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# The Polemic of Commercializing Modified Applications for Copyright Justice: Between Text and Context

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**Abstract**

**The study aims** to analyze the polemic of commercialization of modified applications in copyright enforcement through an integrative approach between legal certainty, justice and expediency.

**The method of research** used by the author is the normative juridical method, using secondary data, in the form of primary legal materials such as Law Number 28 of 2014 concerning Copyright and its implementing regulations; secondary legal materials in the form of legal literature, journal articles, research results, legal news and legal opinion articles which are then analyzed deductively.

**The novelty** of this research lies in the assessment of copyright law that has not reflected substantive justice in the face of infringement through the commercialization of modified applications, using the approach of Hans Kelsen's Stufenbau theory and Gustav Radbruch's Integrative theory.

**The results** show that the polemic of copyright enforcement against modified applications is mulltidimensional. On the legal side, the unclear norms in the Copyright Law regarding application modification activities, the weak monitoring and enforcement system, and the lack of technical regulations (PP and Permenkumham) governing digital applications. On the other hand, social, cultural, and economic factors such as low legal awareness, the rampant culture of using modified applications, and the economic inability of the community also exacerbate this illegal commercialization practice.

**The conclusion** is that copyright enforcement of modified applications is not optimal due to the gap between normative regulation and practice. Based on Gustav Radbruch's integrative theory, the solutions offered include: (1) from the aspect of justice, the government needs to change the complaint offense into an ordinary offense for application copyright infringement and issue special regulations in the form of Government Regulations or Permenkumham for the protection of digital applications, coupled with improving the integrity of law enforcement officials; (2) from the aspect of legal certainty, it is important to revise Article 52 of the Copyright Law and strengthen supervision of the distribution of modified applications by e-commerce; and (3) from the aspect of expediency, solutions include public education, the use of open source applications as an alternative, open source application development, more affordable pricing strategies, to inclusive payment systems by official developers.

**Keywords** : Application commercialization; Copyright, Modified application.

***Abstrak***

***Penelitian ini bertujuan*** *untuk menganalisis polemik komersialisasi aplikasi modifikasi*

*dalam penegakan hak cipta melalui pendekatan integratif antara kepastian hukum, keadilan dan kemanfaatan.*
***Metode penelitian** yang digunakan penulis adalah metode yuridis normatif, dengan menggunakan data sekunder, berupa bahan hukum primer seperti Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta dan peraturan pelaksanaannya; bahan hukum sekunder berupa literatur hukum, artikel jurnal, hasil penelitian, berita hukum dan artikel opini hukum yang kemudian dianalisis secara deduktif.*
***Kebaruan** penelitian ini terletak pada pengkajian hukum hak cipta yang belum mencerminkan keadilan substantif dalam menghadapi pelanggaran melalui komersialisasi aplikasi modifikasi, dengan menggunakan pendekatan teori Stufenbau Hans Kelsen dan teori Integratif Gustav Radbruch.*
***Hasil penelitian** menunjukkan bahwa polemik penegakan hak cipta terhadap aplikasi modifikasi bersifat mulltidimensional. Di sisi hukum, ketidakjelasan norma dalam Undang-Undang Hak Cipta mengenai aktivitas modifikasi aplikasi, lemahnya sistem pengawasan dan penindakan, serta belum tersusunnya peraturan teknis (PP dan Permenkumham) yang mengatur aplikasi digital. Di sisi lain, faktor sosial, budaya, dan ekonomi seperti rendahnya kesadaran hukum, maraknya budaya penggunaan aplikasi modifikasi, serta ketidakmampuan ekonomi masyarakat turut memperparah praktik komersialisasi ilegal ini.*
***Kesimpulannya** adalah bahwa penegakan hak cipta terhadap aplikasi modifikasi belum optimal karena ketimpangan antara regulasi normatif dan praktik. Berdasarkan teori integratif Gustav Radbruch, solusi yang ditawarkan meliputi: (1) dari aspek keadilan, pemerintah perlu mengubah delik aduan menjadi delik biasa untuk pelanggaran hak cipta aplikasi serta mengeluarkan regulasi khusus dalam bentuk PP atau Permenkumham untuk perlindungan aplikasi digital, dibarengi pembenahan integritas aparat penegak hukum; (2) dari aspek kepastian hukum, penting dilakukan revisi Pasal 52 Undang-Undang Hak Cipta dan penguatan pengawasan terhadap distribusi aplikasi modifikasi oleh e-commerce; dan (3) dari aspek kemanfaatan, solusi mencakup edukasi publik, penggunaan aplikasi open source sebagai alternatif, pengembangan aplikasi open source, strategi harga lebih terjangkau, hingga sistem pembayaran yang inklusif oleh pengembang resmi.*
***Kata Kunci** : Komersialisasi aplikasi; Hak cipta; Aplikasi modifikasi.*

