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“Right this Way: A Potential Artificial Intelligence-Based Solution for Complying with Article 13 of the EU’s 2018 Copyright Directive”

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I. Introduction

On October 14, 2012, Felix Baumgartner became the first person to surpass the speed of sound without the use of a vehicle.¹ During his highly televised vertical free fall, he clocked in at a top speed of 843.6 miles per hour.² It is at speeds such as these—that border the limits of comprehension—at which the Internet grows.

Every second, over 40,000 searches are made on Google.³ By 2020, it is estimated that there will be 1.7 MB of data for every living person on Earth created every second.⁴ And as the Court of Justice’s proceedings concerning Max Schrems revealed, mega Internet platforms like Facebook can accumulate upwards of 1,200 pages worth of data on a single user.⁵ The ability of companies to monitor and governments to regulate the flow of original content can no longer be addressed by a human workforce or rudimentary data filters.

The rising tides of a sea of content bring with them greater demand for regulation and oversight, to recognize and protect the rights of individual creators and the platforms that connect them to the world. The EU has emerged as a leading edge champion in this regard, approving the Directive on Copyright in the Digital Single Market (“EU Copyright Directive”) by parliamentary vote on September 12, 2018 and moving the

¹ Summary Report: Findings of the Red Bull Stratos Scientific Summit, CA Science Center, Los Angeles, CA, January 23, 2013, (Feb. 4, 2013), https://issuu.com/redbullstratos/docs/red_bull_stratos_summit_report_final_050213.

² *Id.*

³ Bernard Marr, *How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read*, FORBES (May 21, 2018, 12:42 AM), <https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#791e441a60ba>, citing Report, Data Never Sleeps 6.0, DOMO (June 2018), <https://www.domo.com/solution/data-never-sleeps-6>.

⁴ *Id.*

⁵ Kashmir Hill, *Max Schrems: The Austrian Thorn In Facebook's Side*, FORBES (Feb. 7, 2012), <https://www.forbes.com/sites/kashmirhill/2012/02/07/the-austrian-thorn-in-facebooks-side/>.

Directive to the next stage of the consideration process.⁶ Article 13 of the EU Copyright Directive requires major content service providers like Facebook and Google, who store and make available to the public large amounts of original works by others, to take effective measures for safeguarding said works. These measures include a duty to use “content recognition technologies.”⁷ The controversial EU Copyright Directive currently awaits formal Trilogue discussions that are expected to be approved by early 2019.⁸ This paper will examine (1) the EU’s approach to copyright protection; (2) the 2018 Copyright Directive; and (3) how employing artificial intelligence (“AI”) in the data filtering software of platforms obligated by Article 13 requirements may enable these user-content-based mega-websites to comply with the 2018 Copyright Directive.

II. The EU’s Approach to Copyrights

I will begin by defining what a copyright is before briefly explaining how authors obtain and benefit from copyrights. I will then provide a short history of the developments leading to the 2018 EU Copyright Directive.

Copyright Definition

In its most essential form, a “copyright” is a set of rights assigned to the author of an original work that is fixed in a tangible medium.⁹ It differs from a patent, a right to

⁶ Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market, COM/2016/0593 final [hereinafter “EU Copyright Directive”].

⁷ *Id.* at art. 13, at 1.

⁸ These discussions will involve representatives from the three main organs of the EU. *See Also* Ephrat Livni, *The EU has approved a copyright law that could change the Internet as we know it*, QUARTZ (Sept. 12, 2018), <https://qz.com/1387466/article-11-and-article-13-the-eu-copyright-law-that-could-overhaul-the-internet/>.

⁹ United States Patent and Trademark Office, *Protecting Intellectual Property in the United States: A Guide for Small and Medium-Sized Enterprises in the United Kingdom*, https://www.uspto.gov/sites/default/files/documents/UK-SME-IP-Toolkit_FINAL.pdf.

exclude others from use, and a trademark—a unique word(s) or symbol meant to represent a company or product.¹⁰

While the term “copyright” does not appear in the Treaty on the Functioning of the European Union (“TFEU”), or its predecessor, subsequent Court of Justice decisions have held that such, along with related rights, are within the meaning of “industrial and commercial property.”¹¹ TFEU Article 36 carves out this right in recognition that it exists on a national basis.¹² Copyright itself is territorial—a right to exclude unauthorized use predicated upon respect of several inherent rights begotten from creating an original work of authorship. However, greater recognition of the realities created by the ubiquitous nature of the Internet, along with the EU’s mission of “achieving undistorted competition in the Internal Market,” have made the need to unify national copyright enforcement protocol pressing.¹³

How copyrights are obtained in the EU

Copyrights are obtained, transferred, and terminated at the national level according to the protocols established by a right-holder’s respective Member State.¹⁴ The Court of Justice has stepped in to resolve disputes between right-holders and those who

¹⁰ *Id.* at 1.

¹¹ See *Stichting Brein v. Jack Frederik Wullems*, Case C-527/15, [2017], <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1549042466854&uri=CELEX:62015CJ0527>; This competence was also acknowledged as existing with the EU before the TFEU went into effect, as demonstrated in *Phil Collins v. Imtrat Handelsgesellschaft mbH, et. al.*, Joined Cases C-92/92 and C-326/92, [1993] E.C.R. I-05145 (Copyright and related rights fall, by reason in particular of their effects on intra-Community trade in goods and services, within the scope of application of the Treaty, within the meaning of the first paragraph of Article 7, ¶27.); See Also 1-EU International Copyright Law and Practice EU § 1 (2017).

¹² Consolidated Version of the Treaty on the Functioning of the European Union art. 36, 2016 O.J. C. 202, at 61 [hereinafter TFEU]; [Presentation] “EU Law and IPRs,” by David Opderbeck, Seton Hall University Law School, © 2018 David W. Opderbeck.

¹³ “EU Law and IPRs,” *supra* note 12.

