably prejudiced and when the case is not beyond normal exploitation of the work,[122] and the WPPT expands this possibility to the rights of performers and producers of phonograms.[123] The WCT also obliges the contracting parties to protect the technological measures against circumvention that authors might use when exercising their rights in the digital environment.[124]

In this outline of the history of copyright, the events that are most relevant for the current CRM have been described. The international treaties in the field of copyright and related rights bring similarities into different national legislations, but nonetheless, copyright law still remains territorial. There may also be significant differences between the ways states implement their obligations from international treaties. In the following summary of the history of CRM such cases will be discussed when relevant.

118 MUNOZ TELLEZ VIVIANA / WAITARA ANDREW CHEGE, 'A Development Analysis of the Proposed WIPO Treaty on the Protection of Broadcasting and Cablecasting Organizations', *South Centre*, Research Paper No. 9 (2007), p. 21.

119 WIPO Performances and Phonograms Treaty, 20 December 1996, 2186 U.N.T.S. 203 [hereinafter WPPT], art. 22; WIPO Copyright Treaty, 20 December 1996, 2186 U.N.T.S. 121 [hereinafter WCT], art. 1(4), 3 and 13.

120 FICSOR, *Collective Management of Copyright and Related Rights*, p. 33.

121 WCT, art. 8; WPPT, art. 10 and 14.

122 WCT, art. 10.

123 WPPT, art. 16.

124 WCT, art. 11 and 12.

II. History of Collective Rights Management

The codification of copyright allowed musical works to be treated as economic assets that could be monetised. Authors, as those who invested their intellect into the creation of their works, were granted rights that enabled them to demand remuneration for the use of their works.[125] Later, other categories of rights holders were also awarded protection: performers, producers of sound recordings and broadcast organisations. Whereas the rationale for performers' rights is similar to that for authors' rights, namely to protect their creative activity so that it cannot be used (and eventually monetised) without their consent, it is rather the technological investment of producers of sound recordings and broadcasters that is being protected.[126] All these rights holders have in common that some of their rights are managed by special organisations (CMOs) that take care of granting permission to use the works, negotiating the licence fees, collecting and distributing remuneration, and policing unpermitted use. In this chapter the emergence and further development of CMOs will be discussed in more detail.

The first CMO emerged in France due to the activities of authors of theatre plays. In 1791, performing rights were enacted in favour of the authors of dramatico-musical works. This enabled the authors to generate income from granting permission to perform their pieces. At first, the income of dramatists did not rise significantly, as provincial theatres simply did not pay for the use of the plays.[127] Therefore, the Beaumarchais group[128] sent agents into larger French cities to represent the authors of theatre plays in negotiations with the theatres to control the payments.[129] In 1829, this system was translated into a special organisation representing authors of dramatic works, the *Société des*

125 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 69.

126 MASOUYÉ, *Guide to the Rome Convention and to the Phonograms Convention*, p. 12.

127 WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, p. 207.

128 Pierre-Augustin Caron de Beaumarchais was a dramatist accepted to the famous theatre *Comédie Française* in Paris. He and his colleagues who were also writing for the *Comédie Française* played a key role in pushing through performing rights for French authors. See EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, pp. 13-14.

129 WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, p. 207.

auteurs et compositeurs dramatiques (SACD). This is considered to be the first CMO.[130] Performing rights in musical works were enforced insofar as they were part of the dramatic works ('grand rights' works).

Performing rights in stand-alone non-dramatic musical works ('small rights' works) only started to be enforced later. This development was triggered by a lawsuit filed in Paris. It is said that in 1847 the artist Ernest Bourget was sitting in the 'café-chantant' *Les Ambassadeurs* in Paris where his music was being played and got upset because while he was expected to pay for the food and beverages, he was not paid anything for the use of his music.[131] In the decision that followed the lawsuit, the court acknowledged his and the composers' – Paul Henrion's and Victor Parizot's – right to be paid for the use of their works on the basis of the Copyright Act from 1791.[132] Subsequently, in 1850, in order to ensure enforcement of their rights, the creators and publishers established a CMO called *Société des auteurs, compositeurs et éditeurs de musique* (SACEM).[133] This organisation administers rights to works protected by so-called 'small rights', in contrast to SACD, which administers musical works protected by 'grand rights'. Most of the CMOs worldwide have the same division of collective management of musical works.[134] Both SACD and SACEM still exist.

In Prussia from 1837 and later in the German Confederation from 1841, authors were protected against unauthorised performances only until their work was published (in contrast to French law, where the work had to be published first in order to be protected),[135] so once it was published, the work could be performed without obtaining permission. Protection against unauthorised performances of published works was eventually established in the German Empire through the statute of 1871, but it was not until 1903 that the publishers (rather than the authors) seized the opportunity and finally implemented 'small rights'.[136] In that year, the German *Genossenschaft deutscher Tonsetzer* (GDT) founded the *Anstalt für musikalisches Aufführungsrecht* (AFMA)

130 FICSOR MIHÁLY, 'Collective Administration of Copyright and Neighboring Rights' (1989) *Copyright*, pp. 309-354, at p. 312.

131 More about this in ALBINSSON STAFFAN, 'A Costly Glass of Water: The Bourget v. Morel Case in Parisian Courts 1847-1849' (2014) *Svensk tidskrift för musikforskning – Swedish Journal of Music Research*, pp. 59-70, at pp. 62-63.

132 ALBINSSON STAFFAN, 'The Advent of Performing Rights in Europe' (2012) *Music and Politics*.

133 FICSOR, 'Collective Administration of Copyright and Neighboring Rights', p. 312.

134 ALBINSSON, 'The Advent of Performing Rights in Europe'.

135 WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, p. 217.

136 ALBINSSON, 'The Advent of Performing Rights in Europe'.

that started managing the performing rights in musical works on behalf of authors and publishers.[137]

In the UK, the situation was similar to the German Confederation in the sense that authors of non-dramatic musical works were acknowledged to have performing rights from 1842, but these rights were exercised only rarely (and only individually).[138] It was only in 1914 that the *Performing Right Society* (PRS) was established. Until then, British publishers had been convinced that the decisive source of income was the sales of sheet music, stimulated by performance of the printed works.[139] Eventually, an important publisher, William Boosey, realised that performing rights might be more valuable than publishing rights and contributed to the establishment of the PRS.[140] Further development of the market in the 1920s, marked by the expansion of phonographs and radio broadcasts, confirmed that licensing could make up for the decrease in income from sheet music.[141]

The emergence of national CMOs was also motivated by the fact that CMOs of other countries were sending their agents abroad to collect royalties if they found there was no other chance to receive royalties for their authors in their own territory. So by the end of the nineteenth century, the agents of SACEM were collecting royalties for French authors in Belgium, the UK, Italy and Switzerland.[142] The Austrian CMO, *Gesellschaft der Autoren, Komponisten und Musikverleger* (AKM), announced its entry to the German Empire in 1902 as there was no corresponding organisation to enforce performing rights.[143] This prompted other countries to establish their own CMOs representing their own national authors, rather than letting the foreign ones collect money in their territory.[144] The newly established CMOs mostly followed

137 More on the history of GDT and AFMA in SCHMIDT MANUELA / RIESENHUBER KARL / MICKLER RAIK, 'Geschichte der musikalischen Verwertungsgesellschaften in Deutschland' in Heker Harald / Riesenhuber Karl (eds), *Recht und Praxis der GEMA: Handbuch und Kommentar*, Berlin/Boston: Walter de Gruyter, 2018, pp. 5-20, at pp. 9-12.

138 CYRIL EHRLICH, *Harmonious Alliance: A History of the Performing Right Society*, New York: Oxford University Press, 1989, p. 6; TOWSE, 'Economics of Music Publishing: Copyright and the Market', p. 407.

139 EHRLICH, *Harmonious Alliance: A History of the Performing Right Society*, p. 6.

140 EHRLICH, *Harmonious Alliance: A History of the Performing Right Society*, p. 13.

141 TOWSE, 'Economics of Music Publishing: Copyright and the Market', p. 413.

142 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 71.

143 SCHMIDT/RIESENHUBER/MICKLER, 'Geschichte der musikalischen Verwertungsgesellschaften in Deutschland', p. 11.

144 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 71-72; EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 46.

the organisational structure and methods of SACEM. In this way, the French system of CRM was exported to other states.[145]

With the emergence of CMOs, publishers and authors received an important source of income.[146] Both groups pursued the same interests in negotiations with music users, as they shared the same rights, and although they sometimes argued about the distribution ratio of the royalties,[147] the argument would postpone or complicate but not prevent the emergence of a common CMO. Within this alliance, according to Dommann, "[t]he publishers were the driving force, and the authors and composers were put on display."[148] This is to be understood as the publishers having a better bargaining position and business know-how to push through the interests of the alliance while the authors provided them with good justification for their demands.[149]

The collected royalties were distributed according to a classification system. SACEM based the classification of works on the length of the performance.[150] In 1927 the German *Gesellschaft für musikalische Aufführungs- und mechanische Vervielfältigungsrechte* (GEMA) abandoned this costly system and started valuing works according to the members' reputation, such as how famous they were and how long they had been active.[151] This created a 'self-encouraging' system as the GEMA strove to have as many celebrities in its repertoire as possible in order to have a strong bargaining position vis-à-vis music users. This, in turn, increased the income for GEMA and its members, which would encourage successful authors to apply for a membership.[152] This subjective assessment system was also adopted in the UK and the US in the 1920s.[153]

The assessment based on the programme analysis was costly as it relied on calculations done by hand. Dommann describes how in the 1930s, ma-

145 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 71-72.

146 See the current sources of revenues in music publishing in TOWSE, 'Economics of Music Publishing: Copyright and the Market', p. 416.

147 See the discussion of the failure of the first attempt at collective management of performing rights in the German Empire in SCHMIDT/RIESENHUBER/MICKLER, 'Geschichte der musikalischen Verwertungsgesellschaften in Deutschland', p. 7.

148 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 81.

149 On how ASCAP used composers Victor Herbert and John Philip Sousa as figureheads in Congress hearings, see DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 56-57 and 116.

150 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 77.

151 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 77-78.

152 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 78.

153 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 82.

chines started to be used for calculating royalties, removing individuals' control in that process.[154] According to her, CMOs developed complex classification and calculation systems in order "[t]o distract from their inner paradox as bureaucratic agencies oriented toward market prices that also had to ensure balance between successful members and those who had failed on the market."[155] This highlights that CRM was soon faced with tensions between its commercial and non-commercial functions, between being able to attract members and being successful in negotiations with users and not forgetting about the social aspects of its activities.

The tension was also reflected in the criteria for admission to CMOs. An attractive repertoire was important for each CMO. It had to include a large amount of works, especially by popular artists. The CMOs' admission rules often allowed only established authors as members, i.e., those who had already published a certain amount of works or were recommended by other members.[156] The *American Society of Composers, Authors and Publishers* (ASCAP) focused on attracting the majority of popular authors as members in order to make it unavoidable for the broadcast companies to acquire a licence for their repertoire.[157] Despite that, in 1939, broadcasters started refusing to pay ASCAP for using their repertoire, and established their own CMO, the *Broadcast Music Incorporated* (BMI), which started representing authors who were creating or playing marginalised music, such as folk music, Latin music or jazz; this left ASCAP without income from broadcasting.[158] So although there is usually only one CMO managing performing rights per country, in the US there are more.[159]

The attractiveness of CMOs was strengthened by the fact that they agreed to mutual representation of authors in their respective territories.[160] The principle of reciprocity enabled rights holders to control their rights globally.[161] This meant more income for the rights holders, especially if their

154 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 80.

155 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 82.

156 GEMA and SACEM applied such rules. DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 76–77.

157 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 122–123.

158 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 125.

159 FICSOR, *Collective Management of Copyright and Related Rights*, p. 40. In 1930, a third CMO managing performing rights was established: the Society of European Stage Authors and Composers (SESAC).

160 EHRLICH, *Harmonious Alliance: A History of the Performing Right Society*, p. 22.

161 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 70.

repertoire was popular abroad. These agreements were especially useful when radio stations started to operate, as the national CMOs could license a broader repertoire to the broadcasting companies.[162]

After authors received the right to authorise the reproduction of their works through mechanical means (the mechanical right), which was eventually connected with compulsory licences, the CMOs expanded their activities and also started to collect royalties for the mechanical licences. In France, licensing and the royalty system between composers, publishers and the phonograph industry was established as a result of a court decision in 1905, although this decision addressed only literary works, and thus only the lyrics of musical works.[163] The phonographic industry then reached an agreement with the authors and publishers to remunerate them for each record.[164] The royalties were collected by SACEM, the same CMO that was also managing the performing rights.[165] In Germany, the royalties were collected at first by the *Anstalt für mechanische Rechte* (AMRE) and *Anstalt für mechanisch-musikalische Rechte* (AMMRE), but since 1915 they were collected by the newly established *Genossenschaft zur Verwertung musikalischer Aufführungsrechte* (old GEMA).[166] At the beginning, GEMA also negotiated the tariffs for which mechanical licences were provided, as they were not prescribed by the law.[167] In the UK, the *Mechanical-Copyright Protection Society* (MCPS) was established in 1924 as the *Mechanical Copyright Licences Company* (established in 1910) merged with the *Copyright Protection Society*.[168] It provides licences to record companies and collects royalties on behalf of publishers and authors. In the US, music publishers are represented by the *Harry Fox Agency*, which issues licences in exchange for fees set by the Copyright Royalty Board, a panel of three judges appointed by the Library of Congress, so these fees are not negotiated in a free market.[169]

162 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, pp. 47–48.

163 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 48.

164 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 48.

165 In 1936, a mechanical organisation, the Société pour l'administration du droit de reproduction mécanique des auteurs, compositeurs, éditeurs, réalisateurs et doubleurs sous-titreurs was established, but it cooperates closely with SACEM and shares its infrastructure. FICSOR, *Collective Management of Copyright and Related Rights*, p. 49.

166 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 75. The old GEMA is to be distinguished from the current GEMA. SCHMIDT/RIESENHUBER/MICKLER, 'Geschichte der musikalischen Verwertungsgesellschaften in Deutschland', p. 14.

167 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 64.

168 PRS for Music.

169 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry' (14 July 2015), p. 18.

Authors and publishers did not remain the only categories of rights holders. During the economic crisis and the expansion of radio, a debate took place about who should benefit from profits stemming from the use of records. Conflicts newly emerged or were accentuated. Until then, there had been conflicts of authors and publishers vs. producers of sound recordings. The radio heightened conflicts between authors and performers, between authors and the producers of sound recordings, and between publishers and the producers of sound recordings, and it gave rise to conflicts between the producers of sound recordings and radio companies, and between radio companies and CMOs.[170] As described above, performers, producers of sound recordings and radio broadcasters received certain rights regarding reproduction or communication to the public in order to achieve a new balance.[171]

The rights of performers and producers of phonograms are either managed by joint management organisations, i.e., CMOs representing both groups of rights holders, or by separate CMOs for each of the groups. In Germany in 1959, the *Gesellschaft zur Verwertung von Leistungsschutzrechten* was established to represent the producers of phonograms and performers. In the UK, the *Phonographic Performance Limited* (PPL) was founded in 1934 by record labels. Since 1996, when performers were granted the right to equitable remuneration when their recorded performances were used in public, the PPL has represented both performers and producers of sound recordings, and has licensed the broadcast and public performance of recordings on their behalf.[172]

Apart from the radio, another technological development impacted CRM and broadened the scope of CMOs' activities: the magnetic tape. It was patented in 1898 and by 1950 it became the predominant medium used for sound recordings.[173] Together with a radio receiver, the tape recorders enabled users to record the broadcasts. In contrast to the phonograph records, tapes were manipulable. They could be cut or overwritten.[174] According to GEMA, these characteristics caused violations of copyright and neighbouring rights.[175] The fact that consumers could record works from the radio was accepted as potentially causing financial loss to authors and record producers.[176] Apart

170 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 105-106.

171 See pp. 14 ff.

172 AGUILAR ANANAY, 'The Collective Management of Performers' Rights in the UK: A Story of Competing Interests' (2019) *SCRIPTed*, pp. 4-48, at pp. 11-12.

173 SHERIDAN CHRIS, revised by Mumma Gordon, Rye Howard and Kernfeld Barry, 'Recording' (2003) *Grove Music Online*, Oxford University Press.

174 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 135 and 139.

175 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 138.

176 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 145.

from that, tapes empowered consumers, as they enabled them to create their own music.[177] As all of this happened in the private homes of consumers, the CMOs lost control over how much works were used.[178] As tapes were also cheaper to produce than phonograph records and contained more music, the income from royalties, which were set at a certain percentage of the sales price of phonograms, dropped.[179]

Under these circumstances, GEMA argued that recording radio broadcasts on tapes was against the law. On the same side as GEMA were the broadcasting companies and producers of phonographic records, to whom the new medium was a rival.[180] The first country to adopt a levy on tape recorders was Germany in 1965. The first idea was to oblige the owners of the devices to pay a fee for the possibility of private copying, but legislators saw a better solution in obliging the manufacturers as well as importers of tape recorders to forward a certain percentage of their sales to the CMOs.[181] The second country to adopt such levies was Austria in 1980 and the third one was Hungary in 1982.[182] In Great Britain, the MCPS called for fees for devices in 1959,[183] but this was not enacted. Even now, the UK is one of a few countries in Europe not collecting levies from the manufacturers.[184] Levies are either collected by an already established CMO, e.g., the one representing authors, on behalf of all other groups of rights holders, and then redistributed among the relevant CMOs, or by a special organisation for that purpose.[185] In the Netherlands, the latter is the case with the *Stichting Onderhandelingen Thuiskopievergoedingen* that suggests the tariffs and collects and distributes the private copying levies.[186]

177 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 143.

178 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 139.

179 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 140.

180 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 138-139.

181 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 146; EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 77; Gesetz über Urheberrecht und verwandte Schutzrechte, 9 September 1965, BGBL. I at 1273, § 53 Abs. 5.

182 FICSOR, *Collective Management of Copyright and Related Rights*, p. 89.

183 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 147.

184 There is currently no regulation on private copying in the UK. POORT/WIJMINGA/KLOMP/JAGT, *International Survey on Private Copying – Law and Practice 2016*, p. 7. The other European countries that do not collect private copying levies are Ireland, Malta, Cyprus, and Luxembourg. KRETSCHMER MARTIN, 'Private Copying and Fair Compensation: An Empirical Study of Copyright Levies in Europe' (2011), Intellectual Property Office Research Paper No. 2011/9, p. 10.

185 FICSOR, *Collective Management of Copyright and Related Rights*, p. 90.

186 POORT/WIJMINGA/ KLOMP/JAGT, *International Survey on Private Copying – Law and Practice 2016*, p. 119.

Technology has developed further since then. Nowadays, a large portion of music consumption takes place via streaming services, which means the CRM system has been developing further. This will be discussed in more detail in Chapter 1.IV. So far, it can be summarised that CMOs emerged when a certain right was enacted and the rights holders were motivated to exercise it. The specific circumstances of how rights holders reached this point varied between countries. In general, technological and market developments, or in other words "the social, political and cultural factors", play an important role in the development of CRM. According to Dommann, these factors have not been analysed so far.[187] Based to a great extent on her analysis in the book *Authors and Apparatus: A Media History of Copyright*, this chapter is an attempt to add to that discussion.

III. Functions of CMOs

In the previous chapter it was seen that the idea behind the creation of CMOs was to facilitate licensing of works, which would be too inconvenient for rights holders to do on their own.[188] Later, with technological developments, CMOs started to collect levies on recording devices and media in order to compensate rights holders for private use of their works. Usually, the CMOs negotiate licensing conditions or set licensing tariffs, collect and distribute royalties and enforce the licences on behalf of their members. In some countries, especially in continental Europe, a few other social and cultural functions of CMOs have developed.

Many functions of CMOs can be identified, depending on the perspective applied. When classifying the different functions, distinctions can be made between core and ancillary functions,[189] economic and non-economic (i.e., cultural and social functions),[190] or functions in favour of rights holders,

187 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 70.

188 NÉRISSON SYLVIE, 'Collective Management of Copyright in France' in Gervais Daniel (ed), *Collective Management of Copyright and Related Rights*, Alphen aan den Rijn: Wolters Kluwer, 2016, pp. 175-203, at p. 177.

189 GERVAIS DANIEL, 'The Economics of Collective Management' in Depoorter Ben and Menell Peter S. (eds), *Research Handbook on the Economics of Intellectual Property Law, Volume 1: Theory*, Cheltenham, UK / Northampton, MA: Edward Elgar, 2019, pp. 489-507, at p. 491.

190 GRABER CHRISTOPH BEAT, 'Collective Rights Management, Competition Policy and Cultural Diversity: EU Law Making at a Crossroads' (2012) *WIPO Journal*, pp. 35-43, at p. 36.

users, and the general public. In what follows, a list will be provided of the functions of CMOs discussed in the academic literature, without categorising them, as many of these functions overlap or share the same rationale.

Not every CMO has to fulfil all of the listed functions, depending on the nature of the rights represented, the types of licences granted and the level of 'collectivism' of the CMO.

A. Materialisation of the Statutorily Granted Rights

This is a broadly formulated function and can cover many of the other listed functions. It concerns the fact that copyright, like legal norms in general, has a certain goal.[191] CMOs added a particular form and procedure so that the goal could be achieved.[192] Albinsson describes how CMOs emerged after the advent of performing rights as an institutional "counterforce against non-salaried exploitation of composers' labour."[193] Performers later also received protection against such non-salaried exploitation. Nowadays, the goal of monetisation is broadly accepted as the main raison d'être of copyright, although this goal does not have to be pursued by every author.[194]

It seems obvious now that the rights copyright grants authors regarding control over the use of their works would be meaningless if it were impossible or too burdensome to exercise them (especially bearing in mind the problems posed by the distribution of works on the Internet). It was CMOs that enabled the rights' enforcement, thus they can be seen as the entities enabling copyright to materialise. This is illustrated by the establishment of SACD, the French CMO providing performing licences for dramatic works.[195] Performing rights to non-dramatic musical works had existed only on paper

191 See WIETHÖLTER RUDOLF, 'Materialization and Proceduralization in Modern Law' in Teubner Gunther (ed), *Dilemmas of Law in the Welfare State*, Berlin: De Gruyter, 1988, pp. 221-249, at p. 227.

192 On the relationship between the goals of law and proceduralisation see WIETHÖLTER RUDOLF, 'Materialization and Proceduralization in Modern Law', pp. 221-249.

193 ALBINSSON, 'The Advent of Performing Rights in Europe'.

194 In the seventeenth century it was considered inglorious to accept monetary compensation for writing books and Martin Luther (1483-1546) held that knowledge was God-given, belonging to the public domain. GRABER, *Zwischen Geist und Geld: Interferenzen von Kunst und Wirtschaft aus rechtlicher Sicht*, p. 56; WOODMANSEE, 'The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author'', p. 434.

195 See pp. 19-20.

before SACEM was established.[196] As well as performing rights, there are other rights that cannot be managed individually, for instance the rights in respect of private copying.[197] In this case, the manufacturers of certain devices and data carriers pay fees to a CMO, which then redistributes the money to the eligible persons or other CMOs.[198] The right to equitable remuneration or the exclusive right of performers and producers of phonograms to communicate the recorded performances to the public also have to be managed collectively.[199] Performers and producers of phonograms have either joint CMOs or separate CMOs to manage the rights, or they entrust the collection to performing rights organisations of authors.[200]

B. Licensing Works

The CMOs represent rights holders usually on the basis of a mutual contract, such as a licence, partial assignment, or mandate[201], in a few countries on a statutory basis.[202] The main reason for collective management is the high transaction costs of individual management. The collective negotiation on behalf of all rights holders lowers these costs (see Chapter 1.III.B.1). Collective negotiation of licences also strengthens the position of the authors and performers, who might have too little bargaining power in individual negotiations with the users.[203]

CRM also affects the type of licence granted. CMOs can grant repertory licences, i.e., licences of the whole repertoire of the CMO, which cover the works of all rights holders that are members of the CMO. Another type of licence is a blanket licence, which covers all works of a certain category, even if the CMO does not represent their rights holders.[204] Thus, the CMO can license the entire world repertoire. This kind of licensing can be enabled by

196 EGLOFF, *Copyright Stories: Sketches on the Political Economy of Copyright*, p. 17.

197 FICSOR, *Collective Management of Copyright and Related Rights*, p. 90.

198 FICSOR, *Collective Management of Copyright and Related Rights*, p. 90.

199 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 78 and 81.