## 1. INTRODUCTION

The development of information technology in today's digital era is increasingly widespread and has brought about various changes, particularly in the use of applications on smartphones. The number of smartphone users in Indonesia reached 194.26 million in 2024, an increase of 2.23% compared to 2023, which recorded 190.03 million users.[1] As the number of smartphone users increases, the need for more flexible and diverse applications has grown, and the phenomenon of application modification has become increasingly popular among users in Indonesia. However, this phenomenon raises issues related to piracy. Piracy refers to any form of illegal downloading or copying of a work.[2] Piracy includes the act

[1] Abdul Muslim, Pengguna Smartphone RI Diprediksi 194 Juta, (Investor.id, 2024). Diakses dari https://investor.id/business/353856/pengguna-smartphone-ri-diprediksi-194-juta (2025, Februari 07).
[2] Naufal Nabiil Ridwansyah dan Handar Subhandi Bakhtiar, Analisis Yuridis Tindakan Pembajakan Film Berhubungan dengan Undang-Undang Hak Cipta, *Jurnal hukum*, 2023, vol., 8, no. 1, p. 22, https://doi.org/https://doi.org/10.35706/positum.v8i1.8979.

of modifying official applications into modified applications or applications that have been altered by third parties without the permission of the copyright owner. Modified applications, better known as MODs, exploit technological loopholes to unlock premium features that should only be accessible through subscription or payment of a specified amount of money. As a result, users can enjoy the commercial services of applications that should be paid for free and without having to pay the fees set by the original application developers.

The commercialization of modified applications occurs when pirated applications are used for economic gain. This practice highlights the challenges in enforcing intellectual property rights, particularly with regard to copyright protection in the digital realm. One of the factors driving the emergence of modified applications is the high cost of subscribing to official applications,[3] which is not commensurate with people's income or purchasing power. Therefore, app pirates who have expertise and skills in programming see this as an opportunity to create modified apps, which they then offer as a way to make a profit by distributing or selling these illegal apps to users or people who need them. Of course, interested users will choose to use modified applications that provide unlimited access to paid features, even though this action is against the law. So, people use modified applications solely for their needs until they are commercialized again, for example, by reselling the application or even offering services using modified applications to make money.

The commercial use of modified or unlicensed applications is a common problem, with an estimated 83% of applications used in Indonesia not having a valid license in 2017, according to a survey conducted by the Business Software Alliance (BSA), with potential losses reaching $1,095, equivalent to more than Rp 16 trillion.[4]

**Table 1. Modification Application Installation Rates and Commercial Value in Asia Pacific**

| No | Country | 2017 | 2015 | 2013 | 2011 | Commercial Value 2017 |
|---|---|---|---|---|---|---|
| 1 | Bangladesh | 84% | 86% | 87% | 90% | $226 |
| 2 | Indonesia | 83% | 84% | 84% | 86% | $1.095 |
| 3 | Pakistan | 83% | 84% | 85% | 86% | $267 |
| 4 | Sri Lanka | 77% | 79% | 83% | 84% | $138 |
| 5 | Vietnam | 74% | 78% | 81% | 81% | $492 |
| 6 | China | 66% | 70% | 74% | 77% | $6.842 |
| 7 | Thailand | 66% | 69% | 71% | 72% | $714 |
| 8 | Filipina | 64% | 67% | 69% | 70% | $388 |
| 9 | Brunei Darussalam | 64% | 66% | 66% | 67% | $18 |
| 10 | India | 56% | 58% | 60% | 63% | $2.474 |

Source: Business Software Alliance (BSA)[5]

[3] Dadang Komara, Muhammad Fauzan, dan Elan Jaelani, "Perlindungan Hukum Bagi Pencipta Perangkat Lunak (Software) Terhadap Pembajakan Ditinjau Dari Uu No 28 Tahun 2014 Tentang Hak Cipta," *Jurnal Forum Studi Hukum dan Kemasyarakatan* 4, no. 2 (2022): p. 85, https://doi.org/10.15575/vh.v4i2.

[4] Business Software Alliance, *Software Management: Security Imperative, Business Opportunity*, 2018, Diakses dari https://www.bsa.org/globalstudy (2025, Februari 07).