¹⁴ LLOYD BONFIELD, *EUROPEAN UNION BUSINESS LAW: REPRESENTING CLIENTS DOING BUSINESS IN THE EUROPEAN UNION* 203 (West Academic Publishing, eds., 2018).

may have competing interests.¹⁵ The EU maintains explicit competence for intellectual property rights according to TFEU Article 118.¹⁶ In the last few decades, the EU has taken steps toward harmonization. Beginning with the Commission’s 1988 Green Paper on Copyright and the Challenge of Technology, it has been successful in setting minimum standards for copyright duration,¹⁷ rental and lending rights,¹⁸ and the facilitation of satellite and cable broadcasting.¹⁹

Licensing and Licensing Fees

Compensating authors and promoting future artistic and societal advancement is predominantly achieved by means of licensing the use of created content. Where responsibility for compensation ends and begins between platforms and authors saw new ground in 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 (“Information Society Directive”).²⁰ Informed by the World Intellectual Property Organization (“WIPO”) Copyright Treaty, this Information Society

¹⁵ See Criminal Proceedings Against Titus Alexander Jochen Donner, Case C-5/11, 2012, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62011CJ0005>; ACI Adam BV and Others v. Stichting de ThuisKopie, Case C-435/12, 2014, <http://curia.europa.eu/juris/document/document.jsf?jsessionid=640D82447AC89A4278A45D26B33D56CA?text=&docid=150786&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=9783689>; See Also ROGER J. GOEBEL ET AL., CASES AND MATERIALS ON EUROPEAN UNION LAW 725-726 (West Academic Publishing, eds., 4th ed. 2015).

¹⁶ See TFEU, *supra* note 12, art. 118, 2008 O.J. C. 115, at 96.

¹⁷ See Directive 2006/116/EC of the European Parliament and of the Council on the term of protection of copyright and certain related rights, 2006 O.J. L 372/12 (replacing Directive 93/98/EEC of the European Parliament and of the Council harmonising the term of protection of copyright and certain related rights, 1993 O.J. L 290/9.)

¹⁸ See Directive 2006/115/EC of the European Parliament and of the Council on rental right and lending right and on certain rights related to copyright in the field of intellectual property, 2006 O.J. L 376/28 [hereinafter “Lending Directive”].

¹⁹ Lending Directive, *supra* note 18, art. 7 at ¶2.

²⁰ Council Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society, 2001 O.J. L 167/10 [hereinafter “Information Directive”].

Directive differentiated between reproduction rights held by authors and a right to make a work available to the public. Under Articles 5(2) and 5(3), Member States may prescribe exceptions to the Article 2 reproduction right and the right of reproduction to the public; however, all EU Member States are parties to the Berne Convention for the Protection of Literary and Artistic Works.²¹ Therefore, exceptions may only be applied where no conflicts arise from normal exploitation of the work and where no unreasonable prejudice to legitimate interests is caused to the author.

Importantly for authors, Directive 2001/84²² harmonized rules on the resale right of authors for original art works, defining such qualifying works and creating a sliding scale for compensation.²³

EU actions on copyrights

In recent years, the EU has more aptly recognized a need to address issues of remuneration, accessibility, and disorganized outcomes across the Member States. This includes a need to address a growing disparity in the value enjoyed by different parties in the “value chain.”²⁴ Directives were passed that created explicit copyright protections for original computer programs²⁵ and database owners, debate much debate remaining over what constitutes a truly equitable distribution.²⁶

²¹ QUINTEN R. KROES, *E-BUSINESS LAW OF THE EUROPEAN UNION*, (Wolters Kluwer 2d ed.)

²² Directive 2001/84/EC of the European Parliament and of the Council on the resale right for the benefit of the author of an original work of art, 2001 O.J. L 272/32 (Sept. 21, 2001).

²³ *E-BUSINESS*, *supra* note 21, at 766.

²⁴ Commission Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Promoting a Fair, Efficient and Competitive European Copyright-based Economy in the Digital Single Market, 2016 O.J. C 592.

²⁵ Directive 91/250/EEC, O.J. L 122/9 (May 14, 1991) [Replaced by Directive 2009/24/EC, O.J. L 111/16 (Apr. 23, 2009)].

²⁶ Directive 96/9/EC of the European Parliament and of the Council on the legal protection of databases, 1996 O.J. L 77/20 (Mar. 27, 1996).

On December 9, 2015, the European Commission unveiled its ambitious new “Digital Single Market Strategy,” which included plans to modernize the EU’s copyright rules.²⁷ The communication explained:

People expect access to digital content anywhere, anytime and from any device across Europe. EU copyright rules need to be adapted so that all market players and citizens can seize the opportunities of this new environment. A more European framework is needed to overcome fragmentation and frictions within a functioning single market. Creative works need a well functioning market place, where rightholders can license and be paid for the use of their content, including content distributed online.²⁸ [sic]

A distant, but long-term goal of a full harmonization of EU copyright law was also made known. Over the next six months, the Commission and an expert team undertook research into several copyright-focused areas to determine: 1) if authors were receiving fair remuneration; 2) if a response at the EU level was needed to address news aggregators; 3) what duties should be required of platforms; and 4) if current rights were appropriate given recent digital changes.²⁹

Their results helped lead to a new proposal, announced September 14, 2016 at the EU Commission’s annual State of the Union address. In pursuit of facilitating access to content online, the Commission sought now to focus more on user-generated content platforms, their remuneration structures for user contributors, and their management of illegal or infringing content.³⁰

Over a year later, published in the Official Journal on September 20, 2017 and entered into application on October 12, 2018, the Commission created a Directive and

²⁷ Commission Press Release, IP/15/6261 (Dec. 9, 2015).

²⁸ *Id.*

²⁹ *Id.*

³⁰ Richard Smirke, *President Calls Out YouTube, Presents Copyright Reforms in State of the Union*, BILLBOARD (September 14, 2016), <https://www.billboard.com/articles/business/7510296/european-commission-state-of-union-jean-claude-juncker-safe-harbor-youtube-copyright-reform>.