200 FICSOR, *Collective Management of Copyright and Related Rights*, p. 81.

201 GOLDSTEIN PAUL / HUGENHOLTZ P. BERNT, *International Copyright: Principles, Law and Practice*, New York, NY: Oxford University Press, 2019, p. 258.

202 See FICSOR, *Collective Management of Copyright and Related Rights*, p. 42.

203 GERVAIS DANIEL, 'The Evolving Role(s) of Copyright Collectives' in Graber Christoph Beat / Govoni Carlo / Girsberger Michael / Nenova Mira (eds), *Digital Rights Management: The End of Collecting Societies?*, Berne: Staempfli, 2005, pp. 27-56, at p. 31.

204 GERVAIS, 'The Economics of Collective Management', p. 493.

statutory provisions guaranteeing users that they will not have to face any harmful consequences for use of certain works and guaranteeing rights holders that they will be treated "in a reasonable way",[205] or by the enactment of extended licensing, which means that the CMO will provide licences for certain categories of works and rights on behalf of rights holders who are not contractually represented.[206]

Repertory and blanket licences are important tools to encourage the demand for licences. Licensing one work is usually of low value to the users, so it would not make sense for them to spend too many resources on this process.[207] Centralising the management of rights under a CMO enables users to obtain a licence to many works, in a single procedure, which is economically sensible.[208] In the digital environment, the repertory and blanket licences enable end-users to access a broad spectrum of works and at the same time make it possible for the Long Tail[209] of artists to reach their audience. For global digital service providers it does not play much of a role if they offer only the music of top-selling artists or if they add those from the Long Tail, as the latter costs them nothing other than additional storage space. In return, they can still make large profits from the consumption of Long Tail music.[210]

1. Lowering Transaction Costs

As has been described above, in the eighteenth and nineteenth centuries in France, different groups of authors realised that it was not possible for them to enforce their rights on their own, because of the high transaction costs of negotiating licences individually and monitoring that they were being respected. Therefore, they established CMOs. By negotiating licences, setting the tariffs, monitoring the use of the works, collecting remuneration and distributing it among the rights holders, CMOs reduce the transaction costs (search, contracting, monitoring and enforcement costs) for both licensing

205 FICSOR, *Collective Management of Copyright and Related Rights*, p. 140.

206 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 140–141.

207 BESEN STANLEY M. / KIRBY SHEILA NATARAJ, *Compensating Creators of Intellectual Property: Collectives That Collect*, Santa Monica, CA: RAND Corporation, 1989, p. 1; WATT RICHARD, 'Copyright Collectives: Some Basic Economic Theory' in Watt Richard (ed), *Handbook on the Economics of Copyright: A Guide for Students and Teachers*, Cheltenham, UK / Northampton, MA: Edward Elgar, 2016, pp. 167–178, at p. 169.

208 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, p. 1; WATT, 'Copyright Collectives: Some Basic Economic Theory', p. 169.

209 ANDERSON CHRIS, 'The Long Tail' (2004) *Wired*.

210 See the analogy with the books market in ANDERSON, 'The Long Tail'.

parties, the rights holders and the users.[211] Rights holders thus gain support to reap the benefits from their works, as they do not have to do all the administration on their own. Users can gain fairly cheap and quick access to the works they desire, as they do not have to search for the specific rights holders and negotiate with each of them individually.[212]

The lowering of transaction costs is an important justification for the existence of CMOs. It is in line with the view of institutional economics, which recognises that transaction costs are never zero.[213] The licensing of copyrighted works comes with various transaction costs. The search costs comprise making a list of all the musical works with the necessary metadata. The bargaining and contracting costs encompass concluding contracts for the use of the licensed objects and for the transfer of payments. The monitoring, policing and enforcement costs include the costs of controlling unauthorised use of the works and seeking reparation for it.[214] All these costs have been lowered due to the emergence of CMOs.

Without CRM, the enormous costs for a user to find the necessary information regarding protected works would eventually discourage them from acquiring the licences and the rights holders would not generate any income. This would constitute a market failure, which is a situation that should be remedied.[215]

If a single CMO can provide license to a repertoire at lower costs than multiple individuals, the situation is called a natural monopoly.[216] In a monopolistic situation, deadweight losses occur, i.e., the aggregate welfare in the economy is lower than it would be if perfect competition prevailed.[217] However, the deadweight losses are lower than the transaction costs that would be generated under perfect competition. Therefore, it is beneficial for all parties involved when CMOs, rather than individuals, license the works,

211 HANDKE CHRISTIAN, 'Collective Administration' in Watt Richard (ed), *Handbook on the Economics of Copyright: A Guide for Students and Teachers*, Cheltenham, UK / Northampton, MA: Edward Elgar Publishing, 2014, pp. 179-204, at pp. 183-184.

212 This justification of CRM also holds true for the current state of fragmentation of rights, rights holders and repertoires. See Chapter 1.IV.

213 See MEDEMA STEVEN G., 'Economics and Institutions: Lessons for the Coase Theorem' (2014) *Revue économique*, pp. 243-261.

214 ALBINSSON, 'The Advent of Performing Rights in Europe'; HANDKE, 'Collective Administration', p. 183.

215 HVIID MORTEN / SCHROFF SIMONE / STREET JOHN, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?' (2016) *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, pp. 256-270, at pp. 257-258.

216 WATT, 'Copyright Collectives: Some Basic Economic Theory', pp. 169-170.

217 BLACK JOHN / HASHIMZADE NIGAR / MYLES GARETH (eds), *A Dictionary of Economics*, Oxford, UK / New York, NY: Oxford University Press, 2017, p. 129.

even though the CMOs are monopolies. Katz argues that the conditions for a natural monopoly are no longer given in the era of digitalisation, which enables individual management of rights, and thus disputes the need for CMOs.[218] However, the prevalent view is that even in times of the Internet and digital rights management (DRM), CRM is more efficient than individual licensing.[219] Hviid et al. argue that the licensors need a comprehensive database of all rights holders in order to provide their services. The costs of creating and maintaining such a database are so high that it would be inefficient for more than one to exist. CMOs are able to co-operate in operating such a database.[220]

Repertory and blanket licensing further contribute to lowering transaction costs. They give users legal certainty and lower their compliance costs because, to a great extent, they do not have to plan in advance and check whether the works they use are covered by the licence.[221] For the CMOs, the monitoring costs are lower because they control uses of the same repertoire by every user.[222] The techniques of inspection also have to be developed only once.[223]

2. Negotiation of Licences and Setting Tariffs

As those who provide licences, CMOs are involved in the process of negotiating or setting the tariffs. It is often more advantageous for the rights holders to set the price for a licence cooperatively instead of having each rights holder determine the fee for the use of their works (non-cooperative pricing).[224] At the same time, it is less attractive for users if there are different fees for licens-

218 KATZ ARIEL, 'The Potential Demise of Another Natural Monopoly: New Technologies and the Administration of Performing Rights' (2006) *Journal of Competition Law and Economics*, pp. 245-284. For general criticism of the view that CMOs are natural monopolies see KATZ ARIEL, 'The Potential Demise of Another Natural Monopoly: Rethinking the Collective Administration of Performing Rights' (2005) *Journal of Competition Law and Economics*, pp. 541-593, at pp. 553-559.

219 WATT, 'Copyright Collectives: Some Basic Economic Theory', pp. 170 and 177, note 6.

220 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', pp. 260-261. The current project of the CMOs is the 'CISNet powered by FastTrack'. It is basically a network that interconnects many separate (mostly national) databases of the CMOs and enables them to search metadata of musical and audiovisual works in the databases of other CMOs. NUTTALL FRANÇOIS XAVIER, 'Private Copyright Documentation Systems and Practices: Collective Management Organizations' Databases' (Preliminary Version) (September 2011), pp. 30-31.

221 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, p. 7.

222 WATT, 'Copyright Collectives: Some Basic Economic Theory', p. 170.

223 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, p. 4.

224 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, p. 6.

ing different works, and therefore CMOs provide users with a repertory licence for a fixed fee.[225] This enables the CMOs to generate more revenue for rights holders and limits compliance costs for users.[226] When the CMOs manage the right of equitable remuneration or when there is a statutory licence, the CMOs may participate in a tariff-setting procedure, but it is mainly down to some other administrative or judicial body.[227]

Where the CMOs set the tariffs, their monopolistic position might bring some tension to the negotiation procedure. In the 1930s, music users in Germany, pointing to their function as disseminators of culture, demanded state-supervised tariff standardisation and a specialised body that would solve disputes between them and the CMOs,[228] which was enacted in 1933.[229] In the UK in the 1920s, the state's control body aimed to balance the interests of users (the phonographic industry) and copyright holders according to the criterion of 'fairness'.[230]

Ficsor identifies three possible abuses of the monopolistic position of a CMO: 1) refusal to provide a licence, 2) unreasonable discrimination between users and 3) setting tariffs or other licensing conditions in an arbitrary way.[231] In case of conflicts between users and CMOs there are administrative, arbitrational or judicial dispute resolution mechanisms.[232]

One of the issues to consider in case of a dispute is determining the value of the repertoire, which is a very broad and complex topic. It is done with the help of models, such as the Shapely model based on the user's maximum willingness to pay and the CMO's minimum willingness to accept, where the difference is the sharable surplus, out of which both parties want to keep as large a part as possible. It is not the only model that can be used. In any case, the model must be convincing and based on a good dataset in order to be accepted by the oversight bodies.[233]

225 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, p. 7. Only in certain countries is it possible to obtain a licence for a particular programme, mainly due to anti-trust laws. FICSOR, *Collective Management of Copyright and Related Rights*, p. 43.

226 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, pp. 6-7.

227 GERVAIS, 'The Economics of Collective Management', p. 492.

228 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 83.

229 SCHMIDT/RIESENHUBER/MICKLER, 'Geschichte der musikalischen Verwertungsgesellschaften in Deutschland', p. 17.

230 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 79.

231 FICSOR, *Collective Management of Copyright and Related Rights*, p. 144.

232 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 145-146.

233 GERVAIS, 'The Economics of Collective Management', pp. 496-497.

C. Monitoring the Use of the Works

After licensing works, it is desirable to monitor whether the licences are complied with. As with licensing, it is cheaper when this is the task of a CMO instead of each rights holder.[234]

This function also entails the collection of data on usage, so that the royalties can be distributed accordingly and the artists can get information about how their works are being used. This information is important for authors and performers if they wish to adapt their strategies of engagement with fans.[235] When works are used in broadcasting or streaming, the data on usage can be very precise, as they are produced in a digital form. In other cases, if it is too costly to collect precise information, the number of uses is estimated.[236] The estimations are based on samples or surveys.[237] This is always the case for the distribution of private copying levies, where it is not possible to know exactly what works are being copied and to what extent, due to the private nature of such activities.

D. Litigation on Behalf of the Rights Holders

If a CMO discovers through its monitoring activities that authors' or performers' rights are being infringed, that a licence was exceeded or that it was not even acquired, it can file a lawsuit on behalf of the rights holders.[238] When deciding about taking legal action, CMOs have to consider that legal proceedings may raise the cost of their services, which is not in the interest of the represented members, whereas non-enforcement might send a wrong signal to other users as well as to the general public.[239]

E. Collection and Distribution of Royalties

In order to reduce the transaction costs, the CMOs collect royalties from the users of musical works and redistribute them to the rights holders. According to the economic theory of CRM, CMOs have much discretion in how to dis-

234 WATT, 'Copyright Collectives: Some Basic Economic Theory', p. 169.

235 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 15.

236 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 45-46.

237 Examples are provided in FICSOR, *Collective Management of Copyright and Related Rights*, pp. 69 and 71.

238 GERVAIS, 'The Economics of Collective Management', p. 493.

239 GERVAIS, 'The Economics of Collective Management', p. 493.

tribute the royalties among members, as the rights holders are almost always better off than if they were to license individually.[240] In practice, CMOs are only allowed to cover their administration costs from the collected royalties while the rest should be forwarded to the rights holders.[241]

Distributing royalties is conducted according to a certain key. The CMOs managing performing rights base the distribution on a points system; every musical work is awarded a certain number of points, which may reflect its length or aesthetic evaluation (such as classical or popular music).[242] The main element of each distribution is how much the works were used.

There are also rules on how the royalties should be divided among different categories of rights holders, such as publishers, composers and lyricists. There are statutory rules, which are exclusively applied in the case of levies on private copying.[243] There are contractual rules between a publisher and authors of a musical work on how they will split the publisher's share of remuneration. Finally, there are internal rules of CMOs on the distribution of royalties among the categories of rights holders. For example, at the beginning, ASCAP split the performing royalties equally between publishers, composers and lyricists. In 1920 it changed the proportions in favour of publishers, who started to receive 50 per cent.[244]

In order to distribute the royalties properly, a CMO needs a database with all the necessary data on the works and their rights holders (for more about the databases see Chapter 2.II.A). CMOs must also make efforts to identify the rights holders if information on them is missing.

Remuneration should be distributed to rights holders promptly, but still at a reasonable cost. The EU Directive 2014/26/EU on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online uses in the internal market (CRM Directive) demands that rights holders receive their remuneration no later than nine months from the end of the financial year in which the revenue was collected.[245]

240 BESEN/KIRBY, *Compensating Creators of Intellectual Property: Collectives That Collect*, pp. 9–10.

241 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 147–148.

242 FICSOR, *Collective Management of Copyright and Related Rights*, p. 48; GERVAIS, 'The Economics of Collective Management', p. 499.

243 See the rules applied in France in NÉRISSON, 'Collective Management of Copyright in France', p. 186.

244 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 79.

245 Directive 2014/26/EU of the European Parliament and of the Council of 26 February 2014 on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market [2014] *OJ L 84/72 [hereinafter: CRM Directive], art. 13(1).*

F. Lobbying

CMOs can help to articulate the interests of authors, performers and publishers to the public. For example, in the US during the 1930s, ASCAP issued pamphlets and advertisements to gain public support for their collection of royalties.[246] ASCAP also promoted legal research on copyright by founding the Copyright Law Symposium, where the justifications and the benefits of copyright were discussed.[247]

"The organised power of a CMO" can help members push through their interests at a legislative level.[248] In 1836 the SACD pushed through the establishment of a commission to draft new rules of copyright and dispatched its members there.[249]

At an international level, the CMOs unite in organisations such as the *Confédération internationale des Sociétés des auteurs et compositeurs* (CISAC), established in 1926, or the *Bureau International des Sociétés gérant les Droits d'Enregistrement et de Reproduction Mécanique*, established in 1929. They can influence the development of copyright and CRM as they are accepted as a relevant party to discussions about initiatives or legal drafts on a global and supranational as well as national level.[250]

G. Cultural and Social Functions

Up to now, most of the functions of the CMOs that have been discussed are directly related to the licensing of works. But in continental Europe, the CMOs have also taken on cultural and social functions, which support the artistic community and benefit society.[251]

The social functions are related to the "social aspect of intellectual property"[252]. According to the German Constitutional Court, the social aspect lies in the fact that after its publication, an artwork enters the social space and

246 See the graphic reproductions in DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 117 and 120-122, Figures 11, 12A-F and 13.

247 DOMMANN, Authors and Apparatus: A Media History of Copyright, p. 119.

248 GRABER, 'Collective Rights Management, Competition Policy and Cultural Diversity: EU Law Making at a Crossroads', p. 36.

249 Their draft of a new copyright bill was not accepted, however. WALTER, *Die Oper ist ein Irrenhaus: Sozialgeschichte der Oper im 19. Jahrhundert*, p. 213.

250 For examples see CISAC, *Annual Report 2020* (May 2020), pp. 13-14.

251 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 20-21.

252 BVerfG, 25. 10. 1978, 1 BvR 352/71.

contributes to the cultural and mental image of the time.[253] According to Kohler, works of authorship influence the whole cultural universe; he writes of the eminent social nature of a work of authorship.[254] The fact that these works impact a wider community and that the interests of this community are often opposed to the interests of the author of a particular work leads to the setting of limitations on intellectual property rights.[255] The reason for the limitations for social purposes is the horizontal social bond, that is, the bond among authors.[256] Such a limitation can be seen in deductions from collected royalties that are used for social functions and in the existence of multipliers used to raise the value of culturally significant works.[257] Hviid et al. describe that this is where the collective component of CRM lies, namely in providing services in favour of the whole membership, such as social insurance, pensions and cross-subsidising between more and less popular works and genres.[258] The social and collective features are a key element of the CMOs' existence.[259] Graber refers to the "trade union-like spirit of solidarity" of CMOs.[260]

The social funds have a long history. In Germany, the social and support fund was already part of the AFMA, established in 1903.[261] At the beginning of the twentieth century, when CMOs started to spread in Europe, they were sometimes attacked as being for-profit organisations that hindered the flourishing of culture.[262] The German CMO GDT countered this

253 BVerfG, 25. 10. 1978, 1 BvR 352/71.

254 KOHLER JOSEPH, *Das Autorrecht: eine zivilistische Abhandlung: zugleich ein Beitrag zur Lehre vom Eigenthum, vom Miteigenthum, vom Rechtsgeschäft und vom Individualrecht*, Jena: G. Fischer, 1880, pp. 40 ff.

255 KOHLER, *Das Autorrecht: eine zivilistische Abhandlung: zugleich ein Beitrag zur Lehre vom Eigenthum, vom Miteigenthum, vom Rechtsgeschäft und vom Individualrecht*, p. 43.

256 MELICHAR FERDINAND, 'Zur Sozialbindung des Urheberrechts', in Adrian Johann / Nordemann Wilhelm / Wandtke Artur-Alex (eds), *Josef Kohler und der Schutz des Geistigen Eigentums in Europa*, Berlin: Berlin Verlag Arno Spitz, 1996, pp. 101-111, at pp. 105 ff.

257 MELICHAR, 'Zur Sozialbindung des Urheberrechts', pp. 105-106.

258 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', p. 266.

259 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', p. 266.

260 GRABER, 'Collective Rights Management, Competition Policy and Cultural Diversity: EU Law Making at a Crossroads', p. 39.

261 BECKER JÜRGEN, 'Verwertungsgesellschaften als Träger öffentlicher und privater Aufgaben', in Becker Jürgen / Lerche Peter / Mestmäcker Ernst-Joachim (eds), *Wanderer zwischen Musik, Politik und Recht*, Baden-Baden: Nomos Verlagsgesellschaft, 1994, pp. 27-51, at p. 33.

262 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 72.

critique by emphasising its cultural and social function.[263] Since the establishment of AFMA, 10 per cent of its income was used to support the fund for artists in need.[264]

After Germany, social funds were created in other countries as well. Later, after World War II, cultural funds emerged.[265] Up to this point, CMOs that made deductions from the collected royalties for cultural and social purposes used the money to promote national creativity, support new authors and finance cultural events.[266] CISAC acknowledged the practice of these deductions and allowed CMOs to deduct up to 10 per cent from the collected sum, even if part of it was collected on behalf of a CMO from another country.[267]

The social and cultural funds can also be seen as the means of self-financing of the system of art.[268] According to Graber, it is important that there are various channels of art financing, so that there is no dependence of artists on single sponsors.[269] Social and cultural funds are one of the channels that help diversify art funding.

Cultural functions can also strengthen the public acceptance of copyright. According to Ficsor, this function is especially important in developing countries, where the creative capacity is not yet fully unfolded.[270] Some tangible outcomes of financial support for culture can help to convince the public of the merits of protection of intellectual property.

263 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 72.

264 SCHMIDT/RIESENHUBER/MICKLER, 'Geschichte der musikalischen Verwertungsgesellschaften in Deutschland', p. 12. For more on the functions of the social and support funds see FECHNER FRANK, *Geistiges Eigentum und Verfassung*, Tübingen: Mohr Siebeck, 1999, p. 494.

265 MELICHAR FERDINAND, 'Der Abzug für soziale und kulturelle Zwecke durch Verwertungsgesellschaften im Lichte des nationalen Urheberrechts', in Becker Jürgen (ed), *Die Verwertungsgesellschaften im Europäischen Binnenmarkt*, Baden-Baden: Nomos Verlagsgesellschaft, 1990, pp. 47-61, at p. 47.

266 GRABER CHRISTOPH BEAT, 'Der Kunstbegriff des Rechts im Kontext der Gesellschaft', in Cottier Bertil (ed), *Liberté de l'art et l'indépendance de l'artiste*, Zürich: Schulthess, 2004, pp. 91-111, at p. 110.

267 BECKER, 'Verwertungsgesellschaften als Träger öffentlicher und privater Aufgaben', pp. 33-34; FICSOR, *Collective Management of Copyright and Related Rights*, p. 47.

268 GRABER, 'Der Kunstbegriff des Rechts im Kontext der Gesellschaft', p. 111.

269 The diversification of financing guarantees the independence of art as a social system. GRABER, 'Der Kunstbegriff des Rechts im Kontext der Gesellschaft', p. 104.

270 FICSOR, *Collective Management of Copyright and Related Rights*, pp. 21-22.

H. Fostering Creativity and Cultural Diversity

Economic analysis of copyright law generates arguments that copyright provides an incentive for creative production that would otherwise be suboptimal, i.e., too few creative works would be produced. The reason lies in the intangible and non-rival nature of many kinds of creative works. If it is not possible for authors to appropriate value from their work, they might not produce it in the first place.[271] Therefore, the activities of CMOs that enable rights holders to be remunerated for the use of works also foster creativity.

CRM can also foster cultural diversity, i.e., the manifold ways in which the cultures of groups and societies find expression,[272] which many states are committed to promoting.[273] The monopolistic position of CMOs, together with the obligation to represent every rights holder that fulfils the criteria for membership, disables cherry-picking of a lucrative repertoire on the part of CMOs. Providing repertory licences also serves to disable cherry-picking of the popular repertoire on the part of users, which also promotes cultural diversity.[274]

I. Providing Broad Access to Musical Works

Thanks to CMOs, users can easily obtain licences for works which they then distribute further to the wider public. Because the licence usually encompasses the whole repertoire, global digital service providers have no reason not to provide the end users with the broadest possible spectrum of music.[275] Thus, broad access to musical works is enabled.

271 LANDES WILLIAM M. / POSNER RICHARD A., *The Economic Structure of Intellectual Property Law*, Cambridge, MA / London: The Belknap Press of Harvard University Press, 2003, p. 40.

272 Convention on the Protection and Promotion of the Diversity of Cultural Expressions, 20 October 2005, 2440 U.N.T.S. 311 [hereinafter: Convention on the Protection and Promotion of the Diversity of Cultural Expressions], art. 4(1).

273 As of 2020, 148 states have ratified the Convention on the Protection and Promotion of the Diversity of Cultural Expressions.

274 GRABER, 'Collective Rights Management, Competition Policy and Cultural Diversity: EU Law Making at a Crossroads', p. 41; HANDKE, 'Collective Administration', p. 194; NÉRISSON SYLVIE, 'Remaining Scope for Collective Management of Copyright in the Online World' in Liu Kung-Chung / Hilty Reto M. (eds), *Remuneration of Copyright Owners: Regulatory Challenges of New Business Models*, Berlin: Springer, 2017, pp. 71-83, at p. 77.

275 See p. 30.

Another relevant factor in providing broad access to musical works is that the CMOs must represent every rights holder that fulfils reasonable criteria. If this were not the case, CMOs might accept much fewer members than is optimal for maximising social welfare.[276] Therefore the rules of membership can be an object of supervision in cases where CRM is the only realistic choice.[277] In the US since 1941, the US Department of Justice has overseen ASCAP and BMI with the help of consent decrees, which constrain the activities of the CMOs due to antitrust requirements, and has also regulated the rules of membership. Any author who meets the minimum requirements can become a member.[278]

If CRM is not the only realistic choice and rights holders can license individually, the situation changes. In Europe, the new CRM Directive enables rights holders to withdraw their rights from CRM.[279] This threatens to disrupt the function of providing broad access to musical works, as the rights holders are not obliged to provide any licence for their content (in contrast to CMOs).[280] Publishers may also decide to provide exclusive licences.[281] Therefore, Leška argues, it is desirable for CMOs to be "allowed to require obligatory membership of rightholders for their full repertoire in the whole scope of collectively administered rights,"[282] as this allows more creative works to be accessed and subsequently more sources of inspiration to be available for further creativity in general.[283]

276 See the economic analysis in WATT, 'Copyright Collectives: Some Basic Economic Theory', pp. 174-175.

277 See FICSOR, *Collective Management of Copyright and Related Rights*, pp. 141 and 143.

278 'Music Licensing: The ASCAP and BMI Consent Decrees', Congressional Research Service (17 March 2020).