[5] Business Software Alliance, "Software Management: Security Imperative, Business Opportunity," 2018, Diakses

This phenomenon not only causes significant losses to the revenue and growth of the national application sector, but also hinders the development of innovation and creativity among developers. This practice involves not only individuals, but also legal entities such as corporations. The government itself acknowledges the great challenges in monitoring and enforcing the law against entities involved in the use of applications without official licenses.[6] This shows that the lack of legal protection and weak enforcement of regulations provide opportunities for irresponsible parties to exploit legal loopholes for personal gain.

The commercialization of modified applications clearly violates economic rights, which are an important part of copyright, because the original application developers who depend on revenue from premium services or paid features are disrupted and ultimately suffer commercial losses. In addition, the moral rights of application creators are also neglected, because their work is modified without consent. In Indonesia, these copyrights are strictly regulated in Law Number 28 of 2014 concerning Copyright. In fact, in this digital age, the challenges in enforcing copyright law are increasingly complex, mainly due to the digital nature of products that can be easily replicated and distributed without limits via the internet. In the long term, if the commercialization of modified applications continues and is left unchecked, this has the potential to become an accepted and normal practice in society.

Referring to several previous studies, such as the study by Taufiqqurrahman [7] Research on copyright protection related to the infringement of foreign copyrighted works, research by I Gde Akhila Rayintama[8] which analyzes legal protection arrangements for mobile applications from a copyright perspective, as well as research by Daniel Stefan Stefwandi[9] which examines the protection of software intellectual property in the Indonesian legal system, where research is still limited to general legal analysis, this study specifically examines the commercialization of modified applications in depth through the integration of Stufenbau theory (legal hierarchy analysis)[10] and Gustav Radbruch's integrative theory (balance between justice, legal certainty, and social utility)[11] to complement these studies. This study aims to analyze the polemic surrounding the commercialization of modified

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dari https://www.bsa.org/files/2019-02/2018_BSA_GSS_Report_en_.pdf (2025, April 29).

[6] Daniel Stefan Stefwandi dan Pande Yogantara S, Perlindungan Kekayaan Intelektual Software Dalam Tatanan Hukum Indonesia, *Jurnal Kertha Desa*, 2023, vol. 9711, no. 2, p. 1704, Perlindungan Kekayaan Intelektual Software Dalam Tatanan Hukum Indonesia, *Jurnal Kertha Desa*, 2023, vol. 11, no. 2, p. 1704, https://newssetup.kontan.co.id/news/pada-tahun-.

[7] Taupiqqurrahman, Alivia Putri Aina, dan Syamsul Hadi, Perlindungan Hak Cipta Terkait Pelanggaran Modifikasi Karya Ciptaan Asing Yang Dilakukan Tanpa Izin Di Indonesia, *Supremasi : Jurnal Hukum,* 2021, vol. 4, no. 1, p. 95 , https://doi.org/10.36441/supremasi.v4i1.548.

[8] I Gde Akhila Rayintama dan I Made Udiana, Pengaturan Perlindungan Hukum Atas Aplikasi Mobile Ditinjau Dari Hak Cipta, *Jurnal Kertha Desa*, 2020, vol. 8, no. 9, p. 1, https://ojs.unud.ac.id/index.php/kerthadesa/article/view/66315.

[9] Stefwandi dan S, *Op. Cit.,* p. 1703.

[10] Muhamad Baharuddin Jusuf dan Adara Khalfani Mazin, "Penerapan Teori Hans Kelsen Sebagai Bentuk Upaya Tertib Hukum di Indonesia," *Das Sollen: Jurnal Kajian Kontemporer Hukum dan Masyaraka* , 2023, vol. 2, no. 1, p. 1–25, https://doi.org/10.11111/dassollen.xxxxxxx.

[11] Oksidelfa Yanto, *Negara Hukum: Kepastian, keadilan, dan kemanfaatan Hukum (Dalam Sistem Peradilan Pidana Indonesia)*, *Pustaka Reka Cipta*, I, Bandung: Pustaka Reka Cipta, 2020.

applications as a form of copyright infringement that has not been optimally accommodated in the existing legal system. By examining this issue through an integrative approach, it presents solutions that are not only normative but also contextual to today's digital reality.