Regulation to implement the Marrakesh Treaty into EU law.³¹ The legislation calls for a mandatory exception to copyright and related rights in the cross-border exchange of accessible format copies of certain works and subject matter that are ordinarily protected when such is done “for the benefit of persons who are blind, visually-impaired, or otherwise print-disabled.”³² Validated by the Court of Justice earlier that year, the Marrakesh Treaty’s passage by the EU marked an important step in further asserting the EU’s exclusive competence in legislation that may affect its copyright directive.³³ Subsequently, the EU Parliament and Council adopted Regulation 2017/1128 on cross border portability of online content services in the internal market.³⁴ The Regulation, which came into force on March 20, 2018, allows for the seamless access of online content services across EU Member States. Online content service providers must now allow their paid subscribers who are temporarily present in a Member State the same access and use as they would enjoy if in their Member State of residence.³⁵

III. The EU Copyright Directive

a. Development and Passage

³¹ See Press Release, World Intellectual Property Organization, European Union Joins WIPO’s Marrakesh Treaty (Oct. 1, 2018), <https://ec.europa.eu/digital-single-market/en/news/european-union-joins-marrakesh-treaty>. (The Treaty facilitates access to print works in formats adapted for persons who are blind, visually impaired or otherwise print disabled.)

³² See Council Regulation 2017/1563 of the European Parliament and of the Council on the cross-border exchange between the Union and third countries of accessible format copies of certain works and other subject matter protected by copyright and related rights for the benefit of persons who are blind, visually impaired or otherwise print-disabled, 2017 O.J. L 242/1; See Directive 2017/1564 of the European Parliament and of the Council of 13 September 2017 on certain permitted uses of certain works and other subject matter protected by copyright and related rights for the benefit of persons who are blind, visually impaired or otherwise print-disabled and amending Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society, 2017 O.J. L 242/6, (Sept. 13, 2017).

³³ See Opinion pursuant to Article 218(11) TFEU, Case T-3/15, E.C.R. I-114 (Delivered Feb. 14, 2017).

³⁴ Council Regulation No. 2017/1128 on Cross-border Portability of Online Content Services in the Internal Market, 2018 O.J. L 168/1.

³⁵ *Id.*

Amidst these legislative successes remained an unrelenting truth: as the EU continued to gain ground in the fight for access and individual rights, so too did these tech giants continue to gain extraordinary profits. These leading edge companies and all those who rely heavily on user-generated contributions were only growing in membership, usage, and ad-generated income. For fiscal year 2017, Facebook recorded profits of \$40.6 billion, Alphabet (Google’s parent company) reported revenues of \$110.8 billion, and Apple reported \$228.5 billion.³⁶ Story after story of astronomic quarterly earnings only served to stroke the fires for disgruntled authors across the EU.

The new EU Copyright Directive, which passed by EU Parliamentary vote in September 2018, centered on three main goals: 1) improving cross-border access for citizens to copyright-protected content online; 2) creating wider opportunities to use copyrighted material for education, research, cultural heritage and disability (through so-called "exceptions"); and 3) establishing clearer rules of the game for a functioning copyright marketplace, which stimulates creation of high-quality content.³⁷ While it outlines several novel approaches to digital media—such as new criteria for text and data mining programs as well as sports leagues’ exclusive rights over footage of games—Articles 11 and 13 have received the most attention. Article 11 deals with a proposed “link tax,” to be paid by platforms to the authors who provide links to author-owned

³⁶ John Callaham, *Alphabet records \$110 billion in revenue for 2017, Google’s annual hardware sales doubled*, ANDROID AUTHORITY (Feb. 1, 2018), <https://www.androidauthority.com/alphabet-q4-2017-earnings-834774/>; *See* Annual Financials for Apple, Inc., <https://www.marketwatch.com> (enter “AAPL” in “SEARCH” bar; then scroll down to “Overview” and select “Financials”); *See* Annual Financials for Facebook Inc., <https://www.marketwatch.com> (enter “FB” in “SEARCH” bar; then scroll down to “Overview” and select “Financials”).

³⁷ EU Copyright Directive, *supra* note 6, at preamble, sec. 3.

content.³⁸ Article 13 takes a decisive step toward determining who owes who in the multi-party process of getting new online content in front of audiences.

b. Article 13

The crux of the EU Copyright Directive and one of its greatest points of controversy is found in Article 13. As originally proposed, it included the following requirements:

Article 13 creates an obligation on information society service providers storing and giving access to large amounts of works and other subject-matter uploaded by their users to take appropriate and proportionate measures to ensure the functioning of agreements concluded with rightholders and to prevent the availability on their services of content identified by rightholders in cooperation with the service providers.³⁹

Amendments to the EU Copyright Directive have since been made to include a requirement that “online content sharing service providers” work to “conclude fair and appropriate licensing agreements with rightholders;⁴⁰ this includes being liable for their websites’ user uploaded content and being called to maintain “effective and expeditious complaints and redress mechanisms.”⁴¹ Many believe affected companies will need to create a new type of upload filter, an improvement to a component many such platforms already have.⁴² YouTube’s video upload platform already utilizes a database of known

³⁸ *Id.* at Art. 12.

³⁹ *Id.* at Sec. 5.

⁴⁰ See Amendments adopted by the European Parliament on 12 September 2018 on the proposal for a directive of the European Parliament and of the Council on copyright in the Digital Single Market (COM(2016)0593 – C8-0383/2016 – 2016/0280(COD)), 2018 TA-PROV 337, Sec. 13(a), <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2018-0337+0+DOC+PDF+V0//EN>.

⁴¹ *Id.* at 13(b).

⁴² Mark Bergen, *Google Plans to Vet YouTube Premium Video Content*, BLOOMBERG (Jan. 11, 2018), <https://www.bloomberg.com/news/articles/2018-01-11/google-is-said-to-plan-vetting-of-youtube-premium-video-content>; Elliot Harmon, *Why Is Facebook Inspecting Your Private Videos?* Electronic Frontier Foundation (Nov. 17, 2015), <https://www.eff.org/deeplinks/2015/11/why-facebook-inspecting-your-private-videos>.

copyrights to flag videos that contain registered songs or footage. However, the Directive will require YouTube and others to double down on their content filtering measures, and could lead to sanctions along the lines of the General Data Protection Regulation (“GDPR”), which passed in May 2018.⁴³

The EU Copyright Directive comes at a time when society as a whole has warmed to the concept of “YouTube celebrities”, online-exclusive premium content, and “Instagram famous” individuals. Indeed, content producers whose videos, articles, or pictures appear on the landing page of a platform like YouTube are able to deliver consistent content to global audiences at an unprecedented level.⁴⁴

Some creators are unable to maintain a grip on what constitutes morally and politically acceptable conduct,⁴⁵ while others are simply becoming burnt out from a desire to keep up appearances and deliver consistently click-worthy content.⁴⁶ The only limit to these creators’ ability to publish videos is their own resources and mental bandwidth. Yet at the same time, these platforms that host the content enjoy continual ad revenue gained for every view or click as well as added affinity for their own brand and platform.