279 More in the following Chapter 1.IV.

280 LEŠKA RUDOLF, 'Globalization of Collective Rights Management and the Role of National CMOs' in Synodinou Tatiana Eleni (ed), *Pluralism or Universalism in International Copyright Law*, Alphen aan den Rijn: Wolters Kluwer, 2019, pp. 97-116, at p. 111.

281 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 112.

282 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 113.

283 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 111.

J. Facilitating Freedom of Expression

CRM can also contribute to creating good conditions for free expression. By facilitating broad access to creative works and fostering cultural diversity, it helps create a diverse offering of content and views, which is a necessary prerequisite for individual freedom of expression.[284]

K. Creating Order

Earlier, at times when the emergence of new media gave rise to new rights and brought more complexity into the licensing process,[285] it was argued that CMOs were able to master this complexity. ASCAP used the argument of "creating order in the unclear and chaotic music industry" in its pamphlet in 1934.[286] In Germany in 1933, the music market was described as chaotic but it was claimed that the CMO was able to deal with this chaos.[287]

Since the 1930s, even more rights have been created and licensing has become even more complex, which means that the argument is still valid. However, the difficulty of the licensing process is also down to the complex system of CRM.[288] It seems that what was intended to be a solution to a problem can eventually exacerbate the same problem.

L. Conclusion

The list of the functions of CMOs illustrates what is at stake when discussing CRM. This will be particularly relevant when looking at the possible implications of blockchain technology for the music industry and CRM in Chapter 2. In what follows, the most recent development in the distribution of music that has caused significant changes in the regulation of CRM will be discussed: streaming.

284 GRABER CHRISTOPH BEAT, 'Copyright and Access – a Human Rights Perspective' in Graber Christoph Beat / Govoni Carlo / Girsberger Michael / Nenova Mira (eds), *Digital Rights Management: The End of Collecting Societies?*, Berne: Staempfli, 2005, pp. 71-110, at p. 107.

285 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 70.

286 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, pp. 118-119.

287 DOMMANN, *Authors and Apparatus: A Media History of Copyright*, p. 119.

288 See HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', pp. 263 ff.

IV. Streaming of Music and Licensing

A. The Impact of Streaming

Widespread access to broadband Internet, together with the development of compressed audio formats, has contributed to a significant change in music listeners' habits.[289] Streaming became a popular form of music consumption and thus influenced the business models in the music market.[290] The model of selling copies of works, which had been the basic form, was largely replaced by providing temporary *access* to music.[291] The online streaming services usually offer a free subscription, which contains advertisements, or a flat-rate subscription without advertisements.[292] When online streaming services provide a free ad-based subscription to the consumers, they act as platforms. This means that they establish a framework for two distinct groups of users to interact, namely the music consumers and the advertisers.[293] The consumers are attracted by the licensed music and the access provided to it while the advertisers are attracted by the data on consumers' behaviour that is collected and analysed.[294]

Streaming as the new method of music distribution has impacted how rights holders earn money. For the record industry, streaming became the main source of revenue.[295] The streaming services providers negotiate with

289 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 97.

290 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 97.

291 TSCHMUCK PETER, *Creativity and Innovation in the Music Industry*, Berlin, Heidelberg: Springer, 2012, p. 192.

292 TSCHMUCK, Creativity and Innovation in the Music Industry, p. 192.

293 TOWSE RUTH, 'Dealing with Digital: The Economic Organisation of Streamed Music' (2020) *Media, Culture & Society*, pp. 1461-1478, at p. 1464.

294 TOWSE, 'Dealing with Digital: The Economic Organisation of Streamed Music', pp. 1464-1465.

295 The *Recording Industry Association of America* (RIAA) declares that revenues from music streaming (from interactive as well as non-interactive services) made up 83 per cent of the US record industry's total revenues in 2020. FRIEDLANDER JOSHUA P., 'Year-End 2020 RIAA Revenue Statistics' (2021).

the record labels and publishers or CMOs what percentage of their revenues from subscriptions or advertisements will be forwarded to the labels and publishers or CMOs.[296] The labels then forward a certain amount to the performers depending on their mutual contract and the CMOs forward the royalties to the publishers and songwriters. Usually, the total amount of revenue that the streaming services pay out to the rights holders is divided by the total amount of streams. The result is a rate per stream, which is multiplied by the total amount of streams of each musical work to set what the royalties to the respective rights holders will be.[297] Recently, the streaming service SoundCloud started applying a different revenue model, whereby the revenue from the subscription of each music listener is divided only among the rights holders of the music they listen to.[298]

Apart from changing the business models and the sources of rights holders' income, streaming has also influenced CRM. The following section will describe the licensing process for both interactive and non-interactive streaming services in Europe and the US and how it has been challenging CRM.

B. Licensing of Musical Works by Streaming Services

Licensing music for streaming is a complex process. First, copyright is a bundle of rights, so there can be several rights to one musical work. Second, there can be various rights holders ("co-rights holders") to each right. Third, the rights and the rights holders may vary according to the territory, language or type of media. In the case of streaming, different rights clearance is required for interactive and non-interactive streaming. This phenomenon that makes rights clearance so complex is called fragmentation.[299] In addition, the rights

296 Roughly 70 per cent of the on-demand streaming services' revenues are sent to the rights holders, both for musical compositions and sound recordings. RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 14.

297 See PASTUKHOV DMITRY, 'What Music Streaming Services Pay Per Stream (And Why It Actually Doesn't Matter)' (27 June 2019).

298 APPLEFELD OLSON CATHY, 'Are Music Streaming Companies Finally Ready To Change The Way They Pay Artists?' (3 March 2021) *Forbes*.

299 GERVAIS DANIEL, 'Collective Management of Copyright: Theory and Practice in the Digital Age' in Gervais Daniel (ed), *Collective Management of Copyright and Related Rights*, Alphen aan den Rijn: Wolters Kluwer, 2016, pp. 3-30, at p. 4.

holders can assign their rights to or be represented by various entities, such as publishers, record labels or CMOs, with which users have to transact to clear all rights properly.

When streaming services acquire licences for the musical works they want to offer, they have to clear 1) rights of the authors of the musical compositions, i.e., composers and lyricists (often assigned to publishers) and 2) rights of the performers and producers of sound recordings. The rights that need to be cleared and the form of the clearance also depend on the type of streaming, interactive or non-interactive. Although the focus will be on interactive streaming throughout the thesis, licensing for non-interactive streaming will be briefly discussed below.

1. Non-Interactive Streaming

Non-interactive streaming is when the consumers cannot influence what musical works are going to be played. In the EU, the following rights have to be cleared. First, the authors' right of reproduction[300] and the right of communication to the public[301]; second, the performers' right of reproduction[302] and the right of communication to the public[303]; and lastly, the reproduction right[304] and the right of communication to the public[305] of the phonogram producers. In the case of non-interactive streaming services, the performers and phonogram producers only have a right to equitable remuneration regarding the right of communication to the public, which means that they cannot prohibit such use.[306] Conversely, authors have an exclusive right of communication to the public, and thus they can prohibit such use.[307] In the

300 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 [2001] OJ L 167/10 [hereafter: InfoSoc Directive], art. 2(a). The right of reproduction is needed, as in the process of online distribution, various copies of the works are made.

301 InfoSoc Directive, art. 3(1).

302 InfoSoc Directive, art. 2(b).

303 Directive 2006/115/EC of the European Parliament and of the Council of 12 December 2006 on rental right and lending right and on certain rights related to copyright in the field of intellectual property [2006] OJ L 376/28 [hereinafter: Rental and Lending Directive], art. 8(2).

304 InfoSoc Directive, art. 2(c).

305 Rental and Lending Directive, art. 8(2).

306 Rental and Lending Directive, art. 8(2).

307 InfoSoc Directive, art. 2(a) and 3(1).

US, regarding musical works, only the right of public performance has to be licensed.[308] Regarding the sound recordings, both reproduction and public performance rights have to be cleared.[309]

2. Interactive Streaming

Interactive or on-demand streaming enables consumers to choose the musical works to listen to. This possibility to access works from a place and at a time individually chosen by consumers is, in the EU, used to constitute a subcategory of the more general right of communication to the public, namely the right of making available.[310] This exclusive right needs to be cleared in addition to the reproduction rights of authors[311], performers[312] and phonogram producers[313]. In the US, the interactive streaming services need to obtain a mechanical licence (the right to reproduce) and a public performance licence for the musical compositions as well as the sound recordings.[314]

3. Negotiation of Licences and Payment Flows

The licences have to be obtained from the rights holders or from their representatives. The rights holders include artists (songwriters and performers) as well as publishers and record labels, and CMOs if the rights are transferred to them[315]. Copyright emerges when a musical work is created by the songwriters. Afterwards, they decide whether they want to publish their work on

308 LOREN LYDIA PALLAS, 'Copyright Jumps the Shark: The Music Modernization Act' (2019) *Boston University Law Review*, pp. 2519-2550, at pp. 2529 and 2532.

309 For both categories of rights there are statutory licences administered by the CMO SoundExchange. SoundExchange pays out statutory rates: 50 per cent to record labels, 45 per cent to performers and the rest to background musicians. The rates of the licences are set by the Copyright Royalty Board. LOREN, 'Copyright Jumps the Shark: The Music Modernization Act', p. 2539. RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', pp. 4 and 14.

310 InfoSoc Directive, art. 3(1) and 2(a)-(b); GOLDSTEIN/HUGENHOLTZ, *International Copyright: Principles, Law and Practice*, p. 313.

311 InfoSoc Directive, art. 2(a).

312 InfoSoc Directive, art. 2(b).

313 InfoSoc Directive, art. 2(c).

314 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 10.

315 CMOs either become rights holders as the artists transfer the rights to them or they only represent the artists who keep the rights with them. See FICSOR, *Collective Management of Copyright and Related Rights*, p. 42.

their own or whether they want to enter into a contract with a publisher who can help with obtaining a recording or searching for opportunities to monetise the work.[316] In the case of an exclusive representation, the publisher usually pays the artist an advance, the amount being recouped from future royalties.[317] The songwriters and the publisher can also enter into a co-publishing agreement, which means that they share the publishing rights, and agree on how the royalties from the publishing rights (the performing and mechanical royalties) will be split among them.[318] The mechanical and performing rights are usually licensed by CMOs, which provide a licence for their whole repertoire.[319] In the case of streaming, this means that the streaming services pay royalties to the CMOs, which distribute them further to the rights holders.[320] The royalty amount is negotiated between the streaming services and the publishers or the CMOs;[321] in the US, the mechanical royalties are set by the Copyright Royalty Board.[322]

Creation of a musical work does not suffice; the musical work also needs to be performed and recorded in order to reach the ears of listeners. The recording is usually done in a well-equipped record studio owned by a record label. Performers usually contract with a record label, which then licenses the rights to the sound recordings.[323] The streaming services negotiate an individual agreement with the labels, or with the bodies representing a range of independent labels (such as Merlin),[324] for the purpose of interactive streaming.[325] Performers and record labels get a larger share of the stream-

316 WEISSMAN DICK, *Understanding the Music Business: Real World Insights*, New York, London: Routledge, 2017, p. 133.

317 TOWSE, 'Dealing with Digital: The Economic Organisation of Streamed Music', p. 1463.

318 WEISSMAN, Understanding the Music Business: Real World Insights, pp. 136-137.

319 SCHWEMER SEBASTIAN FELIX, 'The Licensing of Online Music Streaming Services in Europe' in Watt Richard (ed), *Handbook on the Economics of Copyright: A Guide for Students and Teachers*, Cheltenham, UK; Northampton, MA: Edward Elgar Publishing, 2014, pp. 141-164, at p. 146.

320 TOWSE, 'Dealing with Digital: The Economic Organisation of Streamed Music', p. 1463.

321 TOWSE, 'Dealing with Digital: The Economic Organisation of Streamed Music', p. 1463.

322 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 18.

323 SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', pp. 144 and 147.

324 TOWSE, 'Dealing with Digital: The Economic Organisation of Streamed Music', pp. 1465 and 1470.

325 SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', pp. 147 and 149; RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 14.

ing services' revenues than the authors of musical works.[326] The record labels distribute a share of the received fees to the performers, depending on their mutual contract.[327] Often, the musicians receive an advance that is recoupable from their royalties.[328]

4. Recent Development of Legal Regulation of CRM and the Consequences Thereof

In Europe, the CRM of rights in musical works for online use has gone through important changes due to the interventions of the European Commission since the 2000s. At first, when looking for an efficient way to provide online music services with licences, the national CMOs entered into reciprocal representation agreements (RRAs) with each other, which enabled them to provide licences for use of the world's music repertoire for their domestic territory.[329] Thus, in order to clear rights for the world repertoire and the whole of Europe, the user had to apply for a licence at each European national CMO. In order to create a vibrant market for online exploitation of copyright across the European Community,[330] in 2005 the European Commission recommended a licensing policy that would be multi-territorial[331] and would enable rights holders to freely choose the CMO managing any of their "online rights necessary to operate legitimate online music services".[332] In other words, it recommended creating competition among CMOs over rights holders,[333] i.e.,

326 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 10.

327 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 14.

328 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', pp. 6 and 14.

329 The basis was the Santiago agreement for licensing of the public performance right and the Barcelona agreement for licensing of the reproduction right with regard to the online use of music. SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', p. 151.

330 Commission Staff Working Document: Impact Assessment Reforming Cross-Border Collective Management of Copyright and Related Rights for Legitimate Online Music Services [2005] SEC(2005) 1254.

331 Commission Recommendation 2005/737/EC of 21 October 2005 on the collective cross-border management of copyright and related rights for legitimate online music services [2005] OJ L 276/54 [hereinafter: Commission Recommendation 2005/737/EC], recital 8.

332 Commission Recommendation 2005/737/EC, recital 9 and art. 3.

333 The debate preceding the issue of the Recommendation is described in SCHWEMER SEBASTIAN FELIX, *Licensing and Access to Content in the European Union: Regulation between Copyright and Competition Law*, Cambridge, UK / New York, NY: Cambridge University Press, 2019, pp. 125-126.

the authors and performers of a musical work as well as the successors in title such as publishers.[334] As a result of the way outlined in the Recommendation, there could be more than only one CMO per territory managing certain rights.[335] Through this unbinding Recommendation, the Commission was nudging the stakeholders to find other solutions for multi-territorial licensing than the RRAs. In 2008, the Commission decided that several aspects of the RRAs among the European CMOs licensing the right of public performance for online use were leading to territorial delineation, whereby each CMO could license the repertoire of another CMO only on its domestic territory, which infringed EU competition law, and thus the Commission prohibited such conduct.[336] The General Court of the European Union partly annulled the Commission's decision in 2013, but the CMOs were already on the way to adapting to the conditions of more competition by that time.[337]

The Commission's Recommendation probably accelerated the decision of several rights holders to withdraw parts of their repertoire from the national CMOs.[338] Since 2007, the major publishers[339] have withdrawn the mechanical rights for online use to their Anglo-American repertoire from the national CMOs;[340] these publishers are referred to as 'option 3 publishers'.[341] They appoint their rights to licensing entities, which are often established as subsidiaries of one or more CMOs.[342] A current example of such an entity is *SOLAR Music Rights Management*, which has been administering the Anglo-American catalogue of Sony/ATV and EMI Music Publishing since 2014 (re-

334 The fact that the Commission did not distinguish between the creators and successors in title was subject to criticism. See GRABER, 'Collective Rights Management, Competition Policy and Cultural Diversity: EU Law Making at a Crossroads', p. 39.

335 SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', p. 153.

336 Summary of Commission Decision of 16 July 2008 relating to a proceeding under Article 81 of the EC Treaty and Article 53 of the EEA Agreement (Case COMP/C-2/38.698 – CISAC) [2008] OJ C 323/12.

337 See LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', pp. 101-104.

338 SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, pp. 57-58.

339 There are three major publishing houses operating at a global level. For more see Chapter 3.III.D.

340 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 102; SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', p. 153.

341 On the origin of this term see SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, pp. 125-126.

342 SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, p. 141.

placing two former entities which have joined: the *Centralised European Licensing and Administrative Services GmbH*, formed in 2007 and jointly owned by GEMA and *PRS for Music*, and the *PAECOL GmbH* [*Pan-European Central Online Licensing*], also formed in 2007, a subsidiary of GEMA).[343] Another example is *Pan-European Digital Licensing*, an initiative of the publisher Warner/Chappell Music, which authorises several European CMOs on a non-exclusive basis to administer pan-European licences for its Anglo-American repertoire.[344] Universal co-operates with SACEM on licensing its repertoire through the *Direct European Administration and Licensing*[345] and BMG appointed GEMA to manage the rights to their Anglo-American repertoire, which is realised through GEMA's subsidiary, the *Anglo-American Rights European Service Agency*[346]. The Pan-European Licensing Initiative of Latin American Repertoire, which licenses the Latin repertoire of Sony/ATV, is affiliated with the Spanish organisation *Sociedad General de Autores y Editores* (SGAE).[347] IMPEL (*Independent Music Publishers' European Licensing*) used to entrust *PRS for Music* with the management,[348] but later became a CMO itself, licensing the mechanical rights of independent publishers.[349] Due to the fragmentation of repertoires, it became necessary to approach more entities to get a global licence for a global repertoire; all the national CMOs plus all the other entities licensing on a pan-European basis, and this even for the purpose of national, non-multi-territorial use.[350]

In 2014, the new Directive on collective management of copyright and related rights and multi-territorial licensing of rights in musical works for online use in the internal market (CRM Directive) was adopted. It further promotes multi-territorial and multi-repertoire licensing of online rights in musical works much in the sense of the Recommendation. In Title I, it codifies that rights holders shall have the right to authorise a CMO of their choice to manage the rights of their choice (not only "the online rights necessary to

343 WOLF ALEXANDER, 'GEMA, PRS und Sony/ATV heben Joint Venture Solar aus der Taufe' (25 September 2014) *Musikwoche*.

344 'Warner/Chappell Music Launches Its Pan-European Digital Licensing (P.E.D.L.) Initiative' (2 June 2006) *Warner Music Group*.

345 'Universal Partners With SACEM For Pan-Euro Licenses' (28 January 2008) *Billboard*.

346 See ARESA (19 November 2021).

347 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 103.

348 SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', pp. 154–155.

349 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 103.

350 SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', p. 156.

operate legitimate online music services"[351] as the Recommendation 2005/737/EC stated).[352] With regard to the multi-territorial online licensing of musical works, in Title III, it regulates only CRM of authors' rights, not CRM of related rights. It introduces what is referred to as the 'European Licensing Passport' model, which supports voluntary aggregation of the CMO repertoires for multi-territorial licensing.[353] The passport mechanism enables a CMO that does not want to grant multi-territorial licences to request another CMO that already grants or is offering to grant multi-territorial licences in the repertoire of other CMOs to represent them and the requested CMO is obliged to accept the request.[354] The mandate for multi-territorial licensing should not prevent the national CMO from continuing to license local uses.[355] The Directive does not apply to the mono-repertoire licensing entities and most probably not to the option 3 publishers either.[356] In the third part of the CRM Directive, it is repeated that rights holders can withdraw their online rights from a CMO that does not offer multi-territorial licensing and entrust another CMO or licensing entity with their management, or manage them individually, unless there is a mandatory collective management in their country, in which case they can entrust another CMO with the management.[357]

Under this legal framework, and even before, a few licensing hubs emerged in Europe. The hubs provide multi-territorial licences for the repertoires of the participating national CMOs. The first licensing hub was *Armonia*, which is an alliance of eight European national CMOs (Austrian AKM, French SACEM, Spanish SGAE, Italian *Società Italiana degli Autori ed Editori*, Portuguese *Sociedade Portuguesa de Autores*, Belgian *Société d'Auteurs Belge – Belgische Auteurs Maatschappij* and Hungarian *Artisjus*) licensing musical works for streaming. Another licensing hub is *ICE*, which provides multi-territorial online licences for the repertoire of the German GEMA, British *PRS for Music* and Swedish *Svenska Tonsättares Internationella Musikbyrå*.[358]

351 Commission Recommendation 2005/737/EC, art. 3.

352 CRM Directive, art. 5(2); SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, p. 148.

353 SCHWEMER, 'The Licensing of Online Music Streaming Services in Europe', p. 158.

354 CRM Directive, art. 30.

355 CRM Directive, recital 46.

356 SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, pp. 141-144.

357 CRM Directive, recital 19(2) and art. 31.

358 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 104.

Nordisk Copyright Bureau is a one-stop shop of the Nordic CMOs (Denmark, Iceland, Sweden, Finland, Norway).[359] Another alliance that covers US participants is *Mint*, a joint venture of the Swiss *SUISA* and the US SESAC, which administers and processes the licences for online use of musical compositions ('back office') while leaving the 'front office', i.e., negotiation of licences, with the CMOs.[360]

The CRM Directive also takes into account independent management entities (IMEs), which are, in contrast to the CMOs, organised on a for-profit basis and not controlled by rights holders. Rights holders are free to entrust such organisations with management of their rights.[361] There are not many IMEs;[362] the most well-known IME is *Soundreef*, which represents all categories of rights of authors and publishers, including the online rights.[363]

To sum up, the CRM Directive does not solve the problem of fragmentation of repertoires. It promotes the emergence of new licensing entities, such as the licensing hubs or IMEs. The clearance of rights is still very complex for the users due to fragmentation of repertoires. On top of that, Hviid et al. found that users often do not receive precise information from the CMOs about what repertoire their licences cover.[364] Users are dependent on CMOs though, as they do not have access to the databases of works to search for this information themselves.[365] It is also cumbersome to identify the entities that have to be contacted, as there is no official list of them.[366] All in all, there are more entities that have to be contacted due to licensing than before. There is no blanket licence on the pan-European level and thus the users are exposed

359 SCHWEMER SEBASTIAN FELIX, 'Emerging Models for Cross-Border Online Licensing' in Riis Thomas (ed), *User Generated Law: Re-Constructing Intellectual Property Law in a Knowledge Society*, Cheltenham, UK / Northampton, MA: Edward Elgar, 2019, pp. 77-98, at p. 85.

360 See SUISA (16 December 2021).

361 CRM Directive, recital 15.

362 KLOBUČNÍK LUCIUS, 'Navigating the Fragmented Online Music Licensing Landscape in Europe – A Legislative Compass in Sight?' (2019) *Journal of Intellectual Property, Information Technology and E-Commerce Law*, pp. 340-357, at p. 349.

363 As of 2021, *Soundreef* has represented over 43,000 songwriters and publishers. Soundreef (16 December 2021).

364 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', pp. 262-263.

365 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', pp. 263-264.

366 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', pp. 264 and 265.

to higher transaction costs when identifying the rights holders.[367] However, the market of music licensors has probably not consolidated yet, and it is still to be seen if the goal of voluntary aggregation of repertoires (and thus lowering the number of licensing entities) will be reached.[368]

In the US, there have also been some recent changes regarding licensing mechanical copies of musical works. In 2018, the Music Modernization Act (MMA) was adopted, which established a blanket licence for the right of reproduction and distribution that now needs to be obtained in order to provide interactive streaming services, as the MMA defined interactive streaming as both a mechanical copy and a public performance.[369] The advantage of the blanket licence is that it covers even works whose authors cannot be found. This, together with the establishment of the Music Licensing Collective (MLC), which administers the blanket licence, reduces transaction costs.[370] The royalties collected by the MLC are distributed to the copyright owners, which often means solely to publishers, not to the songwriters who had transferred the copyright. The MMA also subjects sound recordings that have been published before 1972 to statutory licences, the royalties thereof being paid to the SoundExchange.[371]

There has also been some development among performing organisations in the US, which administer the performing rights of authors of musical compositions. In 2013, a new organisation, *Global Music Rights*, was established. It represents only the most popular musicians, and because it is not regulated like ASCAP or BMI, it can demand higher royalties.[372] It is not a traditional CMO. It cherry-picks the successful artists and thus provides licences only to the popular repertoires.

Such a development does not promote solidarity among authors, but in the US this has never been the goal of CRM, unlike in the EU. The new EU policy that fosters competition between CMOs works rather against the prin-

367 HVIID/SCHROFF/STREET, 'Regulating CMOs by Competition: An Incomplete Answer to the Licensing Problem?', p. 264. Leška also argues that due to the emergence of licensing hubs in the EU, the transaction costs have risen. LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 111.