## 2. METHOD

This study uses a normative legal research method because the focus of the study is an analysis of applicable written legal norms. Using a legislative approach,[12] to identify and examine the structure and content of norms directly related to copyright and its violations. As well as a case approach to analyze phenomena or cases related to the commercial use of modified applications. Thus, this study will examine the compatibility of written law with the social reality of the commercialization of modified applications. The data used is secondary data according to Soerjono Soekanto.[13] classified into primary legal materials consisting of Law Number 28 of 2014 concerning Copyright, Government Regulation (PP) Number 56 of 2021 concerning the Management of Royalties for Song and/or Music Copyright, Regulation of the Minister of Law and Human Rights (Permenkumham) Number 9 of 2022 concerning the Implementation of Government Regulation Number 56 of 2021 concerning the Management of Royalties for Songs and/or Music Copyrights, and Regulation of the Minister of Law and Human Rights (Permenkumham) Number 15 of 2024 concerning the Management of Royalties for Secondary Use Licenses for Book Copyrights and/or Other Written Works. Then, secondary legal materials that include case reports or legal news, academic journals, books, legal literature, and other sources such as relevant previous research results. All of this data was analyzed descriptively to describe the phenomenon under study, then conclusions were drawn from general to specific issues to obtain solutions to the challenges of commercializing modified applications using deductive methods. In analyzing the legal regulations on the commercialization of modified applications, Hans Kelsen's Stufenbau theory was used.[14] This theory states that legal norms are arranged hierarchically from the highest norm to the lowest technical norm. Every lower norm must originate from and not contradict the norm above it. Then there is Gustav Radbruch's integrative theory of law[15] to analyze solutions for enforcing copyright on the commercialization of modified applications, both in terms of text and context.

## 3. DISCUSSION

### 3.1 Commercialization of Modified Applications in Indonesia

Commercialization using modified applications is a practice whereby unauthorized parties derive economic benefit from the use, distribution, or exploitation of modified applications without permission from the copyright holder, namely the application developer. Thus, applications that have been created and do not have an official license are then exploited in activities aimed at obtaining economic benefits for both the application pirates and the users. Piracy is the basis of this process, which involves the unauthorized use

[12] Nur Solikhin, *Pengantar Metodologi Penelitian Hukum,* Pasuruan: CV. Penerbit Qiara Media, 2019. p. 59.
[13] Muhaimin, *Metode Penelitian Hukum*, Mataram: Mataram University Press, 2020. p. 59.
[14] Jusuf dan Adara Khalfani Mazin, *Loc. Cit.*
[15] Yanto, *Loc. Cit.*

of official copies that are then modified to unlock premium features, remove advertisements, or add certain functionalities that can reduce the usability and security of the application. As a result, these applications often have a bad image because they have been modified by irresponsible parties, ultimately disregarding the economic rights of the creator.[16]

The commercialization of modified applications takes various forms. For pirates or parties who create modified applications, they usually commercialize them by distributing modified applications on unofficial platforms such as websites created specifically for public access, which contain a wide variety of modified applications to make it easier for users to download the mod applications they want,[17] Such as the websites Mod Combo, Happy Mod, Putra Adam, RevDl Mod, Rexdl Dlandroid, Moddb, Ihackedit, LiteApks, and so on. Examples of widely modified applications include messaging applications such as WhatsApp, as well as graphic design applications such as Adobe Illustrator, Canva, Corel Draw, Picsart, and PixelLab. Photography and videography applications are also modified, such as Adobe Premiere Rush, Lightroom, and Photoshop. Not only that, various online gaming apps, as well as music and movie apps like Spotify, YouTube, Netflix, and Viu, are also targets for modification. With these websites, users can easily obtain modified apps. However, ethically, users should download the original version of the app through the Play Store, whether free or paid, or download it from the app's official website.

**Table 2. Number of Devices that have Downloaded several Modified Applications on one of the Modified Application Provider Sites**

| No | Modification Application | Number of Devices Downloaded |
|---|---|---|
| 1 | Netflix | 3.977.367 |
| 2 | Spotify | 1.504.306 |
| 3 | Youtube | 1.181.160 |
| 4 | Whatsapp | 475.390 |
| 5 | Microsoft Office | 162.245 |
| 6 | Viu | 94.615 |
| 7 | PixelLab | 75.553 |
| 8 | Adobe Illustrator | 52.389 |
| 9 | Picsart | 39.998 |

Source: Happy Mod[18]

These figures show the high level of public interest in modified applications, which are actually illegal. In addition to direct distribution, some perpetrators also commercialize modified applications through advertising. Although more modified applications have removed advertisements, there are some that only modify certain parts of the original or paid application, such as unlocking premium features but still retaining advertisements. There are also developers who intentionally insert their own advertisements by replacing the

[16] Patricia Karin Purba dan I Made Sarjana, Perlindungan hukum hak cipta terhadap perbuatan modifikasi aplikasi berbayar yang menimbulkan kerugian, *Jurnal Kertha Negara,* 2014, vol. 11, no. 6, p. 628, https://ojs.unud.ac.id/index.php/kerthanegara/article/view/100430.