⁴³ Council Regulation No. 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), 2016 O.J. L 119/1.

⁴⁴ See Internet World Statistics, Internet Usage Statistics (June 2018), <https://www.internetworldstats.com/stats.htm> (As of June 2018, 55.1% of the world's population has Internet access); Ben Gilbert, *YouTube now has over 1.8 billion users every month, within spitting distance of Facebook's 2 billion*, BUSINESS INSIDER (May 4, 2018), <https://www.businessinsider.com/youtube-user-statistics-2018-5>.

⁴⁵ Sami Main, *PewDiePie and the Potential Dangers of Social Influencer Marketing for Brands*, ADWEEK (Feb. 14, 2017), <https://www.adweek.com/digital/pewdiepies-downfall-shows-the-potential-dangers-of-social-influencer-marketing-for-brands/> (former YouTube star Felix Arvid Ulf Kjellberg, known online as “PewDiePie” and famous for his highly-watched videogame commentator video blogs, received tremendous criticism and the loss of Disney and YouTube sponsorships after a video and accompanying Wall Street Journal story revealed several instances of his making Anti-Semitic comments.)

⁴⁶ Eli Glasner, *‘You feel like you're drowning’: Why YouTube content creators are burning out*, CBC (Oct. 20, 2018), <https://www.cbc.ca/news/entertainment/youtube-stars-burnout-1.4868500>.

c. *Anticipated Responses*

As Member States await the finalized version of the Directive, both sides continue to debate the merits.⁴⁷ Those critical of a full adoption of the Directive claim it will hinder the Internet’s development. They believe upload filters and this new imposed level of compliance will adversely impact other less profitable websites as well as hamper the refinement of larger platforms. “Such a mechanism would be ripe for abuse by copyright trolls and would make millions of mistakes,” claims one critic.⁴⁸ “The technology simply doesn’t exist to scan the Internet’s content in this way.”⁴⁹

Understandably, many of these same platforms oppose the Directive and warn of a slippery slope towards destroying the laissez-faire nature of the Internet that much of the world currently enjoys. “This [Article 13] legislation poses a threat to both your livelihood and your ability to share your voice with the world,” wrote YouTube CEO Susan Wojcicki in an October 2018 blog post.⁵⁰ She continued:

[I]f implemented as proposed, Article 13 threatens hundreds of thousands of jobs, European creators, businesses, artists and everyone they employ. The proposal could force platforms like YouTube to maintain guidelines for uploading content that are so strict, they ultimately allow content from only a small number of large companies with the resources to comply.⁵¹

⁴⁷ Matt Reynolds, *What is Article 13? The EU’s divisive new copyright plan explained*, WIRED, (Nov. 13, 2018), <https://www.wired.co.uk/article/what-is-article-13-article-11-european-directive-on-copyright-explained-meme-ban> (Internet bodies such as the Society of Authors, music/media organizations like Universal Music Group, and artists like Sir Paul McCartney have publically declared they are for the Directive; those critical of the Directive include Silicon Valley lobbying group CCIA and executives at companies likely to be impacted, such as YouTube, Wikipedia, and GitHub.)

⁴⁸ James Vincent, *Everything You Need to Know About Europe’s New Copyright Directive*, THE VERGE (Sept. 13, 2018), <https://www.theverge.com/2018/9/13/17854158/eu-copyright-directive-article-13-11-internet-censorship-google>.

⁴⁹ *Id.*

⁵⁰ Susan Wojcicki, *A Final Update on Our Priorities for 2018*, YouTube Creator Blog, (Oct. 22, 2018), <https://youtube-creators.googleblog.com/2018/10/a-final-update-on-our-priorities-for.html> [hereinafter “YouTube CEO Blog”]; Todd Spangler, *YouTube CEO Calls on Creators to Rally Against EU Copyright Legislation*, VARIETY (Oct. 22, 2018), <https://variety.com/2018/digital/news/youtube-ceo-creators-oppose-eu-copyright-1202988164/>.

⁵¹ YouTube CEO Blog, *supra* note 50.

Anti-regulation activists and champions of a free Internet have strenuously voiced their disapproval, along with those of the view that the legislation is over-inclusive.

Conversely, proponents of the Directive recognize a need for these platforms to fairly compensate authors and no longer rest their hat on a notion that exposure will beget ancillary profits for authors.⁵² A digital landscape of countless bytes of content combined with shortened attention spans and pervasive advertisements have made that argument a forsaken one.

No matter the result, change is certain to occur in one form or another. And even if the Proposed Directive is made benign through hampering amendments and national backlash, the status quo cannot remain; an age of advancement, for which we are in, must inherently advance. No change will be greater than the mainstream adoption of artificial intelligence (“AI”) and AI as a Service (“AIaaS”). Current forecasts expect the AI sector to grow at explosive rates.⁵³ Internationally-recognized consultancy firm McKinsey & Company posits that AI has the potential to create upwards of \$3.5 trillion in value across

⁵² Colin Stutz, *IFPI Refutes Claim YouTube Paid Music Industry \$1.8B, Says Figures ‘Don’t Match Our Own,’* BILLBOARD (Nov. 16, 2018), <https://www.billboard.com/articles/business/streaming/8485351/ifpi-youtube-refute-claim-music-industry-payout>.