368 SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, p. 159.

369 LOREN, 'Copyright Jumps the Shark: The Music Modernization Act', p. 2528.

370 LOREN, 'Copyright Jumps the Shark: The Music Modernization Act', p. 2528.

371 Apparently, as most of the performers of those recordings are already dead, this provision supports mainly the commercial activity of record labels, not the creative performance of the artists. LOREN, 'Copyright Jumps the Shark: The Music Modernization Act', p. 2523.

372 SCHWEMER, 'Emerging Models for Cross-Border Online Licensing', p. 87.

ciple of solidarity and the policy of promoting cultural diversity,[373] though the latter is repeated in Recital 3 of the CRM Directive.[374] In general it can be said that the development of regulation in the EU was based on considerations within the framework of competition policy. The framework of cultural policy was not in the focus, as many have criticised.[375] In this complex environment, where cultural diversity and creators' interests give way to competition policy and the interests of successors in title, blockchain has entered the scene and inspired new visions among some stakeholders and scholars of how licensing of musical works might work better. This topic will be discussed in the following chapter.

373 LEŠKA, 'Globalization of Collective Rights Management and the Role of National CMOs', p. 112.

374 The second sentence states: "Collective management organisations play, and should continue to play, an important role as promoters of the diversity of cultural expression, both by enabling the smallest and less popular repertoires to access the market and by providing social, cultural and educational services for the benefit of their rightholders and the public." CRM Directive, recital 3.

375 See the summary in SCHWEMER, *Licensing and Access to Content in the European Union: Regulation Between Copyright and Competition Law*, p. 129.

Chapter 2:
Promises of Blockchain

The public discourse on the potentials of blockchain for music began in the Anglo-American environment in December 2014. That was when the American musician, investor and 'artist in residence' at Spotify, D. A. Wallach, argued in an online article in the *Wired* magazine that the technology behind Bitcoin could help solve the "incredibly boring" problems of the music industry.[376] This article has often been referred to since and is seen as the first to raise awareness of the possible implications of blockchain for the music industry.[377] The problems Wallach pointed to were 1) the difficulty of identifying all rights holders to a work, 2) the resulting difficulty for users to license music, 3) the inability of creators to have a clear picture of their earnings, such as how much they earn for which work and for what kind of use and 4) the costly administration of rights. These problems are rooted in the fragmentation of databases of the metadata that do not sync, the fragmentation of rights and the resulting complexity of rights management, as well as outdated IT systems.[378]

Wallach envisioned a "potentially fascinating" solution to these problems with the help of the Bitcoin architecture.[379] By the Bitcoin architecture he meant blockchain. He suggested designing a platform that would serve 1) as an open global registry of rights ownership that would contain accurate information and 2) as an infrastructure for routing payments to rights owners.[380]

376 D. A. WALLACH, 'Bitcoin for Rockstars' (10 December 2014) *Wired*.

377 HOWARD GEORGE, "'Bitcoin for Rock Stars' a Year Later: An Update from D. A. Wallach on Blockchain and the Arts Part 1' (25 September 2015) *Forbes*.

378 D. A. WALLACH, 'Bitcoin for Rockstars'.

379 D. A. WALLACH, 'Bitcoin for Rockstars'.

380 D. A. WALLACH, 'Bitcoin for Rockstars'.

The database would be decentralised, managed by a high number of entities that would be motivated 'by design' to contribute data.[381] Each payment for work could also initiate automatic redistribution of it among the rights holders.[382] Such a platform would solve the above-mentioned problems, as it would finally be possible to find all metadata in a single source, the remuneration of rights holders would become clearer and cheaper, and licensing music would become easier.

Although Wallach was not writing directly about problems of CRM, he mentioned that the ideas were "relevant to state copyright management and to other media businesses, where similar complexity exists around credits, rights and payments."[383] It could be said that he opened up the topic of blockchain and CRM with this statement. Before considering how discussion of the topic has developed, the next section explains the relevant characteristics of blockchain technology.

I. What Is Blockchain?

Blockchain gained popularity after 2008. That year the author(s) under the pseudonym Satoshi Nakamoto published the paper *Bitcoin: A Peer-to-Peer Electronic Cash System*.[384] The concept of blockchain is described there using the example of Bitcoin, the now famous cryptocurrency and the first widely adopted application of blockchain.[385] The innovations lie in the fact that the persons transacting do not rely on a specific trusted party such as a bank, but on a distributed system that 'enforces' trustworthy output through its code.[386]

Different kinds of blockchains can have different functionalities, but blockchain is a system of ledgers[387] that can store any kinds of data and checks that the newly entered data is consistent with previous records.[388]

381 D. A. WALLACH, 'Bitcoin for Rockstars'.

382 D. A. WALLACH, 'Bitcoin for Rockstars'.

383 D. A. WALLACH, 'Bitcoin for Rockstars'.

384 NAKAMOTO SATOSHI, 'Bitcoin: A Peer-to-Peer Electronic Cash System' (2008).

385 WERBACH KEVIN, *The Blockchain and the New Architecture of Trust*, Cambridge, MA: MIT Press, 2018, pp. 2-3 and 54.

386 WERBACH, *The Blockchain and the New Architecture of Trust*, p. 29.

387 DRESCHER DANIEL, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, New York: Apress, 2017, p. 35.

388 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 314.

The data is structured into blocks and the blocks are connected into a chain, hence the name blockchain.[389] The same database is stored in several storage points, such that many copies of the same database exist.[390] The following chapters will describe the functioning first of a permissionless and open blockchain and then of the permissioned and private versions of blockchain. The difference between these needs to be clarified before discussing how blockchain can be applied in the music industry.

A. Permissionless/Open Blockchain

This kind of blockchain is familiar due to the example of the Bitcoin cryptocurrency that runs on it. It is open for anyone to join, either as a user who is transacting with the cryptocurrency, or as an entity helping to run the blockchain, a node and a miner. In other words, no permission is needed to take part in the network,[391] therefore this type of blockchain is called permissionless.

The example of the Bitcoin network will frequently be used to describe the characteristics of a permissionless blockchain. First, the user's perspective will be discussed. The users usually own a 'wallet' in order to access the blockchain-based marketplace.[392] Opening a wallet means obtaining a public key, which is used for receiving payments from others,[393] and a private key, which must be held in secret because it is used to initiate transactions and to authenticate the owner of the wallet.[394] The private key must never be lost, otherwise the whole 'content' of the wallet becomes inaccessible.[395] The wallet services are offered by third parties and a user can choose which one they will use as an intermediary in order to access the Bitcoin network.[396]

As already noted, the database of transactions is not saved in one central point, but in several storage points. These are called nodes. Each of them

389 TRESISE ANNABEL / GOLDENFEIN JAKE / HUNTER DAN, 'What Blockchains Can and Can't Do for Copyright' (2018) *Australian Intellectual Property Journal*, pp. 144-157, at p. 145.

390 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 60.

391 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 31.

392 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 21.

393 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 99.

394 WERBACH, *The Blockchain and the New Architecture of Trust*, p. 40.

395 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, pp. 206-207.

396 See BACON JEAN / MICHELS JOHAN DAVID / MILLARD CHRISTOPHER / SIGH JATINDER, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers' (2018) *Richmond Journal of Law and Technology*, pp. 18-19.

stores the whole database of transactions.[397] The nodes are connected through a peer-to-peer (P2P) network, which means that there is no central node to which every other node is connected and which coordinates them all (as would be the case with a centralised network), but every node is connected to a random set of other nodes with which it can communicate.[398] All the nodes are equal (peers).[399] As a result, there is no 'single point of failure' which might shut the whole network down.[400] In the case of Bitcoin, the nodes share information about new blocks containing new transactions. In this way, all the nodes gradually get updated about new transactions.[401]

In order to attach a block to the chain, the block has to be 'mined'.[402] This is the task of miners. There are different ways of mining, in the case of Bitcoin a computationally demanding numeric problem needs to be solved. The procedure is the following: the initiated transactions that are gathered into a block serve as input for an algorithm, which produces a hash as an output.[403] A hash is a number of a fixed size[404] (e.g. 6B374F51, which is a 32-bit number in a hexadecimal system). Any change in the input changes the hash.[405] The Bitcoin network demands that the hash of every block begins with a certain amount of zeros.[406] In order to achieve such a hash, a specific nonce has to be added to the input of the hash function.[407] The miners need a lot of computing power to discover that nonce in a reasonable amount of time, because they can only find it by trial and error.[408] The miner that solves the puzzle first sends the solution to all other nodes, so that they can verify it. In this way, the miner proposes a new block to be added.[409]

397 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 198.

398 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 11; NARAYANAN ARVIND / BONNEAU JOSEPH / FELTEN EDWARD / MILLER ANDREW / GOLDFEDER STEVEN, *Bitcoin and Cryptocurrency Technologies*, Princeton: Princeton University Press, 2016, p. 67.

399 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, pp. 14-15.

400 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 12.

401 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, pp. 159-160.

402 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, pp. 23-24.

403 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, pp. 89-90.

404 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 74.

405 WEISSTEIN ERIC W., 'Hash Function'.

406 NAKAMOTO, 'Bitcoin: A Peer-to-Peer Electronic Cash System', p. 3.

407 NAKAMOTO, 'Bitcoin: A Peer-to-Peer Electronic Cash System', p. 3.

408 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 91.

409 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 160.

Verification of the block's hash is now not as computationally demanding[410] and every node does that before adding the block to the chain.[411] In addition, the nodes control whether the transactions are in line with those in previous blocks, i.e., whether a user is trying to transfer bitcoins that they actually do not have (so-called double-spending problem[412]); if the transactions fulfil this requirement, the nodes add the new block to their database.[413] In this way the database gets updated by all nodes and it is verified that the blocks are valid. In the end, the miner who successfully solves the puzzle and proposes a block that is accepted by the majority of nodes gets rewarded with eventual transaction fees paid by users, but most importantly with newly created bitcoins.[414] This is how miners are incentivised to take part in mining and also the way the currency is created.[415] The fact that solving the puzzle is computationally very difficult discourages dishonest behaviour. It would require over 51 per cent of the hashing power of the whole system to outvote the rest of the network and push through blocks involving fraudulent transactions.[416] If two miners happen to solve the puzzle simultaneously and as a consequence there are two different versions of the chain, a short time will tell which of the versions will become the valid one. Generally it will be the one in which the higher amount of proof-of-work has been invested, as the consensus protocol of the nodes checks for this criterion.[417]

Perspicacious readers can already see how the database is tamper-resistant. Because the input data of the hashing algorithm affects the output, a look at the block's hash can inform an observer whether its content was tampered

410 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 92.

411 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, pp. 158–159.

412 NARAYANAN/BONNEAU/FELTEN/MILLER/GOLDFEDER, *Bitcoin and Cryptocurrency Technologies*, p. xiv.

413 Miners also verify transactions as they are motivated by their proposed block getting accepted by the nodes. BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', p. 20; DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 26.

414 See BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', pp. 20–21; WERBACH, *The Blockchain and the New Architecture of Trust*, p. 47.

415 WERBACH, *The Blockchain and the New Architecture of Trust*, p. 47.

416 BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', p. 27; WERBACH, *The Blockchain and the New Architecture of Trust*, pp. 44–45.

417 In their whitepaper, Nakamoto supposed that it will be the longest chain that will fulfil this criterion, but it does not always have to be so. HOWELL AVA, 'The Longest Blockchain is not the Strongest Blockchain' (21 May 2019).

with.[418] In addition, the hash is not only dependent on the input of a specific block, but also on the hash of the previous block. It thus proves the integrity not only of the block's content, but also of the sequence of the whole chain. If someone managed to change the content of block *n*, block *n + 1* and all the subsequent ones would point to a non-existent previous block and the blockchain would be broken.[419] The only way to mend it would be to rehash all the subsequent blocks starting with the *n*-th.[420] This is a very demanding process that would require cooperation of at least 51 per cent of all nodes.[421] The difficulty of achieving such cooperation ensures the integrity of the data and of the chain.

To sum up, each node stores the whole database of transactions. When adding a new block to the chain, the majority of nodes must consent to it. This is why it is difficult to tamper with previous blocks. It would be very difficult for someone with malicious intent to get the majority of nodes to side with them, as blockchain is designed to incentivise honest behaviour through market-based and game-theoretical mechanisms.[422]

It can be seen that there are three important groups that protect the system of checks and balances on blockchain: miners, nodes and users. There is also a fourth group, the software developers who write the code that is run by the miners and the nodes and determines the functioning of the blockchain. While the first three groups can be open to anybody, the fourth group is open in the sense that anyone can review the open source code of the Bitcoin network and suggest changes, but only a small group of core developers decide about the acceptance or refusal of the changes, which get integrated by the maintainers of the code, and the code is released.[423] The development of Bitcoin is thus 'closed'[424] and for practical reasons there is no alternative. This does not imply that the contributors and maintainers have more power than the other groups, though, because if the blockchain code changes, the nodes ultimately decide whether they will download and run the new code and thus accept the changes or whether they keep running the old version.[425]

418 See BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', pp. 9–11.

419 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 25.

420 NAKAMOTO, 'Bitcoin: A Peer-to-Peer Electronic Cash System', p. 3.

421 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 25.

422 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, pp. 33 and 39–42.

423 BitcoinCore (30 August 2021).

424 BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', p. 36.

425 All nodes run the same consensus protocol. WERBACH, *The Blockchain and the New Architecture of Trust*, p. 146.

If a blockchain forks into two separate ones due to changes that make them incompatible, users then ultimately decide which one they want to use.[426]

The inventor of Bitcoin, Satoshi Nakamoto, introduced a way of swapping electronic cash without the need for a centralised entity such as a bank.[427] He also introduced principles that might reshape current institutions and the economy in general.[428] Another programmer, Vitalik Buterin, liked the vision of a reshaped society and developed a blockchain that could serve more purposes than only swapping electronic cash, by developing the mechanism of 'smart contracts'.[429] This mechanism is present on the Bitcoin blockchain in the sense that it is not possible for a user to initiate a transaction and then to break the process of finalising it, because that process is handled autonomously within the decentralised system.[430] While the Bitcoin blockchain serves only to support cryptocurrency transactions, Buterin designed a blockchain where it is possible for anyone to write their own small programs which can be executed on it.[431] His Ethereum blockchain can thus serve as a general-purpose computing platform.[432]

'Smart contracts' can be used to define conditions under which the value they are holding gets unlocked.[433] In this way, the objects of value ('tokens') can be exchanged. It is ensured that every token is unique and cannot be spent twice; in other words, tokens ensure scarcity in digital resources.[434] Once the smart contract is triggered on blockchain, it is executed and cannot be reversed.[435] This is because every smart contract application also has an account on the network, but without a private key,[436] so it must be triggered externally by some pre-defined action, e.g. receiving ether (the cryptocurrency of Ethereum).[437] Because the smart contract is then executed on the

426 This is called a 'hard fork', and it has already happened on the Bitcoin network. See WERBACH, *The Blockchain and the New Architecture of Trust*, pp. 146-147.

427 NAKAMOTO, 'Bitcoin: A Peer-to-Peer Electronic Cash System', p. 1.

428 TAPSCOTT/TAPSCOTT, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, p. 29.

429 DE FILIPPI/WRIGHT, Blockchain and the Law: The Rule of Code, p. 27; WERBACH, The Blockchain and the New Architecture of Trust, p. 65.

430 WERBACH, *The Blockchain and the New Architecture of Trust*, pp. 63-64.

431 'Ethereum Whitepaper' (31 August 2021).

432 WERBACH, *The Blockchain and the New Architecture of Trust*, p. 66.

433 'Ethereum Whitepaper'.

434 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 315.

435 WERBACH, *The Blockchain and the New Architecture of Trust*, p. 126.

436 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 28.

437 'Ethereum Whitepaper'; DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, pp. 28-29.

network autonomously, its code has to be formulated with absolute precision. The precondition is that the rules to be encoded are clear-cut, because machine-readable code does not allow for vague and imprecise formulations like human language does.[438] Smart contracts by their nature cannot be adjusted in case the parties realise they had forgotten about something or simply change their mind.[439]

Early cryptocurrencies that run on permissionless blockchains are public, i.e., anyone can read the data on them.[440] In the case of the Bitcoin network, the whole transaction history is accessible to every node.[441]

The fact that a permissionless blockchain is open to anyone as a user, node or miner makes it possible that it will be used by a large amount of entities, which can challenge the network.[442] It is said that the Bitcoin blockchain is not very scalable and that it is slow, as transactions can be validated approximately every ten minutes.[443] The scalability and efficiency of blockchain depends on the consensus mechanism that is being used.[444] Ethereum 2.0 adopted a consensus mechanism ('proof-of-stake') that updates the blockchain faster than the 'proof-of-work' used by Bitcoin and therefore Ethereum 2.0 should be more scalable.[445]

B. Permissioned/Closed Blockchain

If the nodes or miners need to be authorised first in order to participate in publishing new blocks, the blockchain is called permissioned or closed.[446] This does not necessarily mean that they are also private and not public, as they can enable anyone to read the data on it, but it is also possible that access to reading and initiating transactions on a permissioned blockchain is

438 WERBACH, The Blockchain and the New Architecture of Trust, p. 125.

439 WERBACH, The Blockchain and the New Architecture of Trust, p. 126.

440 BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', pp. 41-42.

441 NAKAMOTO, 'Bitcoin: A Peer-to-Peer Electronic Cash System', p. 6.

442 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 214.

443 See DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 27.

444 DRESCHER, *Blockchain Basics: A Non-Technical Introduction in 25 Steps*, p. 238.

445 MILLMAN RENE/KELLY LIAM J., 'What is Ethereum 2.0 and Why Does It Matter?' (10 September 2021) *Decrypt*.

446 YAGA DYLAN/MELL PETER/ROBY NIK/SCARFONE KAREN, 'Blockchain Technology Overview', *National Institute of Standards and Technology*, Internal Report 8202 (October 2018), pp. 5-6.

limited.[447] In contrast to permissionless blockchains, a permissioned blockchain does not have to be fully decentralised. There may be only one trusted third party which is the single miner and the single node operating a centralised blockchain, or there may be a couple of trusted nodes operating a "partially decentralised" blockchain.[448]

De Filippi and Wright rightfully argue that the characteristics of permissioned blockchains mean that they lack "the truly innovative aspect of blockchain technology", in contrast to the permissionless blockchains, which facilitate trust between participants who actually do not need to trust each other.[449] At the same time, they have some advantages over permissionless ones. Due to the smaller number of participants on permissioned blockchains, the verification of transactions and adding of new blocks can be much faster than on open blockchains.[450] It is also easier to correct some past transactions if there is a need for it,[451] but trust must be present among the network participants, as it is easier to tamper with the data in the ledger.[452] Furthermore, with fewer nodes it is more probable that the network will fail[453] and permissioned blockchains are also more prone to attacks by hackers.[454]

II. Blockchain and the Music Industry

This chapter introduces how blockchain might be transformative for the music industry, according to various authors, especially in the field of recorded music. The possible changes are depicted by their proponents as leading to better conditions for artists in general.[455] As Magaudda puts it, an archetyp-

447 YAGA/MELL/ROBY/SCARFONE, 'Blockchain Technology Overview', pp. 5-6.

448 BUTERIN VITALIK, 'On Public and Private Blockchains' (7 August 2015).

449 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 32.

450 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, pp. 31-32; WERBACH, *The Blockchain and the New Architecture of Trust*, p. 107.

451 BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', p. 39.

452 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 32.

453 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 32.

454 BACON/MICHELS/MILLARD/SIGH, 'Blockchain Demystified: A Technical and Legal Introduction to Distributed and Centralised Ledgers', p. 33.

455 HEAP IMOGEN, 'Blockchain Could Help Musicians Make Money Again' (5 June 2017) *Harvard Business Review*; D. A. WALLACH, 'Bitcoin for Rockstars'.

ical struggle between artists and the music business is sketched to envision the potential positive impact of blockchain technology in order to make its adoption seem more desirable.[456]

The discussion of the benefits of blockchain for the copyright domain started with various intellectual property, technology, media and entertainment analysts expressing ideas of how blockchain could advance digital copyright protection and disrupt current distribution business models. The discourse was probably sparked by the hype around cryptocurrencies.[457] Some of the analysts have "radical" or even utopian visions of creating a completely new techno-economic order,[458] prophesying the elimination of all current intermediaries between musicians and their fans.[459] Others have less ambitious "incorporative" visions, seeing blockchain as a tool that can improve the existing system.[460] They argue that the new technology could facilitate registering of copyright ownership, increase transparency regarding who owns what rights to what content, facilitate licensing contracts and payments, provide artists with access to alternative sources of capital (e.g. crowdfunding), track the flow of royalties to creators, producers and other parties in the distribution chain, shift the distribution of royalties in favour of the creators, cut the costs of the remuneration process, enable authors to set the terms of usage of their content on their own and, finally, function as a distribution platform for copyright-protected content and disintermediate some of the players in the distribution chain.[461] The promises that are especially relevant for the further discussion of blockchain and CRM will be discussed in more detail below.

456 MAGAUDDA PAOLO, 'The Future of Digital Music Infrastructures: Expectations and Promises of the Blockchain 'Revolution'' in Mazierska Ewa / Gillon Les / Rigg Tony (eds), *Popular Music in the Post-Digital Age*, New York: Bloomsbury, 2019, pp. 51–68, at p. 58.

457 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 312.

458 BAYM NANCY / SWARTZ LANA / ALARCON ANDREA, 'Convening Technologies: Blockchain and the Music Industry' (2019) *International Journal of Communication*, pp. 402–421, at p. 403.

459 HOWARD, ''Bitcoin for Rock Stars' a Year Later: An Update from D. A. Wallach on Blockchain and the Arts Part 1'.

460 BAYM/SWARTZ/ALARCON, 'Convening Technologies: Blockchain and the Music Industry', p. 403.

461 GAIN BRUCE, 'High Hopes for Blockchain for Digital Copyright Protection' (19 December 2016) *Intellectual Property Watch*; RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry'; O'DAIR/BEAVEN/NEILSON/OSBORNE/PACIFICO, 'Music on the Blockchain', p. 8.

A. Database of Rights Management Information

Information on who owns what rights to which work is essential for rights clearance. As described in Chapter 1.IV.B, the phenomenon of fragmentation makes the process of rights clearance more complex, especially because different countries have different legal rules on copyright. Currently, there are many databases on music assets, i.e., compositions and recordings, and none of them are complete, flawless and accessible to all music stakeholders.[462] The current problems with the databases can lead to artists not being optimally rewarded. Due to incomprehensive or inaccurate data it is possible that rights holders are not paid out and that the royalties are split among labels and publishers according to their market share without being further redistributed among the artists.[463] Many insiders of the music business argue that the chaos in metadata should be resolved and there should be a database where all the necessary information about the rights holders, including the percentages of ownership, is accessible to provide a solid basis for licensing and distributing revenues.[464]

One of the problems of the current rights management is that there is no authoritative source to link recordings with the respective musical compositions.[465] There are separate identifiers for musical compositions (the International Standard Work Code, ISWC), and for recordings (the International Standard Recording Code, ISRC).[466] Cross-mapping of these identifiers would be needed, but there is no such database.[467] Other problems include that the

462 O'DAIR MARCUS / BEAVEN ZULEIKA, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry' (2017) *Strategic Change*, pp. 471-480, at p. 472; SAVELYEV ALEXANDER, 'Copyright in the Blockchain Era: Promises and Challenges' (2017) *Computer Law & Security Review*, pp. 550-561, at p. 552.

463 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 16.

464 O'DAIR/BEAVEN, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry', p. 472; SENGES WOLFGANG, 'Blockchain in the Music Business: Preventing the Threat of Disruption' (2018) *International Journal of Music Business Research*, pp. 83-106, at p. 86; TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 148.

465 ROSENBLATT BILL, 'Watermarking Technology and Blockchains in the Music Industry' (2017), Digimarc, p. 9; NUTTALL, 'Private Copyright Documentation Systems and Practices: Collective Management Organizations' Databases', pp. 25-27.

466 NUTTALL, 'Private Copyright Documentation Systems and Practices: Collective Management Organizations' Databases', pp. 12-14.

