

Algorithmic Recommendation and Copyright Liability: A Comparative Study of Online Content-Sharing Platforms

Zhonghao Yao

*School of International Law, East China University of Political Science and Law, Shanghai, China
yaozhonghao65@gmail.com*

Abstract. Algorithms have been used to recommend content on many online platforms, and thus, questions of legal responsibility for copyright infringement have arisen. This paper investigates the legal system for algorithmic recommendation and copyright liability in China and the European Union, and uses Douyin and TikTok as case studies. Case analysis of the representative case *iQiyi v. ByteDance's* judgment, comparative legal research on the Digital Single Market Copyright Directive and Chinese statutory provisions, and doctrinal analysis of judicial reasoning in both jurisdictions are used to explore how algorithmic recommendation technology challenges the traditional safe harbor rule and modifies the platform liability system. Analysis shows that China has increased the scope of its "duty of care" gradually through judicial interpretations, and the European Union has moved towards direct liability for large online content-sharing platforms under Article 17 of the DSM Directive. Both areas have deviated from the traditional passive intermediary immunity, but the EU model places relatively high ex-ante obligations on platforms. The paper proposes that China introduce substantive algorithmic transparency obligations, build a tiered platform liability system, set out technological prevention standards, and strengthen cross-border cooperation in copyright governance in the conclusion.

Keywords: algorithmic recommendation, copyright infringement, TikTok, DSM Directive, safe harbor

1. Introduction

In August 2018, Beijing iQiyi Technology Co., Ltd. obtained the exclusive online distribution rights for the historical drama "Story of Yanxi Palace" and reached more than 15 billion views during the broadcast. In September 2018, Beijing ByteDance Technology Co., Ltd. released its Toutiao video platform and applied algorithm-based recommendation technology to distribute user-uploaded short clips from the drama. By March 2019, iQiyi had identified around 1,600 infringing clips on the platform, and the most popular single clip had exceeded 1.1 million views. On February 20, 2019, iQiyi filed a copyright infringement lawsuit against ByteDance in the Beijing Intellectual Property Court over its algorithmically recommended system. On August 19, 2019, the court issued its first-instance judgment and held that ByteDance's algorithm increased the efficiency and scope of infringement and was thus liable for contributory infringement with an elevated duty of care [1].

This first algorithmic recommendation copyright case in China pointed out a serious problem: platforms use algorithms to recommend content and earn money from this distribution, but the traditional safe harbour provisions were not intended for such active intermediaries [2].

ByteDance runs Douyin in China and TikTok abroad, and both use the same recommendation algorithm based on collaborative filtering and deep learning [3]. These Platforms have different systems of liability. China applies a higher duty of care based on fault-based principles derived from the Civil Code and judicial interpretations, and the European Union has introduced direct copyright liability for large online content-sharing platforms under Article 17 of the Digital Single Market Copyright Directive (DSM Directive) [4]. The two sides are not equal; therefore, it is unknown why the same technology has different legal consequences in different areas and which system can better protect copyrights while promoting technological progress.

2. Legal basis for platform copyright liability

To provide an overall framework for the comparison of the Chinese and EU approaches, the following will be introduced in this section: basic concepts and legal categories. Then it will be analyzed how each jurisdiction has addressed the problem of algorithmic recommendation, and what changes have occurred in the system of passive intermediary immunity. The three steps of this analysis are to introduce the general concept, detail the Chinese fault-based system, and present the EU's transition to direct liability.

2.1. Basic concepts and definitions: algorithmic recommendation and safe harbor

Algorithmic recommendation refers to an automated system that predicts and suggests content to users based on their behaviour data, such as collaborative filtering, content-based matching and hybrid models [3]. The safe harbour rule started as Section 512 of the US. Digital Millennium Copyright Act: Exempts passive intermediaries from liability for user-infringing content after promptly removing the material upon notification [2]. Lemley notes that the existing safe harbours are a confusing and illogical collection that arose haphazardly rather than by design, and there are considerable gaps in intermediary immunity and inconsistent incentives for different kinds of claims [5]. Duty of care refers to the standard of behaviour required to avoid liability for negligence, and direct liability arises from the primary infringement without the need to prove secondary fault [6]. The algorithmically recommended list is an active organisation and promotion of content that goes beyond passive hosting and thus challenges the basis of safe harbour immunity [7].