⁵³ Current valuations of growth for the global AI sector range from \$9.5bn to \$191bn USD within the next 7 years. While a consistent factor of growth is difficult to agree upon, a significant increase in the next decade remains the conventional consensus; *See* David Schubmehl and Carrie Solinger, *Worldwide Cognitive/Artificial Intelligence Software Platforms Forecast, 2018–2022*, INTERNATIONAL DATA CORPORATION (June 2018), Market Forecast, Doc # US44015018 (IDC forecasts the overall market to grow significantly through 2022, approaching \$9.5 billion in revenue, at a CAGR of 36.7%); *Artificial Intelligence Market By Technology (Machine learning, Natural language processing, Image processing, Speech recognition); By End-User (Media & advertising, BFSI, IT & telecom, Retail, Healthcare, Automotive & transportation) and by Regional Analysis - Global Forecast by 2017 – 2024*, May 2018, TMAIM518 (AI market expected to exceed more than \$191bn USD by 2024 at a CAGR of 37% in the given forecast period.); *See Also* Press Release, *Artificial Intelligence As A Service (AIaaS) Market Analysis by Top Key Players – Alphabet Inc. (Google Inc.), Apple Inc., Amazon Inc., IBM Corporation, CognitiveScale, Inc.,* BIG MARKET RESEARCH (Nov. 26, 2018), <https://www.openpr.com/news/1399776/Artificial-Intelligence-As-A-Service-AIaaS-Market-Analysis-by-Top-Key-Players-Alphabet-Inc-Google-Inc-Apple-Inc-Amazon-Inc-IBM-Corporation-CognitiveScale-Inc.html>.

nine business functions in 19 industries, including telecom, media and high tech.⁵⁴ As I will demonstrate, the next logical step of addressing complex regulatory demands placed on platforms driven by user-content submissions will be through this next level of AI adoption.

IV. Artificial Intelligence

It is important to first understand how the industry defines AI and the current state of the AI industry before one can best recognize where the industry is heading and how AI can be a solution for addressing Article 13's new requirements. As such, I will define how AI is to be understood for the purposes of this discussion as well as define related industry terms before discussing the sector's current status and the EU's involvement in the sector.

a. AI Defined

The concept of artificial intelligence has evolved over the years given its inherent relationship to our understanding of what "intelligence" means for human beings.⁵⁵ As such, there are a number of conceptual limitations that make a uniform definition difficult to prescribe.⁵⁶ Importantly, the terms "machine learning" and "automation," while related, are not synonymous to artificial intelligence. Machine learning can be recognized as referring "to the ability of a computer to learn from a data set without relying only on a

⁵⁴ Michael Chui, et al., *Notes from the AI frontier: Applications and value of deep learning*, MCKINSEY GLOBAL INSTITUTE (Apr. 2018), at Sec. 2.

⁵⁵ Matthew U. Scherer, *Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies*, 29 Harv. J. Law & Tec 353 (2016), at 358.

⁵⁶ *Id.* at 359-62.

set of pre-existing rules.”⁵⁷ In a similar manner, an “algorithm” must not be mistaken as synonymous with artificial intelligence either.

An entity is "algorithmic" if an algorithm controls it. An algorithm is a set of decision-making rules. The relevant algorithms run on computers. They are programs - artificial intelligences - that make and execute decisions in response to external circumstances. Algorithms are not entities; they are property.⁵⁸

For our purposes, “Artificial intelligence” can be understood as a computer program that has the ability to acquire and autonomously apply knowledge and skills.⁵⁹ Such can also be understood to fall within the EU’s definition of “content recognition technologies.”⁶⁰

b. Current State of AI

Only in the last decade has legitimate consideration for AI come about in scientific, and in turn, business communities, largely thanks to highly publicized innovations like IBM’s Watson beating the world champion in *Jeopardy* and Apple’s Siri becoming an integral part of pop culture.⁶¹ In the 1980s, the nascent AI sector was fueled by a series of breakthroughs—a self-driving car and software that could interpret human handwriting among them—before petering out of vogue.⁶² The top computing power of the times was not yet enough to facilitate the demands of a learning machine.⁶³ It took the

⁵⁷ *Gill v. Whitford*, 138 S. Ct. 1916, 201 (2018).

⁵⁸ Lynn M. Lopucki, *Algorithmic Entities*, 95 Wash. U. L. Rev. 887, 897 (2018).

⁵⁹ *Id.*; See Also Karen Hao, *Is this AI? We drew a flowchart to work it out*, TECHNOLOGY REVIEW (Nov. 10, 2018), <https://www.technologyreview.com/s/612404/is-this-ai-we-drew-you-a-flowchart-to-work-it-out/> (“Artificial Intelligence,” broadly defined, refers to machines that can learn, reason, and act for themselves when faced with new situations, in the same way as humans and animals.)

⁶⁰ EU Copyright Directive *supra* note 6, at Preamble, sec. 39.

⁶¹ Much of the renewed interest in AI can be attributed to breakthroughs in deep learning, which have spurred interest in other modern AI applications. Ben Lorica, *The state of AI adoption*, O’REILLY (Dec. 18, 2017), <https://www.oreilly.com/ideas/the-state-of-ai-adoption>.

⁶² *The Current State and Future of Artificial Intelligence | A Documentary by Ashlee Vance* [Video File], FutureWise (Jun. 6, 2018), Retrieved from <https://www.youtube.com/watch?v=xhkG4VqyUUA>.

⁶³ *Id.*

work of pioneers like Dr. Jeffrey Hinton of the University of Toronto to propel the sector forward through the 90s and early 2000s.⁶⁴

Now, AI is hiding behind many of today's most convenient software-based solutions. Google Translate uses AI-based translations to allow a user to understand languages anywhere they can get an Internet-connection; likewise, users can download an offline version that works with 59 different languages.⁶⁵ Amazon's Alexa uses a conversational AI to perform functions like reporting the weather, making an online purchase, streaming online music, and setting a calendar reminder.

Companies like Kindred.AI, as well as Amazon, are already employing robots armed with AI to replace portions of their warehouse workforce.⁶⁶

c. EU's Approach to AI

In response to the growing demand for an AI-action plan, the Commission announced in April 2018 a three-pronged governmental strategy focused on (1) increasing investments in AI in both public and private settings; (2) preparing for the impending socio-economic realities cause by AI; and (3) ensuring that an appropriate and ethical framework exists.⁶⁷ The Commission's efforts will take the form of several different new ventures and organizations, including:

⁶⁴ *Id.*

⁶⁵ Shannon Liao, *Google Translate is rolling out offline AI-based translations that you can download*, THE VERGE (Jun. 12, 2018), <https://www.theverge.com/2018/6/12/17453950/google-translate-offline-translations-downloads-ai>.