467 BRONFMAN EDGAR JR., 'Blockchain Technology: The Blueprint for Rebuilding the Music Industry' (2019) *Cardozo Arts & Entertainment Journal*, pp. 229-261, at p. 235; NUTTALL, 'Private Copyright Documentation Systems and Practices: Collective Management Organizations' Databases', p. 26; RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 23.

identifiers are not always unique for each recording or musical work[468] and there are identifiers being used which disable "automated identification of music without errors, gaps, or ambiguities."[469]

So far, every attempt to create a centralised comprehensive database has failed. The most prominent example is the attempt to create the Global Repertoire Database (GRD), which was supposed to be a database of musical works.[470] Many music industry entities, including numerous CMOs, took part in this endeavour initiated by the EU Commissioner Neelie Kroes.[471] The attempt failed in 2014. The alleged reasons for this failure were a "lack of confidence from the major financial players and wavering support by CMOs"[472], fear by CMOs that they would become redundant[473] or lose an important source of revenue[474], disputes over technical and legal parameters[475] and the shift of power that would have occurred from the current data holders to the new runner of the centralised database[476].

The emergence of blockchain has drawn fresh attention to the issue of metadata, as it offers a technological solution for creating a universal database.[477] With a single database, the costs of development of separate solutions would be saved.[478] Some stakeholders might still worry about their data sovereignty and that they might lose power over the data, but this could be resolved through the fragmentation of the P2P network and permissioned

468 NUTTALL, 'Private Copyright Documentation Systems and Practices: Collective Management Organizations' Databases', p. 27.

469 ROSENBLATT, 'Watermarking Technology and Blockchains in the Music Industry', p. 10.

470 BRONFMAN, 'Blockchain Technology: The Blueprint for Rebuilding the Music Industry', p. 237.

471 MILOSIC KLEMENTINA, 'The Failure of the Global Repertoire Database' (31 August 2015) *Hypebot*.

472 TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 148.

473 MILOSIC, 'The Failure of the Global Repertoire Database'.

474 MILOSIC, 'The Failure of the Global Repertoire Database'.

475 MILOSIC, 'The Failure of the Global Repertoire Database'.

476 SILVER JEREMY, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies' (2016) *CREATe Working Paper 2016/05*, p. 51.

477 D. A. WALLACH, 'Bitcoin for Rockstars'.

478 SENGES WOLFGANG, 'Blockchain als Chance der Verwertungsgesellschaften', in Ahlers Michael / Grünewald-Schukalla Lorenz / Lücke Martin / Rauch Matthias (eds), *Big Data und Musik: Jahrbuch für Musikwirtschafts- und Musikkulturforschung 1/2018*, Wiesbaden: Springer Fachmedien, 2019, pp. 53–98, at p. 64.

blockchains (though at the price of losing the advantages of a non-fragmented network).[479] The database could be accessible to all market players.[480] The challenge of such a database would be the authentication of those who enter data and verification that the entered data is correct.[481] Verification would need to be allowed only to entities with sufficient expertise, such as CMOs, music publishers, record labels and art professionals.[482] These entities would also be able to modify data in the database, e.g., after a decision by a state authority about copyright ownership to a certain work.[483]

However, Bronfman Jr. points out that the key problem with creating something similar to the GRD is not a technological one and therefore blockchain offers no actual solution. The problem is persuading the data holders to combine their data into one source.[484] First, control of the rights management information is often perceived as a source of power[485] and second, there must be a consensus of all participants on the parameters of the database, which is a high bar to meet[486]. Therefore, using blockchain to create such a database would need to be part of a solution to a problem other than only a lack of a single authoritative database,[487] although this is necessarily the starting point.[488] The fact that some private players are exploring using blockchain to create such a database proves that it can be useful for something more, which is providing licences to users.[489]

479 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', pp. 59-60 and 66.

480 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 72.

481 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 69-72.

482 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 74.

483 SAVELYEV, 'Copyright in the Blockchain Era: Promises and Challenges', p. 557.

484 BRONFMAN, 'Blockchain Technology: The Blueprint for Rebuilding the Music Industry', p. 246.

485 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 328; SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 51.

486 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 64.

487 TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 149.

488 SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption', p. 103.

489 TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 149.

B. Licensing and Distribution of Royalties

As Senges says, "[l]icensing of music … is built on contracts and fees. It is a model that matches the concept of blockchain perfectly."[490] Automated licensing can be realised due to blockchain's feature of smart contracts. It enables exchanging permission to use copyrighted works for remuneration. An example of a smart contract rule is: if a user pays an amount of X, the payment will be divided among rights holder Y receiving 80 per cent of X and rights holder Z receiving 20 per cent of X. Similarly formulated smart contracts might actually help to automate a lot of transactions that are taking place in CRM,[491] as smart contracts are well-suited where the performance obligations can be delineated in an objective and predictable manner at the time of contracting.[492]

However, although the rules of smart contracts must be formulated clearly, this does not mean that licensing through smart contracts cannot give rise to any disputes. There may still be conflicts among rights holders regarding who owns which copyright, among users claiming that their licence clashes with another licence or there may be conflicts with some legal norms, e.g., those regulating exceptions or limitations to copyright.[493] Therefore, licensing through smart contracts may not necessarily reduce uncertainty.[494] However, concentration of the metadata in one place might make it easier to avoid conflicts.[495]

Smart contracts could enable remuneration to be redistributed among the rights holders immediately, e.g., directly after a licence is purchased, according to a predefined key.[496] The current examples of blockchain-based

490 SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption', p. 102.

491 Bodó et al. call them 'dumb transactions', as they can be very simply formulated in a machine-readable language. BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 316.

492 DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, p. 84.

493 See BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', pp. 322-323.

494 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 323.

495 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 323.

496 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 319; O'DAIR/BEAVEN, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry', p. 474; TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 151.

applications in the music industry, which will be presented in Chapter 2.III, show that the possibility of real-time payments is not being used, as it is impractical. However, a higher frequency of payments, in weeks rather than months,[497] is being offered. Redistribution is also connected to the issue of the payment system, which blockchain can provide[498] if the payments are made in a cryptocurrency. It is debatable how attractive, i.e., valuable, cryptocurrencies are for artists.[499]

The potential of blockchain to facilitate the creation of a database with all necessary rights management information and automated licensing through smart contracts has given rise to ideas that the licensing could well be done individually rather than collectively.[500] As seen above, collective management and compulsory licensing as well as blanket licensing exist because of the problem of high transaction costs. Due to the blockchain functionalities, the transaction costs of negotiations between rights holders and users could be lowered and works could be licensed individually.[501] Theoretically, creators might set the terms of a licence on their own and be able to offer fans direct access.[502] Thereby, they might create their own "lex cryptographica", as De Filippi and Wright call the private regulatory framework where the rules are produced individually.[503] However, such licensing would probably not be easy, because copyright law is not the same in every country[504] and it would be problematic if the licences did not comply with the territorially applicable law.[505] Senges suggests that CMOs might help with this issue

497 Currently, redistribution often takes place every twelve, six or three months. O'DAIR/BEAVEN, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry', p. 472.

498 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 329.

499 FINCK MICHÈLE / MOSCON VALENTINA, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0' (2019) *International Review of Intellectual Property and Competition Law*, pp. 77-108, at p. 97.

500 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 330.

501 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 330; TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 151.

502 FINCK/MOSCON, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0', p. 95.

503 See DE FILIPPI/WRIGHT, *Blockchain and the Law: The Rule of Code*, pp. 5-7.

504 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 334.

505 FINCK/MOSCON, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0', p. 99; SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 78.

as they have more expertise in copyright than independent creators. They might also create model contract clauses that creators could use.[506] In this way, blockchain could contribute to setting licensing standards.[507]

Licensing through smart contracts can also facilitate the generation of information and statistics about the usage of works. This can lend support to the argument for individual licensing, because compulsory licensing has so far been the solution to the issue that rights holders often cannot know that their work has been communicated (e.g., streamed).[508] If the rights holders can know about every use of their work,[509] they can also require remuneration for it. The information that a work was used could also be applied multiple times in the licensing process, as it could be detected that part of the remuneration should be forwarded to the creators of a work that was used to create the primary object of a licence, for example, in the case of a remix.[510] The information can also bring transparency to the financial flows among users, licensors and rights holders (creators),[511] which is the topic of the following section.

C. Transparency throughout the Value Chain

The issue of transparency is discussed in the literature in the sense that creators need more information so that they can control whether they are paid correctly by the labels, publishers and CMOs.[512] When it comes to streaming, artists do not have insight into the contracts between record labels and streaming services and how they are fulfilled, and therefore they cannot

506 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 84.

507 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 316; FINCK/MOSCON, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0', p. 96.

508 LANE/PLATZ, 'The Other Side of the Ledger: Blockchain Makes a New Entry in the Historical Record of Copyright Law and Technology', pp. 89–90.

509 According to the report of the Rethink Music Initiative, only the publisher Kobalt provides its songwriters with information on every use of their works. RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', pp. 10–14.

510 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', p. 78.

511 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 331; O'DAIR/BEAVEN, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry', p. 475.

512 COOKE CHRIS, *Dissecting the Digital Dollar Part I: How Streaming Services Are Licensed and the Challenges Artists Now Face*, Music Managers Forum, 2015, (13 July 2024), p. 58.

control if they are being paid properly by the labels.[513] Without information on the deals between the labels and streaming platforms, creators can also hardly judge whether their income is fair or sustainable.[514] The payments to songwriters from the CMOs managing public performance rights, too, are forwarded without detailed information on the usage of the works because the CMOs themselves often do not have that information.[515]

The emergence of blockchain makes it possible to create more transparency 'by design', as the metadata as well as the transactions may be tracked better. If a permissionless open blockchain were used, there would be two-way transparency, of the artists to the fans and of the fans to the artists,[516] as the data of both sides would be fully accessible to everyone. However, as discussed above, blockchain's level of transparency can be adjusted[517] and permissioned systems allow for selective transparency.[518]

D. Blockchain as a Convening Technology

Going beyond the perspective of what blockchain as a technology can technically enable and looking at the promises of blockchain from a meta-perspective, it can be observed that blockchain serves as a technology that brings diverse stakeholders of the music industry together to discuss differing opinions and possible changes to the industry.[519] Baym et al. use the term 'convening technology' to describe this potential of a technology to bring stakeholders together and make them have important discussions, even if they end up being about something else than the technology itself,[520] such as

513 BRONFMAN, 'Blockchain Technology: The Blueprint for Rebuilding the Music Industry', p. 239; RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 14.

514 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 331; SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 25.

515 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 18.

516 O'DAIR/BEAVEN, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry', p. 475.

517 See Chapter 2.I.B.

518 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 55.

519 BAYM/SWARTZ/ALARCON, 'Convening Technologies: Blockchain and the Music Industry', p. 404.

520 BAYM/SWARTZ/ALARCON, 'Convening Technologies: Blockchain and the Music Industry', pp. 413-414.

the 'metadata chaos' in the case of blockchain.[521] Baym et al. argue that "blockchain's main contribution to the music industry might just be the conversation it has generated."[522] Senges supports the same idea as he argues that a dialogue of stakeholders that have been in conflict is necessary if blockchain is to become a foundation for the music industry.[523]

III. Application of Blockchain in the Online Music Industry

It is probably not surprising that the first realisations of the vision to apply blockchain occurred in the online music sector.[524] It is "a market dominated by low value purchases and miniscule payments for single plays", and therefore blockchain's potential to lower transaction costs could have a significant impact.[525]

A few products that try to make use of blockchain's potential have already been developed. Some of them function as distribution platforms, and their aim is to enable music creators to upload their music directly onto the platform and provide it to users who can stream it, download it, rate it or even share it through social networks.[526] Two currently functioning services will be described in more detail to provide a better picture of how they function. The first, the platform eMusic, provides services for artists, labels, and service providers as well as end-users.[527] The artists can upload their music including the metadata and determine to what service providers their works

521 SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption', p. 103.

522 BAYM/SWARTZ/ALARCON, 'Convening Technologies: Blockchain and the Music Industry', p. 414.

523 SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption', p. 87.

524 TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 152.

525 SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption', p. 92.

526 See for example Audius, (30 September 2021); Aurovine, (13 July 2024); BitSong, (30 September 2021); Emanate, https://emanate.live/artistslabels (30 September 2021); eMusic, see EMUSIC, 'Redefining Music Distribution Through Blockchain' (4 February 2019); MUSE NETWORK, see 'Muse Network White Paper'; Musicoin, (30 September 2021); Resonate, (13 July 2024).

527 The information on the platform's functioning stems from EMUSIC, 'Redefining Music Distribution Through Blockchain'.

can be distributed and for what purpose (to enable downloading, streaming or licensing). The artists can also set in motion smart contracts which facilitate distribution of the royalties to the rights holders. Record labels can use eMusic as a distributor for their music and profit from its royalty reporting and distribution system. Other service providers can buy access to the content that eMusic offers. As already mentioned, smart contracts are used in the process of publishing assets including information on rights holders and the process of distributing royalties. The information about the music assets and the sales is accessible in a publicly distributed database, which makes it possible for the artists to track how and where their music is bought. End-users can buy songs or albums either with eMusic Tokens or with a standard currency. The second example of a blockchain-based product is the platform Aurovine,[528] which enables fans to support the artists they like in a number of ways. It implements its own tokens, Audiocoins, which are used to reward activities such as the uploading of music to the platform by creators, the rating of the music by fans or sharing of the music in social networks. The tokens can be used to pay for streaming, to get access to premium functions, to buy products or they can be transferred to a currency exchange. Fans can also pay for their purchases in a standard currency. Artists can thus be rewarded in a standard currency or in Audiocoins.

These platforms enable a sort of pay-per-use system,[529] such as per download or per stream. For practical reasons of blockchain's functioning, the payments to artists are not forwarded instantly, but made once a week[530] or whenever the rights holders demand it.[531] Smart contracts fully automate the process. Users, such as digital service providers or even end-users, can directly use the works according to the conditions laid down by the rights holders after sending the corresponding payment. Musicians can make use of information on when and where their songs have been played.[532]

As already mentioned, some authors (those with 'radical' visions) emphasise the possibility of displacing all the current middlemen between those making music and those listening to it, including distribution platforms and CMOs, as creators and end-users could match directly through blockchain

528 The information on the platform's functioning is taken from Aurovine (13 July 2024).

529 It is one of the proposed systems for easing online enforcement of copyright. See THOUVENIN FLORENT, 'Durchsetzung von Urheberrechten und Datenschutz: Lehren aus dem Scheitern von ACTA' in Weber Rolf H. / Thouvenin Florent (eds), *Neuer Regulierungsschub im Datenschutzrecht?*, Zürich: Schulthess, 2012, pp. 105-129, at p. 128.

530 Aurovine (13 July 2024)

531 EMUSIC, 'Redefining Music Distribution Through Blockchain', p. 20.

532 A function imagined by Imogen Heap together with the possibility of being alerted to a current use. HEAP, 'Blockchain Could Help Musicians Make Money Again'.

without high transaction costs.[533] Given the examples of eMusic and Aurovine, it cannot be said that they cut out all the middlemen, as they themselves constitute intermediaries.[534] The impact on the position of the traditional middlemen such as record labels, music publishers and CMOs will be the focus of Chapter 3.

To summarise, we can use the terminology of Lane and Platz who say that blockchain is a governance technology, which enables new ways of "governing the recording, exchange, and enforcement of copyright rights".[535] It is "an institutional technology for governing information".[536] It can provide efficiency gains when co-ordinating activities between various centralised institutions.[537] CMOs are an example of hierarchical, centralised organisational structures.[538] The following chapter analyses how blockchain might impact CMOs' activities.

IV. Application of Blockchain for Collective Rights Management

Blockchain is discussed in the scientific literature as having the capacity to address the problems and inefficiencies of CMOs.[539] These problems include the facts that CMOs have incomplete and inaccurate rights management in-

533 HOWARD, 'What the Music Business Could Learn from the Internet of Things'; PWC, 'Digital Disruptor: How Bitcoin is Driving Digital Innovation in Entertainment, Media and Communications' (7 February 2014), p. 6; WERBACH, *The Blockchain and the New Architecture of Trust*, pp. 74-75.

534 See BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', pp. 318-319.

535 LANE/PLATZ, 'The Other Side of the Ledger: Blockchain Makes a New Entry in the Historical Record of Copyright Law and Technology', p. 84.

536 LANE/PLATZ, 'The Other Side of the Ledger: Blockchain Makes a New Entry in the Historical Record of Copyright Law and Technology', p. 86.

537 LANE/PLATZ, 'The Other Side of the Ledger: Blockchain Makes a New Entry in the Historical Record of Copyright Law and Technology', p. 86.

538 GOLDENFEIN JAKE / HUNTER DAN, 'Blockchains, Orphan Works, and the Public Domain' (2017) *Columbia Journal of Law & the Arts*, pp. 1-43, at pp. 9-10.

539 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', pp. 43-56; SENGES, 'Blockchain als Chance der Verwertungsgesellschaften'; TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', pp. 153-155.

formation,[540] they lack transparency and there are delays in payments.[541] According to the Phonographic Performance Ltd (PPL), a British CMO, the challenge they are facing is "how to render more accurately what they distribute and to whom", meaning that they would like to know the full performer line-up.[542] The current manual investigation is costly.[543] The functionalities of blockchain that might address the problems have been outlined above. Silver claims that due to these functionalities, technologists would probably see blockchain as the most efficient system that can be used for the gathering and distribution of royalties today.[544]

CMOs are the central anchors of the music industry and therefore if a new technology influences the business processes in this industry, it can also influence the processes of CRM and thus the whole music industry.[545] Senges suggests that CMOs could become stronger and that blockchain might improve their structures.[546] Bronfman, however, concludes that blockchain's potential to have a real impact on business still lies in the distant future and that many barriers would have to be overcome first.[547] Those barriers include not only the technological imperfections of blockchain itself but also the way the music industry functions and the fact that the stakeholders first need to be incentivised to change their practices before any technology can facilitate them.[548] In the following section, the possible improvements to CRM as well as the challenges of blockchain implementation in the current setting will be discussed.[549]

540 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 50.

541 TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 154.

542 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', pp. 46–47.

543 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 46.

544 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 56.

545 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', pp. 57 and 81.

546 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', pp. 57–58.

547 BRONFMAN, 'Blockchain Technology: The Blueprint for Rebuilding the Music Industry', p. 254.

548 BRONFMAN, 'Blockchain Technology: The Blueprint for Rebuilding the Music Industry', pp. 246 and 254.

549 See SENGES, 'Blockchain als Chance der Verwertungsgesellschaften'; SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption'.

A. Possible Improvements through Blockchain

As mentioned in Chapter 2.I.A, blockchain enables the tokenisation of various objects and thus the creation of artificial scarcity in a digital world.[550] For the purpose of CRM, tokens can represent a work of authorship, a piece of rights management information, the terms of use of a work of authorship or a unit of virtual currency.[551] The holders of tokens can be rights holders,[552] users or end-users. The distributed ledger can be a database of who owns rights to a certain work of authorship, who has bought a licence, how much was paid for it, how works were used and much more, as it records the ownership and transactions of tokens.[553] There are thus enough possibilities that CMOs might make use of for their functioning.

First, CMOs could create and maintain the database of musical works and sound recordings and the rights holders thereto, as they have the necessary metadata.[554] The database could also be designed to enable rights holders to adjust information. In that case, the system would need to contain a reliable identity management and authentication process, so that persons other than the rights holders could not edit the data.[555] Such a process would be a big challenge to develop and constitutes a broad and complex topic in itself, therefore it will not be discussed in more detail in this thesis. The analysis at hand shall be limited to the statement that CMOs might play an important part in the authentication process as they should know who the actual rights holders are. The database could be a precious source of information for licensing services, both blockchain-based and any others. The condition would be that it contains data on all works. It is apparent that the database would need to be sufficiently large in order to attract parties to take part in it; i.e., to build a network effect.[556] Therefore it is especially challenging to im-

550 FINCK/MOSCON, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0', pp. 93-94.

551 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 315.

552 See BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 314.

553 See BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 314.

554 See BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 324.

555 SENGES, 'Blockchain als Chance der Verwertungsgesellschaften', pp. 69-70.

556 FINCK/MOSCON, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0', p. 97.

agine how creating such a database would start.[557] The issue of losing power over one own's data, which caused the attempt to create the GRD to falter, could be resolved with a permissioned blockchain that makes it possible to remain in the control of the data and decide about how the data is visible to others while still making use of a broader database.[558]

Second, the blockchain-based database could also enable transactions of rights.[559] In this way the database could be updated in a reliable manner, as only the true rights holders would be able to change the ownership of the token or tokens that represent the respective rights. The same challenge regarding the identity management and authentication process as in the previous point would apply here as well.

Further, blockchain could facilitate the licensing activities of CMOs.[560] Smart contracts allow the conditions of providing a licence to be encoded in them so that the licences are easily concluded and executed. If all CMOs took part in the system, users might not need to pick up a licence for every jurisdiction or for every part of the repertoire separately. It could also automatically process royalties and redistribute the collected amount among the rights holders.[561] CMOs could do that because they also receive information on the usage of musical works. This information could eventually be processed with the help of blockchain, which could solve the issue of transparency, i.e., artists would know how their works are used. Blockchain could also function as a payment system, if it enabled monetary transactions between account holders.[562]

Blockchain technology might thus change the structure of CMOs. They might create a common database while ensuring that correct data is entered. The database would probably be based on a permissioned blockchain, where only approved nodes can verify transactions and generate tokens.[563] The

557 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 52.

558 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 55.

559 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 324.

560 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', pp. 329-330.

561 ROSENBLATT, 'Watermarking Technology and Blockchains in the Music Industry', p. 21.

562 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 329.

563 See BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 318.

resulting database could fulfil the requirements that the GRD was supposed to fulfil. CMOs could clear the rights in the spheres where there is an obligatory collective management and they could offer blockchain for the management of other rights on a voluntary basis.

B. Impact on Law

It does not seem that any of the current legal provisions regarding licensing the use of musical works would be challenged by such changes. Blockchain would thus serve only as an additional way to implement existing law, as the legal rules would simply be reinforced through smart contracts. It would be for efficiency reasons that blockchain is applied, not because legal rules do not suffice.[564] The legal rules would thus not need to proliferate to enable the use of blockchain for the purpose of licensing.

However, Savelyev suggests that persons who are obtaining rights to use copyrighted works while relying on the information from blockchain should be shielded from infringement claims.[565] This could be implemented either by applying the "fair use" doctrine in common law countries, adopting a new copyright exception or adapting the concept of good faith for this purpose in the continental countries.[566]

C. Current Investigations of Blockchain-Based Solutions

A few CMOs in the field of music have started researching the possibility of deploying blockchain. SACEM, PRS for Music and ASCAP – i.e., the French, British and American collecting societies – announced in April 2017 that they have partnered to explore how the music industry could deploy blockchain to create a decentralised database with tracking capabilities that is updated in real time. They expect this solution to speed up licensing and reduce errors and costs.[567] The Swiss CMO in the field of music, SUISA, is also exploring

564 WERBACH, The Blockchain and the New Architecture of Trust, pp. 165-169 and 203-204.

565 SAVELYEV, 'Copyright in the Blockchain Era: Promises and Challenges', p. 557.

566 SAVELYEV, 'Copyright in the Blockchain Era: Promises and Challenges', pp. 557-558.

567 SACEM, 'ASCAP, SACEM and PRS for Music Initiate Joint Blockchain Project to Improve Data Accuracy for Rightsholders', *Press release* (7 April 2017).

whether blockchain could be used for the benefit of the represented right holders.[568] According to Senges, it is necessary for the music business stakeholders to monitor and evaluate this development so that they can shape it and avoid being overrun by a fast-going innovation cycle.[569]

V. Will Collective Management Organisations Be Superseded?

The prospect that the metadata needed for licensing works could be stored on a blockchain, which could also facilitate the licensing process, has led many to question whether CRM is still needed, as the transaction costs of individual licensing would significantly drop and thus rights holders could license their works directly to users.[570] In their view, CMOs could become obsolete.

When arguing so, the only function of CRM they probably have in mind is that of reducing transaction costs in the form of search and negotiation costs borne by users and right holders. It is true that if this were the only reason why CRM exists, blockchain-enabled individual licensing with very low transaction costs would make CRM, and thus CMOs, redundant. Compulsory licensing and collective management have existed since the advent of broadcasting because of the problem with keeping track of how much works were used and the high transaction costs.[571] If the transaction costs were lowered, these tools could disappear from the copyright statutes and CMOs could follow. However, CMOs have other functions, as described above. Even if blockchain entered the setting, the CMOs would probably still be needed for collective bargaining on behalf of creators and campaigning for fair transaction

568 SALVADÉ VINCENT, 'Blockchain – das Ende oder die Zukunft der Verwertungsgesellschaften?' (24 November 2017) *SUISAblog*.