At the most basic level, an algorithmic recommendation system is not a passive storage service. Collaborative filtering learns user behaviour patterns to find similar users, and then recommends content that these users have enjoyed. Content-based matching extracts features from the items themselves, such as visual elements in videos, textual metadata or acoustic signatures in audio, and recommends items with similar features. Hybrid models are used to combine the above two ways and improve the index of interaction [3]. These systems run continuously and autonomously to make millions of ranking decisions per second without human intervention in individual cases. In short, the platform will no longer be a repository of user-discovery content but will instead create an organised information system that selects some materials to show users and leaves others hidden [7].

2.2. Jurisprudential basis in China: fault-based liability and heightened duty of care

According to Article 1197 of the Civil Code and Article 22 of the Regulations on the Protection of the Right of Communication through Information Networks, Chinese copyright law operates under a fault-based system of liability. The first *iQiyi v. ByteDance's* case showed that algorithmic recommendation systems increase the efficiency and scope of infringing dissemination, thus making platforms active participants rather than passive hosts [7]. Judge Xu's doctrinal analysis in *Zhengfa Luntan* (2024) further developed this idea by differentiating between pure algorithmic output, where platforms bear no general duty of care, and algorithmic traffic tilting, where platforms actively intervene in content distribution and thus bear a higher duty [7].

This system still operates on the fault basis, but the standard for negligence has been lowered by considering the platform's technology and the economic benefits of optimisation. The Beijing Intellectual Property Court found nine factors in the *iQiyi* case that supported a determination of should-have-known for ByteDance, including the drama's high popularity, *iQiyi's* multiple warning notices, the recognisable nature of professional audiovisual works, the scale of infringing uploads, and ByteDance's ability to establish technical filtering measures [1]. Notably, the court pointed out that ByteDance obtained significant advertising income from the increased user participation that infringing materials promoted and thus established a business link warranting closer examination. Therefore, the judicial approach is an incremental extension of the obligations of platforms under existing laws rather than a legislative reclassification of platforms [8].

2.3. Jurisprudential basis in the European Union: from safe harbour to direct liability

The EU's DSM Directive (2019/790) is a new model for deviating from the safe harbour system of the E-Commerce Directive (2000/31/EC). Article 17 holds the large online content-sharing service provider responsible for the organisation and promotion of content by means of algorithms [4]. Barrett believes that this provision does not fall under the safe harbour protection of the E-commerce Directive for online content-sharing service providers; rather, they will be held directly responsible for copyright-protected works posted by users because it constitutes an act of communication to the public [9]. The CJEU's judgment in the YouTube case (C-682/18 and C-683/18) indicated that platforms employing content-recognition and recommendation algorithms are no longer considered neutral intermediaries; as a result, the law has begun to change [10].

Article 17 of the law considers online content-sharing service providers to be communicating works to the public and is therefore primarily liable. Based on the above provisions, the platform should reasonably strive to obtain authorisation, refrain from uploading unauthorised works, and promptly delete such works upon receiving a notification. Article 17(4)-(6) provides for proportionality safeguards based on the maturity, scale and content volume of platforms, exempting platforms that have operated for less than three years, have an annual turnover of less than EUR 10 million and have fewer than 5 million monthly unique visitors [4]. The new model for the function of the platform is to become a more active content curator. Based on the legislative history, it can be seen that the European Parliament intended to address the value gap for platforms generating significant income from user-uploaded content and rights holders without effective monetization channels [11].

As shown in Leimo's case study of YouTube's Content ID, Article 17's best-efforts obligation has required the use of automated upload filters in practice, as no other means have been found to meet the demands of proactive review at scale. The CJEU in *Poland v. Parliament and Council* (C-401/19) recognized that these obligations *de facto* require automatic recognition and filtering tools, while

also stressing the need for strong safeguards to protect users' rights. Rosati believes that Article 17 is a rule of law, so it should be minimally amended by Member States; however, its application at the national level has been inconsistent [12].

3. Comparison of current legislation

Building upon the theoretical and doctrinal foundations laid out in the previous section, this part will present an organised comparison of the current legislative systems for platform liability in China and the European Union. Compare the legal system, judicial practice and actual implementation in all the above regions. First, it will be an analysis of China's fragmented statutory system and judicial expansion. Next, this paper will examine the EU's dual-layer accountability mechanism. Finally, based on the above, it will present an organised comparison.

3.1. Current legislation in China: fragmented statutes

The regulatory system in China includes the Copyright Law, the Regulations on the Protection of the Right of Communication through Information Networks, and the Interim Provisions on the Administration of Algorithmic Recommendation Services. Article 1197 of the Civil Code provides for joint tortfeasors based on fault. Article 22 of the Information Network Regulations provides five conditions for a safe harbour exemption, including no modification of the content and no direct economic benefit. The Judicial Interpretation on Information Network Dissemination lists the reasons for knowledge or should-have-known determinations [5].