[17] Fenny Wulandari, Problematika Pelanggaran Hak Cipta di Era Digital, *Journal of Contemporary Law Studies*, 2024, vol. 2, no. 2, p. 103, https://doi.org/10.47134/lawstudies.v2i2.2261.

[18] "Happy Mod," Diakses dari https://ind.happymod.com/ (2025, Februari 10).

original application's advertising network with a private advertising network for commercial gain. Some parties also commercialize by requesting donations or providing special features for users under the pretext of supporting application development so that they continue to provide financial contributions. All of these activities significantly harm the owners or developers of the original applications, whose applications have been modified, while the revenue they should have earned through in-app purchases, subscriptions, or advertisements is instead diverted to the application pirates.

Meanwhile, for users, this commercialization also occurs in different patterns or forms. Users take advantage of modified applications to gain profits by using them as tools to open certain services that require paid applications in their official versions. For example, users can offer document, photo, or video editing services using modified applications that have unlocked premium features. After offering their services, users will obtain financial benefits without having to subscribe to the official application. There are also users who deliberately sell modified applications they have obtained to other users who need them at low prices, or even at higher prices.[19]

Some of them open computer or design training courses using modified applications to minimize expenses. Not only that, users often use modified applications as a means to help their business activities, which are prohibited by law. Such as the installation of modified applications on computers, where they clearly install pirated modified applications on consumers' devices. Such as the case that occurred in 2016 in Glodok, Jakarta,[20] Two suspects, identified as FY and F, are suspected of selling pirated Microsoft Windows applications for Rp 500,000-750,000 per unit, which is much cheaper than the original price of around Rp 2.5 million. This case was uncovered after the Metro Jaya Police Criminal Investigation Unit received a report from Microsoft through the Indonesian Anti-Piracy Society (MIAP). During the raid, police found hundreds of CDs and fake Microsoft license stickers in two stores, and discovered that FY was also selling these products online. This illegal practice, which had been going on for a year with a monthly turnover of around Rp 50 million, is estimated to have caused Microsoft losses of up to Rp 1 billion.

In addition to violating copyright and harming developers economically, using modified applications also has an impact on consumers, such as the emergence of security risks, because modified applications have the potential to carry malware and viruses.[21] Users who download this application risk damaging their devices, experiencing performance degradation, or even compromising the security of important data if the application carries a virus. Once installed, modified applications usually request permission to access a large

[19] Rayintama dan I Made Udiana, *Op.Cit.,* p. 3.

[20] Mei Amelia, Polisi Tangkap Penjual Software Microsoft Windows Bajakan di Glodok. Diakses dari https://news.detik.com/berita/d-3232073/polisi-tangkap-penjual-software-microsoft-windows-bajakan-di-glodok (2025, Februari 16).

[21] Ahmad Mohammad Hassan dan Ayuba John, *Comparative analysis on different software piracy prevention techniques*, *International Journal of Informatics and Communication Technology (IJ-ICT)*, 2021, vol. 10, no. 1, p. 3, https://doi.org/10.11591/ijict.v10i1.pp1-8.

amount of personal data such as email, contacts, passwords, and user financial information.[22] When gaining access, unaware or uninformed users can become victims of identity theft, account hacking, and extortion. Such as the case revealed by the Indonesian National Police's Criminal Investigation Unit in January 2023, where 13 perpetrators were arrested for involvement in fraud through modified applications and phishing.[23] They use fake applications and phishing links to steal user information and illegally access bank accounts. As a result, 483 people have fallen victim and losses have reached 12 billion. Although this has a greater impact on users than developers, the effects of this risk also impact the digital sector as a whole. According to the BSA survey results in 2018, malware attacks are the biggest threat, costing companies $2.4 million and incurring costs of up to $359 billion annually worldwide.[24] Therefore, the unsafe use of these modified applications also poses a challenge in educating users.

Loss of support and updates is one of the risks of use,[25] Because modified applications usually do not receive official updates like paid applications that are officially downloaded from the Play Store. As a result, users do not get the latest security features or critical bug fixes. This increases vulnerability to new threats and makes smartphone use less than optimal. Therefore, regular application updates are very important for the system to run properly and optimally. Then, regarding the risks to consumer or commercial user rights, the Copyright Law does not provide protection if users experience losses. There will be no guarantee if users feel cheated because the modified application does not work like a paid application. Even the Consumer Protection Law does not side with users of modified applications. Therefore, users cannot seek accountability or file complaints if they experience losses, damage, or other issues during use, as the use of modified applications constitutes a copyright infringement and cannot be considered a valid business transaction.