569 SENGES, 'Blockchain in the Music Business: Preventing the Threat of Disruption', pp. 91-92.

570 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 43; TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', p. 155.

571 LANE/PLATZ, 'The Other Side of the Ledger: Blockchain Makes a New Entry in the Historical Record of Copyright Law and Technology', pp. 89-90 and 92.

conditions.[572] And if solidarity among artists still plays a role, CMOs can realise it. Those who encourage getting rid of CMOs because they can be superseded by blockchain tend to view the current redistribution model (that is still based on solidarity) as unfair. These proponents would prefer that rights holders receive remuneration exactly according to how much their works are being used and that users pay according to what works they use and how much. Unless the opinion prevails that the remuneration of creators should work according to this principle, the existence of CMOs will still be justified.

It is true that one of the main features of blockchain was said to be disintermediation, but a couple of authors have already suggested that the disintermediation potential of blockchain has been exaggerated.[573] If blockchain enters the sphere of licensing creative works, it is possible that the roles of CMOs would simply be modified.[574]

VI. Conclusion

This chapter has shown how blockchain might help to address a number of problems of the music industry. However, considerations are being expressed that while this is theoretically possible, in practice it might be a completely different story.

Analysing the practical impact of blockchain technology on the music industry will be the topic of the following chapter. The aim is not to answer the question of whether blockchain-based platforms will supersede other forms of music distribution platforms and, if so, under what conditions and when, although many would love to know exactly that. The aim is instead to provide a theoretical framework that helps analyse how different stakeholders react to blockchain entering the music industry. As a result, we can better understand what is currently happening, why, and where the development might be headed, even though a detailed cause-effect analysis will not be provided.

572 SALVADÉ, 'Blockchain – das Ende oder die Zukunft der Verwertungsgesellschaften?'.

573 BODÓ/GERVAIS/QUINTAIS, 'Blockchain and Smart Contracts: The Missing Link in Copyright Licensing?', p. 331; O'DAIR/BEAVEN/NEILSON/OSBORNE/PACIFICO, 'Music on the Blockchain', p. 19; WERBACH, *The Blockchain and the New Architecture of Trust*, p. 74.

574 FINCK/MOSCON, 'Copyright Law on Blockchains: Between New Forms of Rights Administration and Digital Rights Management 2.0', p. 102.

Chapter 3:
Discourse Analysis on Using Blockchain for CRM

Since blockchain was introduced in 2009, there have been many ideas on how the technology could be deployed. One of the ideas was to make use of blockchain in the music industry. The most discussed topic has been recreating the music ecosystem. The first idea was to use blockchain to create a direct channel between musicians and users, where the musicians could upload their works, together with the conditions of use, and users could purchase them. This idea, which would mean that musicians gain independence from intermediaries such as record labels, music publishers and CMOs, was followed by another idea, that CMOs themselves could deploy blockchain in order to improve their services. This 'mediated deployment' would mean no disruption to the current ways of monetising content, in contrast to the aforementioned 'direct deployment' of blockchain.

In the public discourse, there have been contradictory opinions on whether such use would be viable or desirable. While some argue for the development and marketing of blockchain-based products for licensing music, others are sceptical about these attempts. An observer of this discourse is left unsure about what to think of the potential of blockchain and what to expect in the near future. A frequent question, even from the scientific community, is whether we should expect blockchain-based licensing systems to be used and to substitute the current ways of individual and collective licensing.

The existence of contradictory opinions might lead to the impression that only one of the opinions can be correct and the other(s) must be wrong. This is somewhat surprising, as we are used to a lack of unanimity on many issues and questions, for example how state subsidies influence markets or how intensive agriculture influences people's health, and the reasoning beneath it is the same. There are as many opinions as there are expressions on

chains of causal explanations between the input and output. So it is possible to read one opinion A about state subsidies ruining the free market and another opinion B on the same subsidies strengthening and enriching the free market. The originator of opinion A makes other causal connections between elements, and even takes different elements into consideration, than the originator of opinion B. There are many elements to select, and even if the same are chosen, there are many possibilities to make causal connections between them. What A and B do is select different elements and their connections and come to different conclusions. The large amount of options leads to a wide variety and range of expressible opinions.

It is not possible to know what the future will bring, i.e., which opinion is "the right one" (below it will be explained why). But we can attempt to explain why there are contradictory opinions on questions such as whether using blockchain for licensing copyrighted works would benefit society or whether such a solution could be implemented. Thus, we can better understand what is currently happening and what might happen in the future. For a discourse analysis that takes into account perspectives of artists, CMOs, entrepreneurs, technology experts and academics, various texts about blockchain and its usage in the creative industry – especially scholarly texts, reports, news articles and blog articles – will be analysed. Luhmann's systems theory will be used to organise and structure the discourse analysis of a complex state of affairs like CRM and it will be explained how the different opinions on blockchain implementation came into existence and what impact they have. In what follows, Luhmann's systems theory is described in more detail (but still concisely)[575] and it is clarified why his theory has been applied to this discourse analysis.

575 For an overview of Luhmann's theory, the following works shall be recommended: LUHMANN NIKLAS, *Social Systems*, Stanford, CA: Stanford University Press, 1995, especially pp. 12–58, LUHMANN NIKLAS, *Essays on Self-reference*, New York, NY: Columbia University Press, 1990, especially pp. 1–20, 80–85, 99–106, 175–190, LUHMANN NIKLAS, *Theory of Society, Volumes 1–2*, Stanford, CA: Stanford University Press, 2012–2013.

I. Introduction to Luhmann's Systems Theory

Niklas Luhmann's theory belongs to the structural theories of sociology that view social life as composed of different parts or relationships that are never considered separately, but in their totality. These theories study the relationships between the individual parts (elements) as well as their relationships to the higher manifestations of social life, such as structures or systems.[576]

According to Luhmann, society is based on systems. Systems are any form of social contact and the inclusion of all possible contacts constitutes the system of society.[577] Systems are composed of elements, i.e., units that are not further dissolvable for the systems, and relations, which exist between the elements.[578] No elements can exist without relations and vice versa.[579] The basic element of a system is communication and systems are produced and reproduced through communication.[580] Communication is a synthesis of three aspects: information, utterance (or a communicative act; when dealing with utterance, one deals with why and how something is said) and understanding (dealing with the meaning of communication).[581] Understanding occurs by virtue of observing the distinction between information and the communicative act.[582] This moment is constitutive of communication and is anticipated by whoever selects the information and the communicative act.[583] This implies that communication is a self-referential process.[584] The fact that there is a distinction between these three aspects of communication is the reason why communications are capable of producing further communications; it is because communication can be based on one of the

576 BANAKAR REZA / TRAVERS MAX, 'Structural Approaches', in Banakar Reza / Travers Max (eds), *Theory and Method in Socio-Legal Research*, Oxford: Hart, 2005, pp. 195-201, at pp. 195-196.

577 LUHMANN, *Social Systems*, p. 15.

578 LUHMANN, *Social Systems*, pp. 20 and 22.

579 LUHMANN, *Social Systems*, pp. 20-21.

580 LUHMANN, *Essays on Self-reference*, p. 6; LUHMANN, *Social Systems*, pp. 138 ff. and 162.

581 LUHMANN, *Social Systems*, pp. 139-145.

582 LUHMANN, *Social Systems*, pp. 141-143.

583 LUHMANN, *Social Systems*, pp. 140-141.

584 LUHMANN, *Social Systems*, p. 143.

three aspects of an earlier communication, the information, the communicative act or understanding.[585] Only communication can, autopoietically, produce further communication.[586]

From this it follows that systems, whose basic element is communication, are self-referencing and autopoietic.[587] Because new elements are constituted by the system itself and by reference to the system's own relations among elements, Luhmann writes of a system's self-reference.[588] Because systems use their self-reference to create new elements out of their own elements, the systems are said to be autopoietic.[589] Systems decide by themselves what they select as information (a difference which makes a difference[590]) and what they leave out as disturbance (noise). When systems produce information, they actually select one out of many options. Without selection, systems would not be able to establish existence.[591] The systems are forced to select due to complexity.[592]

The term 'complexity' is often used in sociological research; the definitions differ, however. For Luhmann, complexity is a relation that can take different values.[593] The basis of this definition is what has been outlined above. An increase in the number of elements increases the number of possible relations among them.[594] The elements and relations have to be chosen by the system and it is impossible to predict which ones they will be.[595] There is no certainty about the states of a system and there are no predictions about its behaviour that would follow from them.[596]

Apart from the elements and relations that have been described above, systems can be divided into subsystems.[597] The subsystems of society are

585 LUHMANN NIKLAS, 'The Concept of Society' (1992) *Thesis Eleven*, pp. 67-80, at p. 72; LUHMANN NIKLAS, *Theory of Society, Volume 1*, Stanford, CA: Stanford University Press, 2012, p. 36.

586 LUHMANN, *Theory of Society, Volume 1*, p. 35.

587 LUHMANN, 'The Concept of Society', p. 71.

588 LUHMANN, *Social Systems*, pp. 33-34.

589 LUHMANN, *Social Systems*, p. 35.

590 BATESON GREGORY, *Steps to an Ecology of Mind*, San Francisco: Chandler, 1972, p. 315.

591 LUHMANN, *Social Systems*, p. 25.

592 LUHMANN, *Social Systems*, p. 25.

593 LUHMANN NIKLAS / SCHMIDT JOHANNES F. K. / KIESLING ANDRÉ / GESIGORA CHRISTOPH, *Systemtheorie der Gesellschaft*, Berlin: Suhrkamp, 2017, p. 36.

594 LUHMANN/SCHMIDT/KIESLING/GESIGORA, *Systemtheorie der Gesellschaft*, p. 32.

595 LUHMANN, *Essays on Self-reference*, p. 81.

596 LUHMANN, *Social Systems*, p. 110.

597 LUHMANN, *Social Systems*, p. 21.

so-called social systems, which include the systems of law, the economy, politics, art, science, etc. Modern society is a functionally differentiated system, so every social system has a certain function.[598] The system of law has a function of stabilising normative expectations,[599] the political system that of providing the capacity for collective decision-making,[600] the economic system that of ensuring future supply under conditions of scarcity,[601] and the system of art demonstrates the compelling forces of order in the realm of the possible[602]. In other words, systems are built from different viewpoints. The functional differentiation happens throughout time due to selections that again lead to selections.[603] Without selection, systems would not be able to differentiate from one another.[604] Social systems select and then reproduce communications using their binary codes.[605] For example, the legal system uses the code legal/illegal,[606] the system of science that of true/false.[607] When communication produced by one system is observed by another system, it is viewed through the system's own lens and the system uses its own binary code. Each system produces meaning[608] based on its own code. They are not able to observe anything identically. In other words, it can be said that modern society is "fragmented into multiple autonomous epistèmes"[609]. "Social discourses are the new epistemic subjects",[610] and each of them constructs its own reality.[611]

598 LUHMANN, *Theory of Society, Volume 1*, pp. 75 and 86.

599 LUHMANN NIKLAS, *Law as a Social System*, Oxford, UK: Oxford University Press, 2004, p. 148.

600 LUHMANN NIKLAS, *Die Politik der Gesellschaft*, Frankfurt am Main: Suhrkamp, 2002, p. 84.

601 LUHMANN, *Theory of Society, Volume 1,* p. 96.

602 LUHMANN, *Art as a Social System,* p. 148.

603 LUHMANN, *Theory of Society, Volume 1,* pp. 292 ff.

604 LUHMANN, *Social Systems*, pp. 32 and 190.

605 LUHMANN, *Theory of Society, Volume 1*, p. 51; LUHMANN NIKLAS, *Theory of Society, Volume 2*, Stanford, CA: Stanford University Press, 2013, pp. 92–93.

606 LUHMANN, *Social Systems*, p. 374.

607 LUHMANN NIKLAS, *Die Wissenschaft der Gesellschaft*, Frankfurt am Main: Suhrkamp, 1992, p. 170.

608 More on the term 'meaning' in LUHMANN, *Social Systems*, pp. 59–102.

609 TEUBNER, 'How the Law Thinks: Toward a Constructivist Epistemology of Law', p. 742. The term 'epistème' is used in the sense of Michel Foucault.

610 TEUBNER, 'How the Law Thinks: Toward a Constructivist Epistemology of Law', p. 741.

611 TEUBNER, 'How the Law Thinks: Toward a Constructivist Epistemology of Law', p. 738.

The existence of a system presupposes the existence of its environment.[612] There is a boundary between each system and its environment and this boundary is set by the system itself.[613] This boundary enables self-reference, as without it, it would not be possible to distinguish what belongs to the system and what does not.[614] Boundaries do not mean that the system is blind to everything that lies beyond. Although systems are operationally closed in the sense that only they can produce their own elements, they are also cognitively open.[615] Systems can observe the environment and because of the ability to distinguish between information and utterance and by applying their code, they can produce information through this observation.[616] It is usual for a system to produce information by observing the environment, although it is also possible that the system surprises itself with information about itself.[617] An event can be relevant for several systems simultaneously[618] (e.g. a payment may matter to the economic system as a reallocation of resources and to the legal system as the execution of a court decision). In what follows, it will be argued that the emergence of blockchain is such an event to which various systems react simultaneously.

II. Applying the Systems Theory to the Discourse Analysis

When analysing the debate on CRM and blockchain, the challenge is how to proceed. A typical approach for finding the answer to the question of how blockchain will affect the music industry and CRM is linear-causal. Such an approach has several shortcomings. The issue at stake is highly complex, and thus it would require identifying hundreds or thousands of cause-effect relationships and putting them into the correct order to then provide a predic-

612 LUHMANN, *Social Systems*, p. 177.

613 LUHMANN, *Social Systems*, pp. 28-31.

614 LUHMANN, *Social Systems*, p. 17.

615 LUHMANN, *Theory of Society, Volume 2*, p. 90.

616 LUHMANN, *Theory of Society, Volume 1*, p. 49; LUHMANN, *Social Systems*, pp. 67-68.

617 LUHMANN, *Theory of Society, Volume 1*, p. 371, note 126.

618 LUHMANN NIKLAS, 'Closure and Openness: On Reality in the World of Law' in TEUBNER GUNTHER (ed), *Autopoietic Law – A New Approach to Law and Society*, 1987, Berlin, New York: De Gruyter, pp. 335-348, at pp. 342-343.

tion of what will happen. However, as Paterson and Teubner point out, using the approach of autopoiesis might reveal that the autopoietic units follow different programs and operations than those foreseen in the linear causal chain.[619] Autopoiesis avoids these shortcomings of the linear-causal approach, as it studies the operations of the closed systems. In the end, one does not end up with 'one long story' as when using the linear approach, but rather with several stories, among which one tries to identify the interrelations. In other words, autopoiesis is not a theoretical framework that would provide predictions, it rather reformulates observations in new contexts as it studies the processes of autopoietic systems.[620] In order to avoid the difficult task of providing a linear story of how blockchain will affect the music industry and CRM, and the shortcomings of this method, the autopoietic approach will be used and certain units in the realm of CRM and its connection to blockchain will be identified that can be described in terms of Luhmann's systems theory as self-referential, autopoietic systems. These units have their own internal boundaries, codes, processes and structures, which they select themselves. In accordance with these self-constituted components, the units interact with their environments in their own individual ways (from the perspective of an observer). After having identified the systems and the way they interact with their environment, an attempt will be made to gain insights into the relationships between the systems. In its totality, this approach will not be used to provide a model of logical and mathematical formalisation or a causal explanation of the systems' functioning but rather to provide a "sophisticated analys[i]s of the 'operation called *Verstehen*'"[621]. Systems theory is among the approaches that reject the attempt to find out rules of causation that can be applied for making predictions and that have practical use for instrumental policy making.[622] Systems theory is not part of the modernist tradition of linearism, reductionism and universalism.[623] It sees evolution as

619 See PATERSON JOHN / TEUBNER GUNTHER, 'Changing Maps: Empirical Legal Autopoiesis' in Banakar Reza / Travers Max (eds), *Theory and Method in Socio-Legal Research*, Oxford: Hart, 2005, pp. 215-237, especially at p. 234.

620 PATERSON/TEUBNER, 'Changing Maps: Empirical Legal Autopoiesis', pp. 220-222.

621 PATERSON/TEUBNER, 'Changing Maps: Empirical Legal Autopoiesis', p. 217.

622 KING MICHAEL / SCHÜTZ ANTON, 'The Ambitious Modesty of Niklas Luhmann' (1994) *Journal of Law and Society*, pp. 261-287, at p. 263; CHANDLER DAVID, 'A World without Causation: Big Data and the Coming of Age of Posthumanism' (2015) *Millennium: Journal of International Studies*, pp. 833-851, at p. 848.

623 See CHANDLER DAVID, 'Beyond Neoliberalism: Resilience, the New Art of Governing Complexity' (2014) *Resilience: International Policies, Practices and Discourses*, pp. 47-63, at p. 49.

a changing of systems, not as a series of events connected by causal relations.[624] Therefore, the horizontal chains of causal relations are rather replaced by several vertical chains and the simultaneous recursive processes of self-reproduction in these chains are studied.[625]

III. Subsystems Taking Part in the Discourse

In what follows, it will be argued that within CRM, relevant subsystems involved in the discourse can be defined as consisting of coders, technology companies, artists, music industry intermediaries, users and CMOs. Although a system is not equal to a sum of persons[626], they will be labelled here as if they were. What is important are the components that define the system and only those shall be taken into account when referring to the system.

The relationship of each system to the emergence of blockchain will also be studied. For each system, it is a different environmental problem.[627] Because of the different characteristics of each system, the relationships or reactions to blockchain differ between the systems. At the end, comparing the reactions of these systems should enable us to assess whether these reactions converge or diverge and thus provide a better understanding of how blockchain might change the music industry.

Before looking at the specific systems, Luhmann's typology of systems will be introduced. He distinguishes between three types of social systems: society, interaction and organisation. These three kinds of social systems have different ways of forming themselves.[628] Society encompasses all communication. No communication can take place outside society.[629] An interaction system is one that requires individuals to be present in the same place at the same time, which means that communicative attention is guaranteed.[630] Interaction is limited in time and space; it ends when the participants part. In other words, "[i]nteractions are episodes of societal process."[631] The third

624 See LUHMANN, *Theory of Society, Volume 1*, pp. 253 and 302.

625 PATERSON/TEUBNER, 'Changing Maps: Empirical Legal Autopoiesis', p. 221.

626 LUHMANN, *Social Systems*, p. 255.

627 See LUHMANN, 'Differentiation of Society', p. 31.

628 LUHMANN, *Social Systems*, p. 405, note 1.

629 LUHMANN, *Social Systems*, p. 34.

630 See LUHMANN, *Social Systems*, p. 158.

631 LUHMANN, *Social Systems*, p. 406.

type of social system, organisations, will be described in more detail. They are of particular interest here, as a number of social systems that will be identified in the blockchain and CRM discourse fulfil the characteristics of an organised social system.

Organisations emerge under certain societal conditions, such as the social determination of working relationships.[632] The economic system also enables the emergence of organisations, because it makes the medium of money attractive, with which the organisations can pay for work.[633] Organisations reproduce themselves on the basis of communication of decisions.[634] A decision is a specific sort of communication, which implies that a selection has been made and that there was at least one other option. A decision divides time into past and future; it constructs a connection between the past, which is relevant to the decision, and the future, which looks different because of the decision.[635] An organisation is endowed with decision-makers who make decisions that are communicated within the organisation and form the basis of following decisions. Organisations have members who are appointed by the organisation's decisions and who are obliged to follow the decisions.[636] Organisations also have goals, which mostly correspond with certain functional systems.[637] So a company can have among its goals the sale of goods or services, which serves the function of ensuring supply under the condition of scarcity. In any case, organisations have various goals, not only one ultimate goal, as that would burden decision-making with too much complexity.[638]

A. Coders

Like all systems, the system of coders is operationally closed and constructs information internally according to its own code.[639] The system's code is digitised/analogue or digitisable/non-digitisable. Only what can be digitised can

632 LUHMANN NIKLAS, *Organisation und Entscheidung*, Opladen/Wiesbaden: Westdeutscher Verlag, 2000, pp. 380-381.

633 LUHMANN, *Organisation und Entscheidung*, p. 381.

634 LUHMANN, *Organisation und Entscheidung*, p. 63.

635 LUHMANN, *Organisation und Entscheidung*, p. 140.

636 LUHMANN, *Organisation und Entscheidung*, p. 390.

637 LUHMANN, *Organisation und Entscheidung*, p. 405.

638 LUHMANN, *Organisation und Entscheidung*, p. 270.

639 In this section, the reader needs to be careful about what code means. It is used either in the system-theoretical sense or to refer to a product of programming, i.e., a set of instructions that is performed by a computer, which thereby generates an output.

be processed as information by coders. The rest is meaningless noise.[640] Coders can thus easily program a tool that will automatically send a message to a friend asking them how they are doing, but they cannot code a tool that will establish friendship with another person. Among the many problems with such a task is that friendship is difficult to define precisely, which makes this task impossible to fulfil for a code.

Coders' activity consists of writing a code and debugging it so that it works every time as intended.[641] Usually the code helps someone out, as it solves a specific problem, and it automates repetitive tasks that humans find exhausting and boring to do manually. Code is more or less efficient, depending on the coder's abilities. The aim of the coders is to find the most efficient solution. Efficiency is the biggest passion of coders, maybe even a part of their ethical guidelines. It is what they are striving for.[642] Coders are searching for tasks that can be optimised. In system-theoretical terms it can be said that the program according to which coders steer their actions is the minimisation of difference[643] between the current situation and a situation where everything runs efficiently. If they know how to optimise, they do it.[644]

Coding per se is not about thinking through all the possible consequences and side effects of the code's deployment, despite rising awareness of this issue resulting from a few scandals such as Cambridge Analytica.[645] Coders are not interested either in how to finance and monetise what they are producing. The fact that more and more coders are thinking about the broader consequences of their products and that a lot of code is a source of huge income streams is a consequence of coders' relations to the environment, such as morals in the former case and the economic system in the latter case. The relationship to the economy is described in what follows.

Code has been produced since the 1960s, when the profession of coders emerged.[646] From the 1960s to the 1980s, solving problems by programming

640 This differentiation is illustrated by Nicolelis in a fictional dialogue between a neuroscientist (N) and an artificial intelligence researcher (AIR) about beauty. "N: Are you trying to tell me that just because you cannot quantify the sensation of encountering a beautiful face – the face of your mother or a daughter – this sensation is meaningless? AIR: Pretty much. Yeah. You got it right." The whole interview is in NICOLELIS MIGUEL, *The True Creator of Everything: How the Human Brain Shapes Our Universe*, New Haven, CT: Yale University Press, 2020, pp. 125-126.

641 CLIVE THOMPSON, *Coders*, New York: Penguin Press, 2019, pp. 17-18.

642 THOMPSON, *Coders*, p. 20.

643 PATERSON/TEUBNER, 'Changing Maps: Empirical Legal Autopoiesis', p. 221.

644 THOMPSON, *Coders*, pp. 122-125.

645 THOMPSON, *Coders*, pp. 328 ff. and 340-341.

646 See THOMPSON, *Coders*, p. 28.

was more of a hobby, favoured for being able to get a machine to do what one tells it to do. In the 1990s this motive was replaced by the power to have an impact on the whole of society.[647] The cause was the expansion of the Internet, which enabled reaching many individuals in real time, and its economic consequences. When many people use the same code, like a website or an application, its creators are forced to adapt the infrastructure of their product so that it can serve them without crashing. Rather than working individually, they have to hire other people to help them and thus enter the economic system. The medium of the economic system is money and the mechanism of communication is payments.[648] In order to make the application run smoothly, you hire other people whom you pay. To be able to pay them, you also need resources. Payments enable other payments, which is the ordinariness of the autopoietic economic system.[649]

If many people want to use an application, it is likely to be a good source of revenue for the creators. It becomes one if the revenue gained with every new user grows much faster than the costs of development. In business this is called scaling.[650] Many start-ups work on projects they hope to be able to scale as fast as possible. The motivation need not only be having an effect on the whole of society, but may also be getting financing from investors for further development. Investors are interested in the start-up's potential for fast scaling when deciding whether to invest.[651]

As already noted above, to fulfil the potential of scaling, you need to work with more people and you also have to work fast. Usually a company is established for that purpose. Nowadays, it is more likely that coders will work in teams on a common goal rather than writing a code on their own initiative, and will be commissioned to do so. In this case, the commissioner has to introduce them to the topic and explain what the goal is. This top-down approach contrasts with the earlier bottom-up process. In order to have an impact on the whole of society, coders need to be part of an organised social system that operates in the functional system of the economy, i.e., a technology company. Coders can impact many people and the economic structures enable them to do so.[652]

647 THOMPSON, *Coders*, pp. 34 ff. and 310.

648 LUHMANN NIKLAS, *Die Wirtschaft der Gesellschaft*, Frankfurt am Main: Suhrkamp, 1994, p. 249.

649 LUHMANN, *Die Wirtschaft der Gesellschaft*, p. 52.

650 BLACK/HASHIMZADE/MYLES (eds), *A Dictionary of Economics*, p. 160.

651 THOMPSON, *Coders*, p. 311.

652 Apart from economic structures, it is also legal structures that help coders out, as a technology company is a legal person. However, the relationship between the system of coders and that of the law will not be discussed here.