The Algorithmic Recommendation Provisions (2022) have added transparency and filing obligations but have not addressed copyright liability directly. Article 16 stipulates that platforms should inform users of the general ideas, goals and primary modes of operation of recommendation algorithms; Article 17 requires platforms to provide a choice to disable personalised recommendations [9]. The above provisions focus on consumer protection and information disclosure but lack real accountability for rights holders. In practice, Chinese courts have progressively imposed higher duties on platforms: the iQiyi case held that ByteDance's algorithmically recommended works generated traffic and advertising income, thus falling under a higher-duty regime despite lacking direct content editing [5]. This judicial activism has compensated for the delay in legislation but has also created uncertainty over the specific scope of platform obligations.

3.2. Current legislation in the European Union: a dual-layer accountability system

Article 17 of the DSM Directive sets out a three-tiered obligation system for online content-sharing service providers: (1) best endeavours to obtain authorisation; (2) best endeavours to prevent the availability of unauthorised content through proactive measures; and (3) expeditious removal upon notification and best endeavours to prevent future uploads [6]. The Digital Services Act (2022/2065) will also add requirements for algorithmic transparency, systemic risk assessment and access to platform data in this system. Article 27 of the DSA requires large online platforms to keep publicly available repositories of information on their recommender systems, including the criteria for ranking content and choices available to users to modify or influence these criteria [10].

The DSA should provide an easy-to-understand explanation of the recommendation parameters and enable copyright holders to determine whether algorithmic promotion constitutes active content organisation [10]. The two-tier regulatory system under the DSM Directive for copyright-related obligations and the horizontal transparency obligations of the DSA establish a full-coverage

accountability system in China. The European Commission has issued delegated acts and guidelines to specify the technical standards for content recognition technologies and complaint handling procedures in further detail [11].

According to the study by Leimo of YouTube's Content ID, these obligations have not effectively protected users' rights in practice. Content ID managed 99.6% of copyright claims on YouTube in 2024, but the system was overly restrictive, lacked reasonable human review, and favoured filtering over protection of users' rights [12]. Barrett also mentions CJEU case law in *Scarlet v. SABAM* and *SABAM v. Netlog* determined that blocking measures should be highly specific to avoid suppressing legal content unnecessarily, and users must have standing to challenge the filtering measures in national courts [13]. Although these judicial safeguards are necessary, Article 17 leaves the specific means of compliance to the discretion of platforms and thus fails to achieve the legislative goals.

3.3. Comparison: incrementalism vs. direct liability

From the above comparisons, China has kept the fault principle and been gradually increasing liability, while the EU has completely dropped safe harbour for large platforms. Both jurisdictions recognise that algorithmic recommendations are not passive hosting; however, the EU's direct liability model imposes ex-ante obligations that Chinese courts have only addressed ex-post through judicial interpretation. The DSA also demands greater transparency and, therefore, will be enforced based on evidence; the Chinese algorithm disclosure rules, however, are only procedural.

The corresponding dimensions are as follows. First, concerning the characterisation of platforms, Chinese courts have held that platforms are information-storage-space-service providers subject to fault-based liability, whereas the EU has designated them as online content-sharing service providers with direct liability. Second, the standard of primary liability in China is a higher duty of care model, and the EU still uses a direct liability system. Third, on the legal effect of algorithmic recommendation, China considers it an aggravating circumstance for a duty of care, while the EU refers to it as a cause for direct liability. Fourthly, for cross-border application, Chinese domestic law applies to Douyin and the DSM Directive is imposed on TikTok in the EU.

4. Development direction of platform copyright liability: a technology-calibrated accountability system

Based on the above comparison, both the Chinese and EU systems have serious deficiencies and require a more balanced and coordinated regulatory path forward. Therefore, the four directions for reform in this section are proposed: bridge the evidentiary asymmetry through algorithmic transparency; adjust obligations based on platform capacity via tiered liability; shift from reactive notice-and-takedown to technological prevention; reduce cross-border fragmentation through international harmonization. All the proposals are based on the comparative analysis performed above.

4.1. Algorithmic transparency: bridging the evidentiary gap

According to research by Douyin and TikTok, the algorithmic recommendation system will need to change the idea of platform responsibility beyond the traditional safe harbour mechanism. The first direction proposed is to introduce substantive algorithmic transparency obligations. In the *iQiyi* case, the plaintiffs were unable to demonstrate that ByteDance's algorithm had intentionally directed traffic to infringing works, and thus faced a considerable evidentiary imbalance [1]. The platform

knows how to build the recommendation system technically, but it does not share the parameters, weights or decision logic with the rights holder.