The commercialization of modified applications also causes significant economic losses to the software industry. When modified applications are used and commercialized, developers and companies lose potential revenue. These losses will certainly affect their ability to invest in research and development, which will ultimately hamper innovation and development in the technology sector. In addition, the economic impact will affect employment. Modified applications cause loss of income and reduced employment in the software development sector. As in Nigeria, where the official application industry employs millions of people.[26] However, the decline in profits due to the illegal use and distribution of

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[22] Angelia Pratiwi Mastiurlani Christina Sitorus, Aplikasi Whatsapp Bajakan sebagai Ancaman Kejahatan Siber di Indonesia, *Arus Jurnal Sosial dan Humaniora (AJSH)*, 2024, vol. 4, no. 1, p. 160, https://doi.org/https://doi.org/10.57250/ajsh.v4i1.355.

[23] Rahel Narda Chaterine, Bareskrim Tangkap 13 Tersangka Kasus Penipuan APK Android, Kerugian Capai Rp 12 Miliar. Diakses dari https://nasional.kompas.com/read/2023/01/19/18211941/bareskrim-tangkap-13-tersangka-kasus-penipuan-apk-andorid-kerugian-capai-rp (2025, Februari 21).

[24] Business Software Alliance, "Software Management: Security Imperative, Business Opportunity."

[25] Jerry et al., "Pelanggaran Etika Sistem Informasi Dalam Penggunaan Software Bajakan," *Jurnal Sistem Informasi, Teknologi Informasi, dan Edukasi Sistem Informasi* 4, no. 1 (2023): p. 26, https://doi.org/https://doi.org/10.25126/justsi.v4i2.140.

[26] David Roland Andembubto, Jonathan Iliya Apuru, dan Siyani Dogo Ezra, "Software Piracy in Nigeria," *Asian*

applications each year has caused workers' incomes in Nigeria to decline and ultimately led to layoffs. This could certainly happen in Indonesia as well, if the commercialization of these modified applications continues without considering the impact and consequences.

### 3.2 The Challenge of Enforcing Copyright on the Commercialization of Modified Applications in Indonesia

#### 3.2.1 Perspectives on Copyright Law and Derivative Regulatory Imbalances Based on Hans Kalsen's Stufenbau Theory

The commercialization of modified applications in Indonesia poses a serious challenge for application developers, which will ultimately lead to the neglect of the economic rights of developers or application creators. According to Article 8, economic rights are the exclusive rights of creators or copyright holders to obtain economic benefits from their creations. Furthermore, Article 9 clearly regulates economic rights, namely in Paragraph 1, which states that creators or copyright holders have the right to take action on their creations, such as publishing creations, reproducing creations in any form, translating creations, adapting, arranging or transforming creations, distributing creations or copies thereof, performance of the creation, announcement of the creation, communication of the creation, and rental of the creation. In addition, Paragraph 2 states that anyone exercising economic rights must obtain permission from the creator or copyright holder. Furthermore, Paragraph 3 states that anyone without the permission of the creator or copyright holder is prohibited from reproducing and/or commercially using the creation.

Based on the provisions of Article 9 Paragraph 1, the researcher highlights several aspects of economic rights related to the commercialization of modified applications. First, the publication of a Creation (Article 9 paragraph 1 letter a) and the Reproduction of a Creation in any form (Article 9 paragraph 1 letter b), where the modified application is a duplicate of the original application, directly violates the exclusive rights of the copyright holder to reproduce the application, publish it, and obtain economic benefits. Second, adaptation, arrangement, or transformation (Article 9 paragraph 1 letter d) is also violated, because the modified application is a transformation of the original application. This unauthorized transformation violates the economic rights of the creator, because the original developer loses control over the modification. Third, distribution of the work or copies thereof (Article 9 paragraph 1 letter e), because the modified application is distributed illegally through various digital platforms. This certainly also violates the economic rights of the copyright holder, who should have the right to control how and where copies of the application are distributed. Thus, the distribution of this modified application allows users to enjoy the application without providing compensation to the original developer. And the creators of modified applications do not need to pay any royalties. Royalties are a fundamental element of the economic rights of creators and related rights holders in paid applications. The payment of royalties reflects appreciation for the efforts and talents of the original creators or developers, while encouraging them to

continue creating applications.[27] Fourth, Creation Announcements and Communications (Article 9 paragraph 1 letters g and h), whereby modified applications are often promoted and disseminated. This communication and announcement is done without permission and directly harms the original developer. By promoting modified applications, the perpetrators not only violate copyright but also facilitate the illegal distribution of works and reduce the appeal of the original version of the application in the eyes of consumers. All of this is, of course, done solely for commercial purposes. In accordance with Article 9 paragraphs 2 and 3 above, it also implies that users are not allowed to use applications unless they have obtained permission or purchased them from the copyright holder, especially if the application will be used for commercial purposes. Commercial use refers to use for the purpose of seeking economic gain. This is even more so if the application used for commercial purposes is a modified application, which is a clear violation.