To sum up, since the 1990s, the economic system has established linkages with the system of coders.[653] With its medium of payments it co-determines what coders work on, primarily in the form of coders' salaries and secondarily in the form of investments in technological companies. If it were not for payments, coders would have less chance to impact the whole of society. The linkage between coders and the economic system will be further discussed in the next subchapter.

The focus now turns on the activities of coders in the realm of blockchain and the management of copyright. Coders entered this sphere around 2014. It was in the branch of music that tech-savvy business insiders made the public aware of the potential to optimise the licensing process with the help of blockchain. The first person to point out this potential in public was D. A. Wallach.[654] Afterwards, George Howard, an associate professor of music business and management at the Berklee College of Music, wrote a series of columns for *Forbes* on blockchain and the music industry, describing the potential and challenges of implementing blockchain.[655] The initial basic idea was to build a platform that would connect rights holders and users (even end-users), the former offering and the latter demanding musical works. Smart contracts would be deployed to automate licensing and remuneration.[656] At first, the idea was that there would be no more need for intermediaries such as CMOs to facilitate the process. The licensing costs would be reduced and the process would be faster.[657]

These ideas resonated with coders as well as artists. Enthusiasts started brainstorming and developing ideas about how to use the technology, what it could enable and what products could be developed. Many discussions took place on informal platforms with flat hierarchies. Allen and Potts call these institutions 'innovation commons'.[658] Many new technologies led to the creation of these commons where enthusiasts share information and thus

653 See THOMPSON, *Coders*, p. 45 ff.

654 See Chapter 2.

655 HOWARD GEORGE, 'Bitcoin and the Arts: An Interview with Artist and Composer, Zoe Keating' (5 June 2015) *Forbes*; HOWARD GEORGE, 'Imogen Heap's Mycelia: An Artists' Approach for a Fair Trade Music Business, Inspired by Blockchain' (17 July 2015) *Forbes*; HOWARD GEORGE, 'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain' (28 July 2015) *Forbes*; HOWARD GEORGE, 'D. A. Wallach on Spotify, Bitcoin, and a More Moral Music Industry' (30 September 2015) *Forbes*.

656 D. A. WALLACH, 'Bitcoin for Rockstars'.

657 D. A. WALLACH, 'Bitcoin for Rockstars'; HOWARD, 'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain'.

658 ALLEN DARCY W. E. / POTTS JASON, 'How Innovation Commons Contribute to Discovering and Developing New Technologies' (2016) *International Journal of the Commons*, pp. 1035–1054, at p. 1036.

help generate ideas about the prospects of new technologies.[659] Their non-hierarchical nature makes the innovation commons more efficient than other institutions such as firms or governments at making discoveries about the potential of new technologies.[660] The discoveries made within innovation commons can be used later by firms or governments.[661] Allen and Potts describe innovation commons as the zero-th phase in Schumpeter's innovation trajectory, which consists of "(1) entrepreneurial origination; (2) adoption and diffusion; and (3) retention and institutional embedding."[662]

The Mycelia project[663] fits into the category of innovation commons. It is a think tank that has brought together enthusiasts to search for possible useful products for artists and was founded by the musician Imogen Heap.[664] The work of this think tank led some of its members to start a project called "The Creative Passport" which enables artists to manage and share data about themselves and their works.[665] The Creative Passport is an organisation with a classical hierarchy and positions such as a chief executive officer and a chief technology officer.[666] It seems that the non-hierarchical Mycelia platform gave rise to The Creative Passport, which is now at the first stage of Schumpeter's innovation trajectory.

In 2015, Imogen Heap collaborated with another start-up called Ujo Music, which had been developing a product for selling and licensing music. Imogen Heap used Ujo Music to release her song "Tiny Human". After one year, the song had earned $133.20.[667] Caustic comments were made about this.[668] Ujo Music published an article stating that they had re-evaluated what they were doing and decided to focus first on other problems of the music

659 ALLEN / POTTS, 'How Innovation Commons Contribute to Discovering and Developing New Technologies' (2016) *International Journal of the Commons*', p. 1036.

660 ALLEN / POTTS, 'How Innovation Commons Contribute to Discovering and Developing New Technologies', p. 1036.

661 ALLEN / POTTS, 'How Innovation Commons Contribute to Discovering and Developing New Technologies', p. 1038.

662 ALLEN / POTTS, 'How Innovation Commons Contribute to Discovering and Developing New Technologies', pp. 1045-1046.

663 See Mycelia (27 January 2022).

664 HOWARD, 'Imogen Heap's Mycelia: An Artists' Approach for a Fair Trade Music Business, Inspired by Blockchain'.

665 See 'Mycelia Creative Passport'.

666 See 'The Creative Passport, Meet the Team' (27 January 2022).

667 UJO TEAM, 'Evolution of Ujo Music: The Tiny Human Retrospective' (7 November 2016) *Medium*, (13 July 2024).

668 GERARD DAVID, 'Why Spotify wants some Blockchain: how music industry Blockchain dreams work' (27 April 2017) *Rocknerd*.

industry than the direct-to-fan selling mode.[669] The critical comments had been made from the perspective that Ujo Music had failed to move to stage two of the innovation trajectory and the firm's statement alluded to the fact that they were actually in the zero-th stage, still "looking for the right nail" to hammer[670]. When Ujo Music is viewed as part of the innovation commons, the sarcasm of the comments loses substance.

Since 2014, many applications have been created. Coders have optimised the licensing process and payment distribution and created databases of works. Their code functions well. From their perspective, there are good opportunities for musicians to sell their music, if they enter their works and start offering them through their platform. As already mentioned, it is not the goal of coders to successfully sell their product on the market; that is the goal of technology companies.

B. Technology Companies

Companies are an example of organised social systems whose goals correspond with the function of the economic system.[671] According to Luhmann, the function of the economic system is to ensure supply under the condition of scarcity.[672] The economic system comprises markets, and markets make up the environment of companies,[673] which base their decisions on observation of the respective markets.[674] The decision-making can also depend on the goals of the company.[675] The goals can be various, the ultimate ones being survival, self-sufficiency and success.[676] In order to operate, a company must be able to make payments, e.g., in the form of coders' salaries. The money for the payments must be acquired in the economic system.[677]

To acquire the money, technology companies distribute products created by coders to their customers. In order to be successful, they balance the investment costs for a product's development with the product's features and decide

669 UJO TEAM, 'Emerging from the Silence' (29 August 2016) *Ujo Music*.

670 UJO TEAM, 'Emerging from the Silence'.

671 See LUHMANN, *Organisation und Entscheidung*, pp. 256-257.

672 LUHMANN, Theory of Society, Volume 1, p. 96.

673 LUHMANN, *Die Wirtschaft der Gesellschaft*, p. 94.

674 LUHMANN, *Die Wirtschaft der Gesellschaft*, pp. 73-74 and 109.

675 LUHMANN, *Die Wirtschaft der Gesellschaft*, p. 286.

676 DONALDSON GORDON / LORSCH JAY WILLIAM, *Decision Making at the Top: The Shaping of Strategic Direction*, New York: Basic Books, 1983, p. 162.

677 LUHMANN, *Organisation und Entscheidung*, p. 405.

when to launch it. It is not necessary for the final product to be the most efficient solution to the problems it is designed to solve; the final product does not have to be the coders' best. Technology companies weigh several factors, and the final product is a compromise. In any case, it must meet the needs of users.[678]

Start-ups began developing products for artists a few years after blockchain was introduced. In 2013, ascribe started to develop a blockchain that would help artists have more control over their works. The blockchain was developed for creators of digital art, who had trouble convincing the public of the value of works that could easily copied, but it would also have been applicable to other works of intellectual property, such as music. The project was abandoned in 2016 due to the challenges encountered. One of the main problems was scaling, i.e., processing large amounts of transactions fluently, as the blockchain technology was not mature enough. Another challenge was the problem of user experience caused by inflexible IP licensing. This problem motivated ascribe creators to take part in another project that gave rise to an open standard for IP licensing on blockchain.[679]

That standard is called COALA IP protocol. It is an open protocol developed by the *Coalition of Automated Legal Applications* (COALA) research and development initiative. This initiative gathers experts from academia, industry and civil society and enables them to carry out research on the promises and challenges of blockchain for society.[680] COALA has many working groups, one of them for intellectual property. This working group created the COALA IP standard[681] that can be used under a Creative Commons licence by anyone who needs to deal with IP attribution and licensing on their blockchain or distributed ledger technology.[682]

678 An example of balancing interests at Ujo Music: "We are constantly faced with the trade-offs of having to build a product used by users & building the platform that powers it. We have to build the car & the engine at the same time. Balancing these trade-offs is hard. We can't wait forever to build out the most perfectly decentralized architecture, only to have a product no-one uses. However, we have to have a product that's compelling enough in its differentiation that people can use it today with the benefits afforded to us by current decentralized platforms." UJO TEAM, 'Ujo Public Alpha Technical Stack' (9 March 2018) *Blog Ujo Music*.

679 All information about the project of ascribe is taken from ascribe, 'ascribe is no longer active' (1 April 2020).

680 COALA (1 April 2020).

681 "COALA IP's goal is to establish open, free, and easy-to-use ways to record attribution information and other metadata about works, assign or license rights, mediate disputes, and authenticate claims by others. We believe there should be a global standard at the data level, without the need for centralized control." COALA IP, 'COALA IP Spec / Whitepaper', *GitHub* (13 July 2024).

682 BROUDY ALEX, 'Automating Intellectual Property for the Decentralized Web' (16 July 2018).

COALA IP protocol was used by one of the first projects concerning music licensing, Ujo Music. As discussed above, the first artist to test their service was Imogen Heap, who released her song "Tiny Human" with them on 2 October 2015. End-users could buy the song using the cryptocurrency ether. A smart contract then redistributed the amount paid among Imogen Heap and other collaborators. Another artist, RAC, released a whole album with Ujo Music in 2017.[683]

Ujo Music was founded in 2015[684] and was developed on the platform ConsenSys.[685] ConsenSys is a platform that gives its employees freedom to come up with ideas, to discuss them and then to collectively decide what to work on further.[686] They use the blockchain platform Ethereum to organise cooperation among themselves, e.g., they set bounties that are released after completion of a certain code or they rate each other's performance.[687] This shows how blockchain can also be used to manage the internal processes of technology companies.

The relevant blockchain-based products target artists, labels, service providers such as streaming platforms, event organisers and/or end-users. The products have different affordances for each of the groups. Artists can usually create a profile, upload content, offer access to it on the blockchain-based platform or decide which other service providers the content should be distributed to. Sometimes the artists can also raise money from the public with their projects (so-called crowdfunding).[688] Labels can use the blockchain-based services as distributors if they provide them with their catalogues. They can also use them for royalty reporting and payment processing.[689] Service providers can offer the content of the blockchain-based distributors according to conditions set by the artists.[690] Event organisers can

683 OBERHAUS DANIEL, 'This DJ Has Released the First Full-Length Album Using the Ethereum Blockchain' (7 July 2017) *VICE*.

684 DE VILLIERS JAMES, 'This SA creator of two Twitter apps – with over a million users – wants to build the next Spotify with blockchain' (6 June 2018) *News24*.

685 TAPSCOTT/TAPSCOTT, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, p. 88.

686 TAPSCOTT/TAPSCOTT, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, p. 89.

687 TAPSCOTT/TAPSCOTT, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, p. 90.

688 eMusic plans to enable crowdfunding. EMUSIC, 'Redefining Music Distribution Through Blockchain', p. 27.

689 EMUSIC, 'Redefining Music Distribution Through Blockchain', pp. 17-18.

690 EMUSIC, 'Redefining Music Distribution Through Blockchain', p. 18.

book artists for upcoming events.[691] End-users can either buy or stream music from the blockchain-based services, or they can sometimes get rewarded by the service for rating or reviewing content.[692]

All the platforms have in common the notion that in order to develop new business opportunities brought about by blockchain, they have to build the necessary infrastructure, such as creating title registries. In the music industry it is a function that many private companies needed to perform to provide their services even before the blockchain era. The database of rights entitlements is one of the key elements of providing licences to copyrighted works, so blockchain-based platforms are also creating them. So far, there is no single database of all right titles to musical works that would be publicly available. With blockchain, the debate about creating such a database has been revived. For example, Ujo Music, after evaluating the case of the "Tiny Human" song, announced that they would look into whether they could create something akin to what the Global Repertoire Database[693] should have been.[694]

The example of Ujo Music shows that creating something innovative does not mean precisely predicting what all its effects will be. Neither does it include thinking through all the possible consequences and side effects of deploying it. It is not possible to foresee them all. Technology companies often launch their product and then constantly revise its further development based on the reactions from the market.[695] In the end, the product either succeeds, dies, or is transformed. All bad side effects are dealt with later because of the outside pressure to resolve them.

C. Artists

This section is about the artists who find blockchain potentially relevant for their activity. Imogen Heap has already been mentioned as an example of such an artist, the cellist Zoë Keating is another[696]. Until now, blockchain has not resonated with artists in general, but only with a certain group. In this

691 For example through the service Viberate. Viberate (3 February 2022).

692 Aurovine (13 July 2024).

693 See Chapter 2.I.A.

694 UJO TEAM, 'Emerging from the Silence'.

695 It is also called the lean start-up approach. See SHEPHERD DEAN A. / GRUBER MARC, 'The Lean Startup Framework: Closing the Academic-Practitioner Divide' (2020) *Entrepreneurship Theory and Practice*, pp. 967-998, at pp. 968-969.

696 HOWARD, 'Bitcoin and the Arts: An Interview with Artist and Composer, Zoe Keating'.

chapter, in addition to describing the specific code and structures of the group that Keating and Heap are examples of, it will also be explained how this group was formed.

The system of art differentiated itself in the late eighteenth and early nineteenth centuries.[697] According to Luhmann, the function of art is "demonstrating the compelling forces of order in the realm of the possible."[698] This definition is mentioned to provide a fuller picture of Luhmann's thoughts, it will not be explained further. What is more important is one of the shifts that were necessary for the system of art to differentiate, the establishment of the art market that replaced the system of patronage as the main channel for purchasing artworks at the end of the seventeenth century.[699] The art market is a structural coupling[700] of the system of art and the economic system.[701] It is the price that determines whether a transaction takes place, and the price is determined by the artist's reputation and the scarcity of the work.[702]

When artists started producing works for a free market, a serious discussion emerged about who should profit from the sales. Before the free market, from the sixteenth century onward, publishers secured profits for themselves by being granted a monopoly on a certain territory where no one else was allowed to reprint their books.[703] The eighteenth century was a time of broad discussions about what copyright meant and how it was justified. Eventually, authors received support in newly adopted statutes throughout Europe and gained intellectual property rights. The justifications encompassed various arguments, namely 1) copyright ensures that creators are rewarded for their work, 2) copyright is a necessary incentive for individuals to be creative and 3) copyright is part of natural law.[704] Nowadays, it is the economic incentive that prevails and is usually taught in intellectual property courses. Without this incentive, the creation and dissemination of intellectual works

697 LUHMANN, Art as a Social System, p. 166.

698 LUHMANN, Art as a Social System, p. 148.

699 LUHMANN, *Art as a Social System*, pp. 162–163.

700 For thorough discussion of the term 'structural coupling' see LUHMANN, *Law as a Social System*, pp. 40–44.

701 LUHMANN, Art as a Social System, p. 243.

702 LUHMANN, *Art as a Social System*, pp. 163–164.

703 DRAHOS, *A Philosophy of Intellectual Property*, pp. 22 ff.; VOGEL MARTIN, 'From Privilege to Modern Copyright Law' in Bently Lionel, Suthersanen Uma and Torremans Paul (eds), *Global Copyright: Three Hundred Years Since the Statute of Anne, from 1709 to Cyberspace*, Cheltenham, UK / Northampton, MA: Edward Elgar, 2010, pp. 116–121, at pp. 116–117.

704 DRAHOS, *A Philosophy of Intellectual Property*, p. 25.

would be below its optimum level. It is also a very frequent argument in the blockchain discourse that artists should be able to earn a living from their artistic work when they are popular and their works are often used.[705]

In order to enforce their rights, artists need to know when their works are used. However, the intangible and non-rival nature of musical works makes it difficult to track usage and enforce remuneration. Historically, this is why CMOs emerged. They help the creators monitor the use of their works and conclude licences. The Internet has made tracking of usage even more difficult, although the digital traces of usage always exist in some way. Although the digital service providers collect data about the selling or streaming of musical works online, they do not automatically share this with the musicians, who miss the data that could help them to adjust their marketing.[706] The streaming services provide information about usage to the licensors, so they can redistribute remuneration accordingly. If the licensing agreement, typically between a record label and a user, involves a non-disclosure agreement, the artists cannot know how much the user paid for the licence, what percentage the record label keeps, how much their works have been used and how much remuneration they should get.[707] This can also be true regarding the remuneration received from the CMOs,[708] especially when they gather income from various sources and receive information on usage in various data standards. Another complaint by artists is that although licensed (and thus paid for) music is consumed online in vast amounts, their portion of the revenues is rather small.[709]

The group of artists involved in the blockchain debate is composed of individuals who have gained a certain popularity, but despite a lot of streams do not earn a lot. Their explanation for this unsatisfactory situation is that too many middlemen take a cut of the revenue and leave creators with a small fraction of it. Those artists liked the idea of creating a new environment where they might get rid of the middlemen and end up with better earnings. They would also have access to information on how their works are used.

705 HOWARD, 'Imogen Heap's Mycelia: An Artists' Approach for a Fair Trade Music Business, Inspired by Blockchain'. See also RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 28.

706 HEAP, 'Blockchain Could Help Musicians Make Money Again'.

707 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 14.

708 See GRAY KEVIN, 'Kobalt Changed the Rules of the Music Industry Using Data – and Saved It' (1 May 2015) *Wired*.

709 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', pp. 5–6.

They might be in more direct contact with fans, share with them what they want, be more independent, decide by themselves how their works can be used and under what conditions and take back sovereignty from the music publishers and record labels.[710]

This is why some artists have co-operated with technological companies to develop products for music licensing, seeing an opportunity to be empowered. The characteristics of these authors explain why mostly independent musicians distribute their works through blockchain-based products. However, the most consumed music is that of the big stars, and therefore none of the blockchain-based products have gone mainstream. Big stars are not interested in them as they are in a good position to negotiate the conditions of the use of their works. They do not perceive a need to change the current music ecosystem, in which they are already 'winners'. Moreover, in view of legal commitments, it is easier for an emerging artist, who has not yet entered into a contract with a record label or a publisher, to join a blockchain-based platform than for an already established artist.[711]

It is apparent that the view of artists as commodity producers has a strong presence in the debate on blockchain and licensing, as licensing is a direct link to the art market. The advantage of the new blockchain-based products is a reduction of frictions in the licensing process and the provision of more information and control over consumption of the works for the artists.

D. Music Industry Intermediaries

Music industry intermediaries are entities that stand between musicians and the users or end-users. They help artists with the production of music assets, with their marketing, distribution and/or licensing, so that the assets are easily accessible on the market. As a result, the artists do not need to invest their own time, energy and financial resources to conquer the market. According to this definition, CMOs are also intermediaries; they will not be discussed here, but in a separate chapter below.

710 HOWARD, 'Imogen Heap's Mycelia: An Artists' Approach for a Fair Trade Music Business, Inspired by Blockchain'; HOWARD, 'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain'; TAPSCOTT/TAPSCOTT, *Blockchain Revolution: How the Technology behind Bitcoin Is Changing Money, Business and the World*, pp. 226 ff.

711 O'DAIR/BEAVEN/NEILSON/OSBORNE/PACIFICO, 'Music on the Blockchain', p. 19.

This chapter discusses the traditional for-profit intermediaries, who scout for new talent, invest in the production of music assets, promote them and search for ways to monetise them. Their income consists mainly of percentages of royalties that are paid for the use of the works. Therefore, they are interested in making the artists' work profitable. However, they do not necessarily incentivise innovations of the artists' creations once they have become profitable,[712] which is opposed to the natural tendency of the system of art to always come up with new forms.[713]

The most important intermediaries in the world of music are record labels and music publishers, each having a different role in the music industry.[714] Publishers enter into contracts with songwriters and composers and are granted rights to the musical compositions. In the nineteenth century, publishers were the most important intermediaries as they produced and distributed sheet music that was used in concerts as well as for home entertainment.[715] After the invention of broadcasting, rights management became the new main function of publishers.[716] Nowadays, publishers help artists to create recordings of their work, to reach audiences through selling records or through live performances and to clear the respective rights properly.

After the invention of the phonograph and broadcasting, the dominant position within the music industry shifted from publishers to the record labels that produced the sound recordings. Record labels sign contracts with the performers of musical compositions, produce the phonograms and get rights to them as the producers. Usually, they pay the musicians an advance. If the earnings from sales of records exceed the advance and other contractual fees that artists have to pay the label, the artists may start receiving a certain percentage of those royalties. The rest is kept by the record label.[717]

Record labels and publishers are now usually connected through proprietary relationships. This development started in the twentieth century with the creation of mechanical rights, which meant that the labels needed a licence from the publisher to make a phonogram of a musical work. This led

712 TSCHMUCK, *Creativity and Innovation in the Music Industry*, p. 261.

713 LUHMANN, *Art as a Social System*, p. 174.

714 There has been a music industry since the eighteenth century, when the culture of public music concerts emerged. TSCHMUCK, *Creativity and Innovation in the Music Industry*, p. 9.

715 TOWSE, 'Economics of Music Publishing: Copyright and the Market', p. 411; TSCHMUCK, *Creativity and Innovation in the Music Industry*, p. 10.

716 TOWSE, 'Economics of Music Publishing: Copyright and the Market', pp. 413–414.

717 More detailed descriptions of the usual contractual clauses on payments can be found in WEISSMAN, *Understanding the Music Business: Real World Insights*, p. 38.

to labels setting up or buying publishing houses.[718] The market of intermediaries is oligopolistic these days. There are only three major labels, which also own their publishing houses.[719] Apart from these, however, there are many small independent labels.

In the twenty-first century, the repertoire of intermediaries offering useful services to rights holders regarding licensing works expanded. There are innovative projects that were started and some of them have even been labelled disruptive.[720] This is the case with Kobalt Music, founded in 2000, which monitores the online use of works for songwriters, collects revenues on their behalf and sends them to the songwriters, including all the data analytics on usage.[721] Kobalt operates on a global level in a centralised manner, unlike the publishing houses with many local offices, hence it distributes the royalties faster.[722] Kobalt does not acquire any rights in the musical works, it only takes a low percentage of the royalties collected from the online music services.[723] Its success among songwriters proves that transparency, access to data and faster payment of royalties are cherished by the artists.

All those benefits are also promised by the blockchain-based applications. One of the first arguments in the blockchain discourse was that blockchain-based platforms could take on some of the activities of the traditional intermediaries, such as redistribution of royalties.[724] This could also bring more speed and transparency to the value chain, providing information to the contributors to the work on how revenues were split between rights holders, quickly settling the royalties and also providing information on how the revenues flowed in.[725] Artists would welcome the transparency on "who gets what and why"[726], as well as insight into how their works are consumed.[727] At

718 TSCHMUCK, *Creativity and Innovation in the Music Industry*, p. 260.

719 The labels are Universal Music Group, Sony Music Entertainment and Warner Brothers Music.

720 ROSS DANNY, 'Meet the Tech Company Disrupting the Music Industry (And It's not Spotify)' (4 May 2018) *Forbes*.

721 GRAY, 'Kobalt Changed the Rules of the Music Industry Using Data – and Saved It'.

722 ROSS, 'Meet the Tech Company Disrupting the Music Industry (And It's not Spotify)'.

723 GRAY, 'Kobalt Changed the Rules of the Music Industry Using Data – and Saved It'.

724 HOWARD, 'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain'.

725 O'DAIR/BEAVEN, 'The Networked Record Industry: How Blockchain Technology Could Transform the Record Industry', p. 475; O'DAIR/BEAVEN/NEILSON/OSBORNE/PACIFICO, 'Music on the Blockchain', p. 11.