Require platforms to disclose the recommendation parameters in an accessible way, and then copyright holders can determine whether algorithmic promotion constitutes active content organisation or passive hosting. Such disclosure does not need to reveal trade secrets; instead, high-level parameters such as the factors considered in the ranking decision, the relative weight given to engagement metrics and content metadata, and whether a manual override or editorial intervention was performed should be disclosed. The EU's DSA has been the first to require very large online platforms to explain how their recommender systems work in a simple way for users [14]. China can introduce a corresponding system for copyright protection that requires platforms to keep an auditable log of algorithmic decisions on flagged content and, upon a reasonable request from rights holders, provide such logs. It will change the present procedural filing obligations under the Algorithmic Recommendation Provisions into substantive transparency obligations with practical enforcement effect [15].

As shown by Leimo's study of YouTube's Content ID, however, the actual application lacks transparency. YouTube has not specified the thresholds for triggering Content ID claims, so creators do not know why their content has been blocked and are unable to challenge the incorrect decision [12]. Opacification of this will not protect the rights of the people or promote transparency.

4.2. Tiered liability: calibrating obligations to platform capacity

Second, set up tiered liability systems for platforms according to their size, technology level and type of content in China. The definition of an online content-sharing service provider under Article 17(6) of the EU's DSM Directive provides a reference, exempting platforms that have been operating for less than three years, have an annual turnover of less than EUR 10 million and fewer than 5 million monthly unique visitors [4]. China's regulatory environment is not the same as in the EU for market concentration and platform ecosystems.

Do not directly adopt the EU's thresholds; instead, given that ByteDance, Alibaba and Tencent are powerful super-platforms with significant advantages in technology and capital, set up an independent set of criteria for China. The leading platform will proactively apply fingerprinting technology to filter content and, in cooperation with the main rights holder, conduct compulsory advance licensing negotiations for major rights. A small-platform notice-and-takedown system with simplified procedures can be used if the platform has made good-faith efforts to comply. A three-tier structure will be built to ensure fairness and to hold accountable the people who receive the recommendation from the algorithm. It is also in line with China's general regulatory ideas of fostering innovation and maintaining order, as presented in the Interim Provisions on the Administration of Algorithmic Recommendation Services [15].

4.3. Technological prevention: beyond notice-and-takedown

Third, the standard of the necessary measure should be technologically specific and include algorithmic prevention of re-uploading, not just removal. Current Chinese practice under Article 1197 of the Civil Code and the Information Network Regulations focuses on expedited removal after notification, but this has been insufficient in the context of algorithmic recommendation because infringing content can spread virally before rights holders are aware of it [1]. YouTube and other platforms have developed a content ID system to automatically detect and manage allegedly

infringing materials during uploads, and now Chinese platforms are also applying similar technology, such as artificial intelligence and machine learning [3].

Require platforms to deploy proportional automated filtering technology and thus change the regulatory mode from reactive deletion to proactive prevention. At the same time, such demands should be reasonably limited to avoid unduly restricting legitimate content, especially transformative uses such as parody, commentary and quotation that fall under fair use or statutory exceptions. The DSM Directive requires using all reasonable efforts to prevent availability and will have a human review system for disputed matches [4]. China could require the leading platforms to publish the accuracy indicators of their filtering systems, such as false positive and false negative rates, and conduct continuous optimisation and public disclosure.

As Barrett has shown in his analysis of CJEU jurisprudence, any preventative measures should be strictly targeted to avoid obstructing lawful content, and national procedural rules need to allow users to exercise their right before the court after implementing the measure [9]. Leimo's empirical results also show that over-filtering is not only a technical problem but also one of systemic incentives; online content-sharing service providers face a higher liability risk under under-filtering than under over-filtering, and thus, out of fear, adopt an excessively cautious attitude that infringes upon users' rights. Leimo has also shown that the human review in Content ID is largely symbolic; disputed claims are automatically reinstated if the rightsholder does not reply, and only a tiny fraction of cases ever reach actual human review [12]. Therefore, the norms of technological protection should be accompanied by feasible and effective countermeasures, not merely formal procedures.

4.4. Cross-border coordination: harmonizing divergent frameworks

Fourthly, cross-border coordination mechanisms need to be developed, and the identical algorithms of ByteDance fall under different liability systems in China and the EU. Regulatory fragmentation results in compliance inefficiency and competitive distortion: Platforms need to build separate content moderation systems for various areas and regions, thus raising operating costs; they may also be forced to use the weakest common standard among these regulations [11].