⁶⁶ Jennifer Smith, *From Reindeer to Robots, Automation Set to Deliver This Holiday Season*, WALL ST. J. (Oct. 3, 2018), <https://www.wsj.com/articles/from-reindeer-to-robots-automation-set-to-deliver-this-holiday-season-1538569800>; *See Also* James Vincent, *Welcome to the Automated Warehouse of the Future*, THE VERGE (May 8, 2018), <https://www.theverge.com/2018/5/8/17331250/automated-warehouses-jobs-ocado-andover-amazon>; Kindred AI, <https://www.kindred.ai/technology/> (last visited Dec. 4, 2018).

⁶⁷ European Commission, *A European approach on Artificial Intelligence*, April 2018 MEMO 18/3363, (available at http://europa.eu/rapid/press-release_MEMO-18-3363_en.htm).

- A **European Innovation Council pilot**, a means by which the Commission will support research and bring innovations to market.
- Creating an “**AI-on-demand platform**” that gives advice and access to a toolbox of the latest algorithms and expertise for developers.
- **European Fund for Strategic Investments (EFSI)**, a fund that will support development and uptake of AI.
- **VentureEU**, a €2.1 billion Pan-European venture capital fund-of-funds program designed to boost start-up investment.
- Creating several **Digital Innovation Hubs**, regional centers partially funded by the EU that will offer resources to promote local adoption of AI.
- **European Structural and Investment Funds** to help support skills development as part of its \$27bn euro investment for the period 2014-2020.
- An **Algorithmic Awareness Building Project** focused on demystifying the conventional “black box” approach to AI algorithm creation and use.⁶⁸

Additionally, AI ethics guidelines will be developed on the basis of the EU’s Charter of Fundamental Rights, following a large consultation of stakeholders within the AI Alliance. “Given the scale of the challenge associated with AI, the full participation of all actors including businesses, academics, consumer organisations, trade unions, policy makers and representatives of civil society is essential.”⁶⁹

At the 2018 Financial Times-European Telecommunications Network Operator’s Association Summit (“FT-ETNO Summit”) on “Strengthening Europe’s Digital

⁶⁸ *Id.*

⁶⁹ *Id.*

Leadership,” European Commissioner in charge of Digital Economy and Society Mariya Gabriel was clear: “...The EU needs clearly to intensify its efforts on artificial intelligence, a domain where we are still lagging behind as compared with China and the US.”⁷⁰

And the EU science community itself is taking action. The self-declared “G6,” a “small, informal group” of Europe’s six major science organizations announced their joining forces to promote funding for higher quality research and collaborate more on research into AI and emerging fields.⁷¹ They include: (1) Germany’s Max Plank Society; (2) France’s National Centre for Scientific Research; (3) Germany’s Leibniz Association; (4) Germany’s Helmholtz Association; (5) Italy’s National Research Council [CNR]; and (6) Spain’s Council for Scientific Research [CSIC].⁷² These six organizations collectively employ more than 50,000 scientists and deliver a large share of the world’s top-cited research.⁷³ The alliance’s intention is to keep Europe’s scientific advancements competitive and unified.⁷⁴ A strong unified effort will be vital. As European Commission Vice President for the digital single market Andrus Ansip stated, “This [AI investment and research] should be a Pan-European project, not a series of national initiatives that may or may not overlap.”⁷⁵

⁷⁰ Opening remarks by Commissioner Gabriel at the FT-ETNO Summit 2018, *Strengthening Europe's Digital leadership*, SPEECH/18/6126, Brussels (Oct. 15, 2018) (available at http://europa.eu/rapid/press-release_SPEECH-18-6126_en.htm).

⁷¹ Richard Hudson, *Six EU science bosses join forces to push for more EU funding for 'excellent' science*, SCIENCE BUSINESS, (Oct. 18, 2018), <https://sciencebusiness.net/news/six-eu-science-bosses-join-forces-push-more-eu-funding-excellent-science>.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ Editorial, *Five Voices on Artificial Intelligence*, N.Y. TIMES, Oct. 19, 2018 at B2.

With so much momentum in the AI sector, and with an abundance of AI-focused monies in play, it is reasonable to believe that now is the most opportune time to develop and enlist this type of tech to meet the demands of Article 13.

V. AI as the Answer

a. *AI-Based Data Filters*

With billions of terabytes worth of content being uploaded each year to the FAANG (Facebook, Apple, Amazon, Netflix, Google) websites and related entities, effectively monitoring content by current means is no longer feasible. The human content moderator workforce required for these companies requires thousands of workers, experiences high turnover, and is mentally taxing to say the least.⁷⁶ The traditional data filtering software—used to initially scan for, flag, and in certain instances remove content deemed offensive or questionable—cannot keep up with the demands of inventive offenders and ever-complex infractions, many involving bias, illicit content, geo-political

⁷⁶ See Lauren Weber & Deepa Seetharaman, “*The Worst Job in Technology: Staring at Human Depravity to Keep It Off Facebook*,” WALL ST. J. (Dec. 27, 2017), <https://www.wsj.com/articles/the-worst-job-in-technology-staring-at-human-depravity-to-keep-it-off-facebook-1514398398>; See Also Sam Levin, “*Moderators who had to view child abuse content sue Microsoft, claiming PTSD*,” THE GUARDIAN (Jan. 11, 2017), <https://www.theguardian.com/technology/2017/jan/11/microsoft-employees-child-abuse-lawsuit-ptsd>.

hostilities, and free speech issues.⁷⁷ Moreover, the inherent nature of addressing copyright infringement makes taking proactive measures nigh impossible.⁷⁸

Where traditional data filtering strategies require repeated cycles of human intervention via updates to the criteria of what is intended as offensive or inaccurate, AI could be used to enable these data filters through machine-learning, reduced oversight, and vastly improved response time.