726 HOWARD, 'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain'.

727 HOWARD, 'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain'.

the same time, however, the record labels are motivated to keep that data secret, in order to seem to be a necessary partner for the musicians.[728] As record labels take care of distribution, it is not likely that they would agree to such development towards more transparency. The current model would have to be disrupted in order to realise such a scenario, or at least the right level of transparency that would still fit the interests of intermediaries would have to be set.[729]

Another argument brought up in the discourse was that blockchain could help musicians avoid intermediaries in concluding a licensing transaction,[730] the reason being that artists could reach users and end-users directly through a blockchain-based platform. This argument tackles only the distributive function of intermediaries. Distributors are engaged by labels or artists to get the music assets to the right channels, from which they reach end-users, such as streaming platforms or stores. Distribution could indeed be moved to blockchain-based platforms and artists could upload their works themselves. However, record labels and publishers add value to the chain in another way. They invest heavily in promotion, as they are motivated to gain back their investment in the production of the music asset. It is considered necessary to be signed with a record label to be commercially successful.[731] Because of this, it is suggested that the publishers and labels will remain relevant intermediaries in the music industry.[732] It is in their interest to have a hand in the distribution, too.

To conclude, blockchain-based services have the potential to change the processes within the industry. The scope of changes that are or can be made is completely dependent on the functionalities that the emerging blockchain-based services offer. Time will show what services prove themselves and eventually influence the activities of music industry intermediaries. There are no signs, though, that the intermediaries themselves are pushing for any blockchain-based optimisations to the industry.

728 HOWARD GEORGE, 'Bitcoin Can't Save the Music Industry Because the Music Industry Will Resist Transparency' (22 May 2015) *Forbes*.

729 O'DAIR/BEAVEN/NEILSON/OSBORNE/PACIFICO, 'Music on the Blockchain', p. 13.

730 TRESISE/GOLDENFEIN/HUNTER, 'What Blockchains Can and Can't Do for Copyright', pp. 151–152.

731 See TSCHMUCK, *Creativity and Innovation in the Music Industry*, p. 254.

732 O'DAIR/BEAVEN/NEILSON/OSBORNE/PACIFICO, 'Music on the Blockchain', p. 472.

E. Users

Users are entities that use copyrighted works. This section focuses on those users whose business is based on providing access to a large repertoire of musical or audiovisual works in multiple territories, and who thus have to acquire many licenses. Examples of such users include digital service providers such as Spotify, Netflix or TikTok. Because acquiring licences comes with high costs, these users are interested in lowering them.

The scope for lowering the transaction costs of licensing copyrighted works is affected by legal regulation, which is the result of political decisions in a certain territory. Users have to comply with the rules in order to run their business. Although they operate on a global basis, they still have to comply with the territorial legislation. The resulting high transaction costs for licensing material do not encourage investment in establishing new online services.[733] This goes against the interests of entrepreneurs, consumers, and the whole of society, which is driven by economic transactions.

Another large part of users' administrative work consists of preparing reports about the use of the works, so that the respective rights holders can get their share of remuneration. Streaming services often have to report the use of works to record labels in the format the label requires. This is costly and inefficient not only for the streaming services, which have to prepare reports in various formats,[734] but also for the administrators of rights, who redistribute the royalties to the rights holders. It would be more efficient if the reporting system were unified. The standard-setting organisation *Digital Data Exchange* (DDEX)[735] sets such reporting standards.[736] Nowadays, users are encouraged to report in the Digital Sales Report Message Suite (DSR) released by the DDEX.[737]

Compared to music industry intermediaries, users are more open to enhancing transparency. For example, Spotify favours more transparency in the revenue streams, because some artists are concerned about the payments they receive from Spotify. Although Spotify pays the labels and the

733 HOWARD, 'D. A. Wallach on Spotify, Bitcoin, and a More Moral Music Industry'.

734 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 14.

735 The members of DDEX are collecting societies, other representatives of rights holders (e.g. Kobalt) and users.

736 RETHINK MUSIC, 'Fair Music: Transparency and Payment Flows in the Music Industry', p. 23.

737 DDEX, 'Digital Sales Reporting Message Suite (DSR)' *DDEX Knowledge Base*.

labels are those who redistribute the payments to the artists, it is to Spotify that concerns about intransparency are being addressed.[738] More transparency throughout the whole chain would bring more clarity to what happens with the money paid by the licensees.

To sum up, users support any solutions that would lower their transaction costs and even enhance transparency. However, those services do not explicitly call for the implementation of blockchain in order to do so. As they have already built their infrastructures to deal with the current system of licensing and reporting, they are not pushing for a completely new system, but are interested in any optimisations.

F. Collective Management Organisations

The CMOs are important subsystems of the market for copyrighted works. As described in Chapter 1, authors gave impetus to the establishment of CMOs, so that their economic interests are better protected. The CMOs are organised social systems, whose members are holders of copyright or related rights. The main goal of the CMOs is to secure income for the rights holders from the use of their works. CMOs are also advantageous to users, because they facilitate identifying rights holders. Lowering transaction costs for both creators and users has become the main rationale of the CMOs. Thanks to the CMOs, users do not have to liaise with rights holders themselves in order to licence a work.

The CMOs operate in the market for copyrighted works and thus in the economic system, at least as far as their function of ensuring income for the rights holders is concerned. However, this is not their only function. They also fulfil cultural and social functions in some countries, mostly in continental Europe. When it comes to these functions, CMOs operate in the system of art. In both systems, CMOs' activity consists of money transfers – from the licensees to the CMOs and from the CMOs to the rights holders. The difference between the systems lies in how the CMOs finance themselves and the rights holders. Whereas within the economic system, the CMOs are self-sufficient, as they keep part of the remuneration paid for the licences to cover their costs and redistribute the rest among the rights holders, in the system of art, they transfer money that has been paid for another purpose than the support of art. In this realm, CMOs need to find resources for social and cultural purpos-

738 KING MIKE, 'Spotify's D. A. Wallach Explains How Spotify Pays Artists' (6 September 2012) *Hypebot*.

es, which they do not have from their activities in the system of art but, fortunately, from their activities in the economic system.

In the course of time, CMOs have emerged in most countries and have become monopolies *de iure* or *de facto*.[739] This has brought about legal regulations on abuse of a dominant position, duty to conclude contract, tariff-setting procedures, etc. Such regulation is light in some countries (e.g., Great Britain) and quite extensive in others (e.g.m Germany).[740] There are also major differences for example between Europe and the USA in terms of legal regulation.[741] Legal regulation is a very important factor that determines how the national CMOs function.

Although CMOs are entities of the market, their monopolistic or quasi-monopolistic position and the consequences thereof set them apart from common entrepreneurs. When they set tariffs and negotiate licences, not only do they try to achieve the best licensing conditions for the authors they represent, they are also often obliged to undergo a second-order observation to check whether the required fees could be assessed as an abuse of a dominant position in the art market. When doing this, they enter the legal system and try to observe themselves from that perspective. Further, CMOs are often not-for-profit organisations, which means that they only cover their costs while the rest of the collected money is distributed to the represented rights holders.

In the European Union, the activities of CMOs have transformed due to changing legal regulations. From mono-repertoire mono-territorial licensing, their practice shifted towards multi-repertoire mono-territorial licensing, which in turn has been recently replaced by multi-repertoire multi-territorial licensing. The idea was to promote competition between the CMOs and thus bring more efficiency to the licensing services. As a consequence, some CMOs are busier than others. Online use of musical works is gradually transferred onto a few hubs that license it for the whole EU territory (see Chapter 1.IV.B.4).

As explained above, CMOs were established primarily for economic reasons and the blockchain and CRM discussion is also focused on the economic aspect, namely making CMOs more efficient. The discussion started from a broad perspective by describing the whole digital ecosystem that might be created using blockchain.[742] CMOs are a part of the ecosystem. Although some

739 FICSOR, *Collective Management of Copyright and Related Rights*, p. 123.

740 SCHWEMER, 'Emerging Models for Cross-Border Online Licensing', p. 90.

741 For more information on CRM in the US see LUNNEY GLYNN S., 'Copyright Collectives and Collecting Societies: The United States Experience' in Gervais Daniel (ed), *Collective Management of Copyright and Related Rights*, Alphen aan den Rijn: Wolters Kluwer, 2016, pp. 339-382.

742 See D. A. WALLACH, 'Bitcoin for Rockstars'; HOWARD, 'Imogen Heap's Mycelia: An Artists' Approach for a Fair Trade Music Business, Inspired by Blockchain'; HOWARD,

authors have suggested that blockchain could make CMOs obsolete, it was concluded in Chapter 2.V that CMOs are players that are very likely going to stay on the scene. For the reasons explained above, it is expected that the opinions of those CMOs that provide multi-territorial licences for online use of musical works on whether blockchain can be useful will be especially relevant.

There have not been many comments on this topic from CMOs themselves. Some CMOs' representatives have expressed views on blockchain and its potential uses, such as Mike Douglas, CTO and CEO of PPL.[743] Douglas observed how the blockchain behind Bitcoin functions and noted that blockchain might help with "getting clean metadata and reconciling against other data sources".[744] He asserted that some of the promises of blockchain technology would be helpful (democratic validation of information), but the problem was resolution of disputes over identity and contributions.[745] The potential, in his view, is not in improving the current distribution system, but in improving the accuracy of who they distribute to.[746] Executives of both PPL and PRS for Music[747] have stated that they would welcome automated solutions for "authoritatively defining creator contributions and performer line-ups".[748] According to Silver, CMOs should explore how to get more efficient by using blockchain for data gathering, identity validation and transaction handling.[749] He notes that CMOs need to improve the quality of their metadata and the integrity of the data between databases.[750] The initiative of SACEM, PRS for Music, and ASCAP described in Chapter 2.II.C has not yet brought any concrete results to the public.

'Imogen Heap Gets Specific about Mycelia: A Fair Trade Music Business Inspired by Blockchain'.

743 PPL provides music licences on behalf of performers and record companies to radio and TV broadcasters in the United Kingdom.

744 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 44.

745 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 44.

746 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 46.

747 PRS for Music provides music licences on behalf of the authors and music publishers in the United Kingdom.

748 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 49.

749 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', p. 49.

750 SILVER, 'Blockchain or the Chaingang? Challenges, Opportunities and Hype: The Music Industry and Blockchain Technologies', pp. 49-50.

IV. Summary of the Discourse and Concluding Remarks

It can be summarised that different subsystems react differently to the emergence of blockchain, which is an event that happens in their environment. Coders, technology companies, artists, music industry intermediaries, users and CMOs have been identified in this Chapter as the relevant subsystems taking part in the discourse about the use of blockchain for CRM.

The end-users or consumers of musical works have not been included among these subsystems. It is true that end-users can have a functional role in some of the blockchain-based products, e.g., as owners of tokens of a musical work, promoters of musical content, creators of playlists, verifiers of metadata, etc., and thus play an important role in co-creating the blockchain-based platforms. However, it is not possible to identify any boundaries, structures or processes that would constitute end-users as a system. End-users can be described only as the sum of persons who participate in creating the value of the blockchain-based product. There are various motivations to participate: to support artists' creativity and independence from the influential music industry intermediaries; to support the idea of social justice or pure profit motives. It remains to be said that there is no evidence that end-users have contributed to the CRM and blockchain discourse, which is not surprising given the fact that they do not form a system that could produce the respective communication.

The different reactions of the subsystems identified in this analysis to the emergence of blockchain can be used to illustrate why there are contradictory opinions on whether and how blockchain will change the licensing of musical works and CRM. As every system uses its own binary code to select information and produce communication, the reactions to blockchain can vary depending on the 'lens' of the system. Coders are able to create a code (as efficiently as possible) that can be used for licensing works and analysing data on the use of works. Technology companies decide whether to make use of blockchain and what the affordances of the code should be, with the aim of offering a viable product. Other subsystems analyse whether it is worth using the new products. Some artists welcome them, music industry intermediaries rather ignore them, digital service providers would welcome some of their affordances and CMOs are looking into whether it would be useful to adopt the blockchain technology.

All of the blockchain-based products need to rely on a database of musical works and sound recordings that contains all the necessary metadata. The best case would be a complete database of all musical works and recordings in the world. Creating such a database has already been attempted in the past but the attempt failed. That database would only have affected CMOs, though, so one should not automatically expect the same result for the blockchain-based products that are being developed now and that may affect more groups of potential users, from artists to music industry intermediaries, digital service providers and end-users. The outcome might be different from that of the attempt to create the GRD.

The conclusion of this analysis is that there is a potential for blockchain-based products, especially when it comes to licensing works produced by independent labels and artists who would prefer to be more in charge of their music, without too many intermediaries having a say in the creation of works and their distribution. Artists would also like to have more information about the use of their works. This information can be provided by new intermediaries (such as Kobalt), but the rest of the process of the music business remains unaltered. Blockchain-based products may bring manifold disruptions to the processes within the music industry, though not necessarily. It depends on the authors of the code and the technology companies what affordances or functionalities the products offer. The potential changes to the practices within the music industry are encouraged by the above-mentioned group of artists and by users of the copyrighted works (digital service providers) who would welcome more transparency or easier reporting of the data on usage. In contrast, music publishers and record labels do not take any notable stance on the topic of using blockchain for licensing works. The CMOs are looking into the possibilities of blockchain, but have not taken any concrete steps yet. While the systems theory that was used to analyse the discourse on blockchain and CRM cannot provide a prediction of the future as an outcome, it sheds light on the reactions of each system separately. In our view, there is no blockchain-based application entering the mainstream any time soon. As the 'stars' of the music industry as well as the intermediaries lack the motivation to turn to these applications as distribution channels, the demand that comes from independent artists and streaming platforms is unlikely to bring about changes affecting the whole industry. CMOs themselves may decide to implement blockchain, but they have not yet done so. If they did, this would probably initiate broader changes within the music industry, as more stakeholders could be motivated to benefit from the features such as the unified database or more transparent transaction data.

Conclusion

The introduction of blockchain has prompted many people in business to think about how to use it for smoother transacting. It started with the outline of the Bitcoin architecture, which enables transfers of payments in bitcoins without the need to trust an intermediary that conducts the transactions, relying instead on an algorithm that enables the transactions. This blockchain architecture was further developed into a general-purpose architecture, which enables exchange of tokens representing any kind of value with the help of 'smart contracts' that can be programmed according to individual wishes. Such a general-purpose blockchain could, according to many authors and business insiders, improve transacting within the music industry.

The latest development in the music business has been brought about by online streaming. The providers of online streaming services offer consumers access to music in exchange for a subscription fee or for receiving advertisements. The services need to license the music content that they want to offer. Usually, it makes economic sense for them to offer as much music content as possible and therefore they seek licences for a global repertoire. Also, they often want to cater to customers all over the world so they will seek licences for music content that cover as many different territories as possible.

The process of acquiring licences is cumbersome because it is not possible to apply for a licence for a global repertoire and for the whole world in one place (in a so-called 'one-stop shop'). Instead, many different licences have to be acquired from many entities; for each territory, for all rights, from all rights holders to all musical works and sound recordings that are requested. This is an effect of fragmentation and of the fact that there is no unified global law on copyright and related rights. Instead, different legal rules must be obeyed depending on the territory.

There have been political endeavours to make licensing of musical works and sound recordings easier in order to promote the digital economy, innovation or cultural diversity. Thus, it is a relevant question whether and how blockchain might further those endeavours. It has been discussed in this thesis how blockchain might facilitate the licensing of musical works and sound recordings within the current legal framework.

To provide an analysis of this topic, the legal framework of collective management of copyright and related rights was first discussed, because

CRM is the common way of providing licences for streaming services. Chapter 1 provided an analysis of the social, political and cultural factors that shaped CRM in order to understand why CRM exists and whether it is still needed. The conditions under which CRM emerged were discussed, starting with the functional differentiation of society, which resulted in the differentiation of the systems of art and the economy and the emergence of the art market. Another factor that played an important role in forming the rules on CRM was technological development, as it changed the way musical works are distributed and consumed.

It was also described how the protection of copyright and related rights emerged and developed, as the justification for these rights was also the point of departure for the justification of CRM. Copyright to musical works emerged first in France at the end of the eighteenth century and other countries followed, introducing similar protection. The scope of protection was broadened after new technologies enabled mechanical reproduction of musical works, the production of sound recordings, and easy ways of copying them. The subjects of rights became more numerous and not only the authors and publishers, but also the performers and producers of sound recordings received rights. These were not necessarily the same ones, as copyright remained the domain of authors and publishers while the category of related rights was invented to protect performers and record producers. The new technologies brought such changes to the production and consumption of music content that it became ever more difficult for the artists to manage their rights individually and to control whether their rights were being infringed. This became the task of CMOs.

The cradle of CMOs was France and other states adopted (and adapted) their model of ensuring rights enforcement for creators. The main tasks of CMOs are the concluding of licences with users, the collection of remuneration and the distribution of remuneration to the rights holders. The CMOs lower the transaction costs of concluding licences for both rights holders and users. Without CMOs, the transaction costs might be too high, which would preclude licensing and thus also the possibility of rights holders generating income from the use of their works. The works would either be pirated or simply not be used. Because of the demand for licences covering several territories, national CMOs entered into reciprocal agreements that enabled them to provide multi-repertoire mono-territorial licences. Apart from their functions concerning licensing and distribution of remuneration, some CMOs also have cultural and social functions, especially in continental Europe. However, this function is being stymied by recent legal developments in the EU, which happened in response to the phenomenon of online music

streaming. The CRM Directive from 2014 goes rather against the principle of solidarity among artists and the promotion of cultural diversity and instead promotes more competition among CMOs. Although the aim of the Directive was to make licensing more efficient, it paradoxically led to more fragmentation in the licensing process, which means that even more licensing entities need to be contacted to receive the necessary licences for a global repertoire. However, this might be a temporary state and the situation may improve as the market consolidates. In this situation, blockchain entered the scene and led many insiders from the music industry to believe that the processes within the music industry, including those within CRM, could be optimised, if not disrupted.

Chapter 2 of the thesis discussed what blockchain is, what its characteristics are that make it suitable for designing applications for the licensing of music and what kinds of applications have already been introduced or are being envisioned. The main features that blockchain enables are the creation of a database of musical works and sound recordings with all the necessary metadata and the creation of a system for automated licensing and fast distribution of remuneration to rights holders. It is the general-purpose blockchain that enables operation of the applications for the music industry. Some of these applications implement 'radical' visions to disrupt the current business model and make all intermediaries between end-users and creators, including CMOs, obsolete. Others implement 'incorporative' visions and try to make use of blockchain to improve the current model of transacting in the music industry. It is widely argued in the literature that creators would profit from the transparency that the blockchain-based applications can bring, in the sense that they might receive much more data on when and where their works are being used and by whom. The blockchain-based applications either promise disintermediation, in the sense of connecting creators directly with consumers, or improvements to the co-ordination of the activities of music industry intermediaries. The activities of CMOs could also be affected as the blockchain-based products could be used for creating a database of who owns which rights. The rights could also be transferred and the problem of fragmentation of rights could be resolved if all CMOs participated in the same system for licensing works. Practically, there may be many obstacles to bringing such a system into operation. Despite blockchain's potential to facilitate direct licensing between creators and consumers, it was concluded that CMOs are unlikely to be rendered obsolete by blockchain-based applications, as they have more functions than just the reduction of the transaction costs of licensing, the most important being the negotiation of the licensing conditions and increasing the bargaining power of creators in those negotiations.

There still remains the question of whether CMOs themselves will adopt blockchain technology to improve their processes or whether blockchain will not change anything in CRM. These questions were addressed in Chapter 3 by analysing the discourse on the topic of blockchain and CRM. First, it was important to identify appropriate methods for the analysis, so that the result was a comprehensive study that left out any aspects of crystal-gazing.

A suitable approach was found in Niklas Luhmann's systems theory. Luhmann's distinguished theory of society casts society as a system divided into subsystems, each of which has a specific function. Further, each system has its own structures, processes and boundaries and operates according to its own binary code, whereby it produces information. Every system interacts with its environment in a different way. In this case, the emergence of blockchain can be viewed as an event happening in the environment of several systems and, based on the characteristics of the systems, their reactions to this event can be studied and compared. When looking at how blockchain might impact CRM or the music industry in general, the processes taking place in each subsystem were studied in order to better understand what is going on and provide a good basis for assessments of future developments.

Coders, technology companies, artists, music industry intermediaries, users, and CMOs were identified as the subsystems that take part in the discourse on blockchain and CRM. Coders are able to program applications that optimise licensing processes and the distribution of royalties and provide more transparency for artists. It is not the task of coders, however, to identify whether such applications are viable in the market and whether it is worth investing in their production. This is the task of technology companies. They decide how to allocate resources to develop products that correspond to the needs of users. They hire coders to develop such a product and invest in marketing of the product with the goal of succeeding in the market. There are currently functioning blockchain-based applications on the market that can be used, but none have yet become mainstream. A certain group of artists can also be identified as a system taking part in the discourse. The group comprises mostly independent artists, who see in blockchain the potential to be empowered, to receive useful information on the use of their works, to be in direct contact with their fans and to decide how and under what conditions their works can be used. These artists support the blockchain-based applications and some of them are involved in their development. Currently, music industry intermediaries such as publishers and record labels have a lot of say in the licensing and distribution of music content. For them, there is no need to push for any optimisations or changes to the business processes with the help of blockchain. Users who license music content to provide streaming

services, however, are interested in any optimisations that would lead to lower costs for licensing content and reporting about its use. They would also welcome more transparency in the redistribution of licence fees. However, these goals do not necessarily have to be achieved through implementation of blockchain. The last system is CMOs. Although blockchain has the potential to improve the processes of CRM, few CMOs have been publicly considering whether to implement it. The outcome of these considerations is pending.

The analysis shows that only if CMOs decide to implement blockchain for the licensing processes could it affect the whole industry. The analysis also confirmed the view of authors who claim that the development of technologies depends on the particular socio-economic context in which they are introduced.[751] This thesis describes in more detail why that is, using the example of blockchain and the music industry. Whether blockchain will become indispensable to the processes related to the licensing of music content depends on the recursive processes within each of the relevant subsystems. Werbach says that "the winning solutions need the right combination of development talent, entrepreneurial vision, financial wherewithal, and a healthy dose of luck. … Its [blockchain's] success is as much a function of the environment as of its technical virtuosity."[752] This statement is mostly confirmed by this thesis. Only a "healthy dose of luck" escapes any schematisation. It can only be acknowledged that some new event may occur in the environment or a new subsystem may enter the discourse and initiate new reactions on the part of the other subsystems and shift the development in another direction.

This research has focused on the question of effects of the emergence of blockchain on CRM within the current legal framework. Its findings could be used beyond that framework and serve the system of politics as a basis for a new regulatory approach in the realm of CRM. First, regulators may use the findings to spot the object that needs to be regulated, and second, understanding the 'lens' of each system can enable a better assessment of how the system will react to the regulatory changes and thus increase chances that the regulation achieves its goal.

751 See DE FILIPPI PRIMAVERA / LOVELUCK BENJAMIN, 'The Invisible Politics of Bitcoin: Governance Crisis of a Decentralised Infrastructure' (30 September 2016) *Internet Policy Review*, p. 12.

752 WERBACH, The Blockchain and the New Architecture of Trust, p. 4.

About the Author

Dana Mareckova holds a Master's degree in Law from the Charles University in Prague. She completed her doctoral studies at the University of Zurich. With the support of Swiss National Foundation, she spent several months as a visiting researcher at the Institute for Information Law of the University of Amsterdam and at the CERSA/CNRS in Paris, where she conducted research on blockchain and collective rights management. The Faculty of Law of the University of Zurich accepted this thesis as a doctoral dissertation at the request of Prof. Dr. Christoph Beat Graber and Prof. Dr. Tilmann Altwicker on the 5th of October 2022. Since then, Dana Mareckova has been further specializing in Legal Tech, information technology and intellectual property law.

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BLOCKCHAI
COLLECTIVI
MANAGEME

Online music streaming has become an important source of revenue within the music industry, but the necessary licensing of musical works and sound recordings can still be quite cumbersome. The thesis discusses what blockchain is, how it could facilitate global licensing, and whether it could replace or improve the current system of collective rights management.

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