However, the Copyright Law still provides exceptions for acts that are not considered copyright infringement, such as when modified applications are used for educational, research, and scientific writing purposes, or for compiling reports, as long as the source is cited and the application is not used for economic gain. Similarly, a user who uses a modified application to test features in the application is justified as long as it is done for research and development. This shows that the exception is only intended for acts that are not intended for commercialization. However, even with this exception, if the use of modified applications causes significant losses to the creator, it can certainly be challenged legally. Therefore, the commercial use of modified applications requires special attention so as not to violate the copyright of an intellectual work and to remain in line with the provisions of the Copyright Law.

Intellectual property is a form of property that originates from the creative intellectual work of an individual, embodied in a work with specific commercial value and utility.[28] Copyrighted works are ideas that have been realized in a concrete and original form.[29] In other words, copyright only applies to creative expressions that can be physically identified, not merely abstract concepts, let alone imitations of other people's work. Therefore, not all individuals can produce intellectual work because creating work requires ability, dedication, and consistent effort. An application developer creates an application using their energy, time, thoughts, and money, resulting in the creation of an application. This work becomes part of intellectual property that is the exclusive right of its creator. However, with the emergence of irresponsible actors who modify the application, the original application developer will feel economically and even morally aggrieved. These individuals do not hesitate to use modified applications for commercial gain, without considering the negative

[27] Muh. Habibi Akbar Rusly dan Mukti Fajar ND, Mekanisme Pembayaran Royalti Lagu Dan Musik Dalam Aplikasi Streaming Musik, *Media of Law and Sharia,* 2020, vol. 1, no. 2, p. 84, https://doi.org/10.18196/mls.v1i2.8344.
[28] Taupiqqurrahman, Aina, dan Hadi, *Op. Cit.*, p. 96.
[29] Muhammad Azhari Hasibuan, Perlindungan Hukum Bagi Pemegang Hak Cipta Atas Pelanggaran Modifikasi Dan Penggunaan Musik Atau Lagu Berdasarkan Undang-Undang Nomor 28 Tahun 2014 Tentang Hak Cipta, *Jurnal Notarius*, 2022, vol. 1, no. 2, p. 222.

impact on developers. Such actions violate copyright because they infringe on the economic rights of the creator and exploit the original work without permission, as stipulated in Article 9, paragraphs 2 and 3.

As in the case that occurred in Glodok, Jakarta in 2016, which illustrates how commercial practices using pirated or modified applications harm copyright owners, in this case Microsoft. Furthermore, the possession of hundreds of CDs and fake license stickers indicates a large-scale copyright infringement. While such activities may benefit consumers who need Microsoft Windows applications, the practice remains in violation of the law. As stated in Article 10 of the Copyright Law, "managers of trading places are prohibited from allowing the sale and/or duplication of goods that violate Copyright and/or Related Rights in the trading places they manage." This means that the law prohibits all forms of trading and use of modified applications, especially when they are used as the main tool in conducting business activities. This poses a challenge that further exacerbates the losses for original application developers, because services based on modified applications are more attractive to users who should be the target market for paid or licensed applications, and in this situation, the economic rights of the original application creators are violated.

However, normatively, there is ambiguity in the legal regulations. Specifically, Article 52 prohibits the destruction or removal of technological control measures against creations. In this article, the Copyright Law does not explicitly regulate whether the modification of paid applications constitutes a violation of technological control measures. This norm also does not explicitly regulate the modification of applications, such as the addition or removal of features in paid applications. This is because the article only provides restrictions on damaging, destroying, removing, or rendering technological measures inoperable.[30] This loophole is often exploited by modifiers who believe that changes to the structure or appearance of an application do not constitute a violation. This highlights the weakness of the legal framework in addressing digital violations.

Another weakness is the nature of criminal complaints as stipulated in Article 120, whereby the government or law enforcement agencies cannot prosecute copyright infringement cases involving the commercialization of modified applications without a report from the copyright holder as the basis for legal action. This causes difficulties in enforcing copyright, as violations can only be followed up if the rights holder reports them. Conversely, investigations can be terminated if the complaint is withdrawn or retracted due to its nature as a complaint offense. In practice, many developers do not report violations due to access constraints, costs, or being outside Indonesian jurisdiction. As a result, violations occurring in the digital space cannot be proactively addressed by law enforcement, and the commercialization of modified applications continues, hindering ongoing prevention efforts.