Coordinate the first obligations for algorithmic transparency and notice-and-stay-down mechanisms to reduce compliance fragmentation and strengthen copyright protection worldwide. Due to different legal systems and policy aims, complete harmony has not been achieved; thus, a bilateral or multilateral mutual recognition agreement can provide a certain level of enforcement for cross-border recognition. For example, if a platform meets the requirements for algorithmic transparency under the EU, it may be deemed to meet the relevant Chinese obligations after an assessment of substantial equivalence. Standardized technical protocols for rights-holder notifications and platform responses can also be used to support cross-border enforcement. Such cooperation will help Chinese rights holders protect their works on TikTok abroad and enable foreign rights holders to file complaints through Douyin; otherwise, the current imbalance between the development of domestic and foreign enforcement systems will become even more pronounced [16].

Rosati notes that, at present, the implementation by EU Member States shows a mixed result: some have added extra content ("gold-plated" the provisions), while others have only made minimal modifications to the original directive text; thus, more fragmentation has occurred since the issuance of the DSM Directive [13]. Therefore, before the different countries' applications of the law diverge, they need to be harmonised internationally.

5. Conclusion

Algorithmic recommendation has altered the foundation of copyright protection and platform immunity that the safe harbour rules sought to protect. China's iQiyi v. The ByteDance case and the EU's DSM Directive Article 17 both recognise that algorithmic distribution of content changes platforms into active actors; however, they differ in the scope of liability, with China emphasising duties of care under a fault-based system and the EU introducing direct liability for large platforms. Douyin and TikTok are similar in technology but subject to different laws in different regions; therefore, overseas cooperation is required urgently. In the future, the regulation will promote a dynamic equilibrium by fostering innovation through more open-source algorithms and tiered obligations.

References

- [1] Beijing Intellectual Property Court. (2019). Beijing iQiyi Technology Co., Ltd. v. Beijing ByteDance Technology Co., Ltd. Case No. 2019 Jing 73 Min Chu No.1234.
- [2] Litman, J. (2001). *Digital copyright*. Prometheus Books.
- [3] Jannach, D., Resnick, P., Tuzhilin, A., & Zanker, M. (2016). Recommender systems--beyond matrix completion. *Communications of the ACM*, 59(4), 94-102.
- [4] European Parliament and Council of the European Union. (2019). Directive (EU) 2019/790 of the European Parliament and of the Council on Copyright and Related Rights in the Digital Single Market. *Official Journal of the European Union*, L 130, 92-125.
- [5] Lemley, M. A. (2007). Rationalizing internet safe harbors. *Journal on Telecommunications and High Technology Law*, 6, 101-120.
- [6] Van Gerven, W. (2000). Fault as an element of torts throughout Europe. *International and Comparative Law Quarterly*, 49(4), 1019-1025.
- [7] Xu, J. (2024). Research on copyright infringement liability of algorithmic recommendation in internet platforms. *Zhengfa Luntan (Political Science and Law Tribune)*, 42(6), 118-127.
- [8] Cui, G. (2020). The fault basis of network service provider's liability for copyright infringement. *Intellectual Property (Zhishi Chanquan)*, (5), 3-14.
- [9] Barrett, S. A. J. (2019). *Article 17 of the DSM-directive: Striking a fair balance? An assessment of the compatibility of article 17 with the fundamental right to freedom of expression of users* (Master's thesis, Tilburg University).
- [10] Court of Justice of the European Union. (2021). YouTube LLC v. Constantin Film Verleih GmbH (C-682/18) and Cyando AG v. Constantin Film Verleih GmbH (C-683/18). ECLI:EU:C:2021:503.
- [11] Husovec, M., & Quintais, J. P. (2021). How to license article 17? Exploring the implementation options for the new EU rules on content-sharing platforms. *Journal of Intellectual Property, Information Technology and E-Commerce Law*, 12(2), 110-138.
- [12] Leimo, V. (2024). *Automated upload filters, user rights & data protection: Exploring Article 17 DSM Directive and its effects on users through a case study of YouTube's Content ID* (Master's thesis, University of Gothenburg).
- [13] Rosati, E. (2024). The DSM directive five years on. *Nordic Intellectual Property Law Review*, 2024, 1-10.
- [14] European Parliament and Council of the European Union. (2022). Regulation (EU) 2022/2065 of the European Parliament and of the Council on a single market for digital services (Digital Services Act). *Official Journal of the European Union*, L 277, 1-102.
- [15] Cyberspace Administration of China. (2022). Interim provisions on the administration of algorithmic recommendation services (Order No. 9).
- [16] Wang, Q. (2021). The right of communication through information network in the digital age: Challenges and responses. *Law Review (Faxue Pinglun)*(3), 86-98.