A perfect example comes from Facebook, which is already using several different AI and machine learning-based programs in different capacities of its content filtering stratagem.⁷⁹ The social network currently uses “Deep Text,” an AI-based filter trained to recognize instances of cyberbullying in comments, photos, and live videos posted to Instagram (a separate social network owned by Facebook.)⁸⁰ In September 2018, Facebook also announced its planned use of “Rosetta,” an artificial intelligence built in-house to scan, catalogue, and make images containing text searchable at a rate of over 1 billion images per day.⁸¹

⁷⁷ See Sapna Maheshwari, “*On YouTube Kids, Startling Videos Slip Past Filters*,” N.Y. TIMES (Nov. 4, 2017), <https://www.nytimes.com/2017/11/04/business/media/youtube-kids-paw-patrol.html>; Zia Zaidi, *Tumblr No Longer Available on App Store After Child Pornography Scandal*, DIGITAL INFORMATION WORLD (Nov. 20, 2018), <https://www.digitalinformationworld.com/2018/11/the-reason-tumblr-vanished-from-the-app-store-child-sexual-exploitation-and-abuse.html>; Euan McKirdy, *Facebook: We didn’t do enough to prevent Myanmar violence*, CNN (Nov. 6, 2018), <https://www.cnn.com/2018/11/06/tech/facebook-myanmar-report/index.html>; See Also, Rebecca Hersher, *What Happened When Dylann Roof Asked Google For Information About Race?*, NATIONAL PUBLIC RADIO (Jan 10, 2017), <https://www.npr.org/sections/thetwo-way/2017/01/10/508363607/what-happened-when-dylann-roof-asked-google-for-information-about-race>.

⁷⁸ *How Google Fights Piracy*, Google eReader, Nov. 2018, at 50, (“Proactively filtering the internet for copyright-infringing works would also open Search up to unprecedented abuse.”)

⁷⁹ Simon Chandler, *Instagram update adds BULLYING filter to stop mean photos, videos and captions*, THE SUN (Oct. 2018), <https://www.thesun.co.uk/tech/7452409/instagram-update-adds-bullying-filter-to-stop-mean-photos-videos-and-captions/>.

⁸⁰ *Id.*

⁸¹ Maria Deutscher, *Facebook has built an AI called Rosetta to analyze 1B+ user images a day*, SILICON ANGLE (Sep. 11, 2018), <https://siliconangle.com/2018/09/11/facebook-built-ai-called-rosetta-analyze-1b-user-images-day/>.

Similarly, many of Google’s underlying functionality is performed or supported by AI.⁸² From simple searches to personalizing a user’s News feed, AI is used to improve Google’s services for users;⁸³ thus, AI should be able to improve Google’s responsibilities to authors whose content they host.

Such will not come at a moment too soon. At the same time that these positive innovations are gathering momentum, so too is the development of filter-beating programs—able to create “Deepfake” content that’s designed to be nigh uncatchable to the untrained viewer.⁸⁴ The AI-driven solutions to countering fake content such as this will also require a reporting mechanism to comply with Article 13’s duty to report on the “functioning and the deployment of the measures.”⁸⁵

Opponents of Article 13 argue that the legislation will have an unintended effect on smaller platforms and hosts of authored content; others point out the current shortcomings of filtering software and an inherent inability to detect fair use. With regards to the former, leading companies and the developer community are working in concert to make many innovations on the AI front publically accessible through open application program interfaces (“APIs”). IBM for example has made its Bluemix platform⁸⁶ available to the developer community in the hopes of promoting innovation;

⁸² Kyle Wiggers, *Google uses AI to make AMP Stories, Google Images and video search better*, VENTUREBEAT (Sep. 24, 2018), <https://venturebeat.com/2018/09/24/google-uses-ai-to-make-amp-stories-google-images-and-video-search-better/>.

⁸³ *Id.*

⁸⁴ Hilke Schellmann, *Deepfake Videos Are Getting Real and That’s a Problem*, WALL ST. J. (Oct. 15, 2018), <https://www.wsj.com/video/series/moving-upstream/deepfake-videos-are-getting-real-and-that-a-problem/0C3815FB-82C7-4805-B902-31BEB0B4F146?mod=e2fb>.

⁸⁵ EU Copyright Directive, *supra* note 7, art 13, sec. 1.

⁸⁶ Bluemix is a Platform-as-a-Service offering from IBM that is based on open standards and the cloud. It allows developers to build, manage and share multi-channel applications. Shamim Hossain, *What is IBM Bluemix?* IBM (Apr. 2014), <https://www.ibm.com/blogs/cloud-computing/2014/04/21/ibm-codename-bluemix/>.

this platform allows web developers to create and share cloud-based applications for business.⁸⁷ As a provider of enterprise-level tech solutions, “Big Blue” is uniquely positioned to be one of several major players that could develop an industry standard for meeting Article 13 demands. The Directive’s passage would likely trigger an added influx of Software As A Service (“SaaS”) solutions from the global developer community.

With regards to issues of Fair Use, the challenge is much greater. Article 13 opponents fear that filtering software would operate blindly, denying uploads of content simply because it includes a fragment of an already-registered copyright.⁸⁸ Moreover, current filters cannot recognize content protected by existing copyright exceptions, such as parody.⁸⁹ Quite ironically, the limitations of current machine learning software in detecting copyright exceptions will likely only be overcome through a greater inclusion of copyright-protected works via a Fair Use exception.⁹⁰

These current limitations, however, should not be viewed as a death sentence but instead as a doorway toward a new level of advancement. Indeed, the current processing power of the world’s most advanced computers continues to reach astronomic heights.⁹¹ There remains no cap on the practical applications of AI-based tech.

⁸⁷ JanaKiram MSV, *IBM Wants To Make Artificial Intelligence Fair and Transparent With AI OpenScale*, FORBES (Oct. 21, 2018), <https://www.forbes.com/sites/janakirammsv/2018/10/21/ibm-wants-to-make-artificial-intelligence-fair-and-transparent-with-ai-openscale/#603bdb791251>.

⁸⁸ Timothy Vollmer, *Copyright Filtering Mechanisms Don’t (and can’t) Respect Fair Use*, CREATIVE COMMONS (Feb. 22, 2017), <https://creativecommons.org/2017/02/22/copyright-filtering-mechanisms-dont-respect-fair-use/>.

⁸⁹ *Id.*

⁹⁰ New and valuable uses of copyrighted works often take place without rights holders’ explicit authorization, and, for this reason, depend on exceptions and limitations to copyright law. The most prominent of these limitations is the fair use doctrine, and many prominent technologies owe their existence to a successful fair use defense. Benjamin L.W. Sobel, *Artificial Intelligence’s Fair Use Crisis*, 41 Colum. J.L. & Arts 45 (2017) at 49.

⁹¹ Engineers at the US Department of Energy’s Oak Ridge National Lab in Tennessee have created a supercomputer that, at peak performance, can perform at 200 petaflops—200 million billion calculations

b. Looking to the Future

As AI continues to become more widespread and available, its competency shows no signs of degrading. Experts, venture capitalists, and enthusiasts alike recognize the resources and cultural understanding needed for AGI (“artificial general intelligence”), a human-like level of AI, are beginning to materialize.⁹² In a 2016 survey conducted of one hundred seventy (170) tech industry experts, “the median expert expected human-level artificial intelligence by 2040.”⁹³ The decades to come will feature an intellectual arms race to that inevitable conclusion, funded by tech giants and riddled with far-reaching repercussions. Continued recognition for individual rights and adherence to the duties placed on these platforms will only grow in importance.

With any talk of AI, there naturally comes discussion of the potential for a dystopian future. “I tried to convince people to slow down, to slow down AI, to regulate AI,” said Elon Musk in an interview.⁹⁴ “This was futile. I tried for years. Nobody listened.” His concerns echo those of other leading minds in the science community like Bill Gates and the late Dr. Stephen Hawking, who caution that the quick rise to develop human-level AI will likely yield catastrophic consequences for humanity. “Success in creating effective AI, could be the biggest event in the history of our civilization. Or the

per second. See Martin Giles, *The world’s most powerful supercomputer is tailor made for the AI era*, THE MIT TECHNOLOGY REVIEW (Jun. 8, 2018), <https://www.technologyreview.com/s/611077/the-worlds-most-powerful-supercomputer-is-tailor-made-for-the-ai-era/>.

⁹² Matt Turck, *Frontier AI: How far are we from artificial ‘general’ intelligence, really?*, (Apr. 15, 2018), <http://mattturck.com/frontierai/>.

⁹³ Vincent C. Muller & Nick Bostrom, *Future Progress in Artificial Intelligence: A Survey of Expert Opinion*, in *Fundamental Issues of Artificial Intelligence 5* (Vincent C. Muller ed., 2016).

⁹⁴ *Elon Musk & Joe Rogan on Artificial Intelligence* [Video File], Elon Musk Viral Videos (Sep. 7, 2018), Retrieved from https://www.youtube.com/watch?v=oNas1VU_t5Y.

worst,” said Dr. Hawking in an interview.⁹⁵ “We just don't know. So we cannot know if we will be infinitely helped by AI, or ignored by it and side-lined, or conceivably destroyed by it.”⁹⁶

Whether it is two decades away or not, this age of technological development will mark the first time mankind will encounter a form with intelligence that matches his own. Dr. Richard Sutton, University of Alberta, is one of several leading AI researchers championing reinforcement learning as a key to achieving “singularity,” the moment when AI surpasses human intelligence.⁹⁷ He posits that the hardware necessary for achieving such will be available as early as 2030.⁹⁸ And yet, the moment will be fleeting, as AI will only continue in an upward trajectory.

Mankind’s continued advancement will be intertwined with a respectful use and appreciation of AI. Future folly, at an unprecedented level, will come from its neglect. Creating a framework for understanding and utilizing AI remains a prudent pursuit that will only grow in importance. As the EU proceeds to make substantial investments in the AI sector, and solve disparities in value, the next logical step seems to cry out for an AI-infused solution. Its utilization will unlock a new era of issues for legal minds to ponder. Should an AI-controlled application be considered autonomous? When does an AI reach the cognitive level necessary for citizenship? And what happens when an AI creates an original work fixed in a tangible medium?

⁹⁵ Arjun Kharpal, *Stephen Hawking says A.I. could be 'worst event in the history of our civilization'*, CNBC (Nov. 6, 2017), <https://www.cnbc.com/2017/11/06/stephen-hawking-ai-could-be-worst-event-in-civilization.html>.

⁹⁶ *Id.*

⁹⁷ *The Current State and Future of Artificial Intelligence / A Documentary by Ashlee Vance* [Video File], FutureWise, (Jun. 6, 2018), Retrieved from <https://www.youtube.com/watch?v=xhkG4VqyUUA>.

⁹⁸ *Id.*

VI. Conclusions

The demands of tomorrow cannot be met by the tactics of today. Given current growth rates and ambitions, our global community will only continue to adopt increasingly advanced technology. The wounds of impact from misuse—calculated or otherwise—will only grow deeper as tech giants become trillion-dollar juggernauts in charge of trillions more bytes of content.⁹⁹ Platforms will have to compete with new challenges, like AI-based programs such as MIT Media Lab’s “Deep Angel,” which can stealthily remove objects from photographs.¹⁰⁰ A next level of software will be necessary to address these increasingly greater infringement techniques and ensure that authors don’t lose their rights in the mix.

Ultimately, AI is coming in the very near future; the leaders of tomorrow—in business, government, and law, will need to dutifully prepare. They must deploy new proactive measures not just for the protection of individual right-holders, but for the prevention of systematic abuse of their platforms. AI will be the deciding factor, and its thoughtful use should be led by Europe in a concerted effort.

⁹⁹ David Streitfeld, *Amazon Hits \$1,000,000,000,000 in Value, Following Apple*, N.Y. TIMES (Sep. 4, 2018), <https://www.nytimes.com/2018/09/04/technology/amazon-stock-price-1-trillion-value.html>.

¹⁰⁰ *Deep Angel: The AI behind the aesthetics of absence*, MIT Media Lab, accessed on Oct. 21, 2018 at 03:39PM EST. <https://www.media.mit.edu/projects/deep-angel-ai/overview/>.