In Hans Kelsen's Stufenbau theory, law is viewed as a hierarchical system, starting from the basic norm (Grundnorm) to the technical operational regulations at the lowest level. Law

[30] Purba dan Sarjana, *Op. Cit.*, p. 633.

is a hierarchical system of norms, where general and fundamental norms form the basis for the formation of concrete norms.[31] Stufenbau explains that every legal norm derives its validity from a higher norm.[32] In terms of copyright, particularly in relation to the commercialization of modified applications, normative regulations in Indonesia are still largely based on Law No. 28 of 2014 concerning Copyright. However, elaboration at a lower level is very limited. In fact, when viewed from the perspective of Stufenbau, there should be continuity from basic to technical norms so that the implementation of legal protection is more effective and comprehensive, especially with regard to applications.

Regarding the criminal provisions in Article 112 of the Copyright Law, "any person who, without authorization, commits an act as referred to in Article 7 paragraph (3) and/or Article 52 for commercial use shall be punished with imprisonment of up to 2 (two) years and/or a maximum fine of Rp 300,000,000.00 (three hundred million rupiah)." Furthermore, Article 113 paragraph 3 states, "Any person who, without rights and/or without the permission of the Creator or Copyright holder, violates the economic rights of the Creator as referred to in Article 9 paragraph (l) letters a, b, e, and/or g for Commercial Use shall be punished with imprisonment of up to 4 (four) years and/or a maximum fine of Rp1,000,000,000.00 (one billion rupiah)." These rules are designed as an effort to protect copyright by imposing sanctions for piracy or commercial use violations to protect the economic rights of creators and prevent other parties from profiting from the work of others.

The government has issued Government Regulation (PP) Number 56 of 2021 concerning the Management of Song and/or Music Copyright Royalties as a derivative regulation, but its scope is still very limited, focusing only on songs and/or music, as stated in Article 1 Paragraph 3. Even the scope of commercial public service use is regulated in detail in Article 3 Paragraph 2, which covers commercial seminars and conferences, restaurants, cafes, aircraft, music concerts, cinemas, shops, and karaoke businesses, but all of these are still within the scope of commercial songs and/or music. On the other hand, none of the provisions in this Government Regulation regulate other forms of creation such as digital applications. The provisions in this Government Regulation do show the government's efforts to provide protection for the economic rights of creators of songs and/or music, but the limitation of the object of creation causes legal inequality in the treatment of other forms of creation, especially those that are most affected in this era, namely digital applications. In other words, Government Regulation No. 56 of 2021 cannot be used as a direct legal basis to prosecute those who commercialize modified applications. This gap is clear evidence that the existing regulatory text has not addressed the factual context that has developed within society.

Then, in an effort to explore the level of copyright protection in Indonesia, Minister of

[31] Jusuf dan Adara Khalfani Mazin, *Op. Cit,* p. 7.
[32] M. Nur Fadli, "Hans Kelsen: Positivisme Hukum, Grundnorm, dan Stufenbau Theory," LSF Discourse, Diakses dari https://lsfdiscourse.org/hans-kelsen-positivisme-hukum-grundnorm-dan-stufenbau-theory/ (2025, Mei 10).

Law and Human Rights Regulation (Permenkumham) Number 9 of 2022 is one of the implementing regulations that is a direct derivative of Government Regulation Number 56 of 2021 concerning the Management of Royalties for Song and/or Music Copyright. This Permenkumham regulates the technical management related to the collection, pooling, and distribution of royalties to copyright owners of songs and music, the organizational structure and work procedures of the National Collective Management Institution (LMKN) and the Collective Management Institution (LMKN). This Permenkumham regulates in as much detail as possible the collective management system for songs and music, and even includes a special information system called SILM (Song and Music Information System), which functions as a data center for songs and music used for the distribution of royalties. When such detailed technical and institutional regulations are available for songs and music, but not for applications, there will be an imbalance in the regulatory text. Therefore, both the PP and Permenkumham only touch on one type of creation, namely songs and/or music, and do not provide any regulations regarding applications.

The same applies to Government Regulation (PP) Number 15 of 2024, which is a continuation of the regulatory spirit of the Copyright Law. This Permenkumham regulates in detail the Management of Royalties for Secondary Use Licenses for Book Copyrights and/or other Written Works, both in physical and digital form. This is a step forward in the state's efforts to provide concrete protection for the economic rights of creators and copyright holders in the field of literacy, particularly against unauthorized commercial reproduction and distribution. This Permenkumham pays serious attention to the protection of copyrights such as books, scientific journals, articles, magazines, and writings and images in print or electronic media. It even regulates what is meant by secondary users in Article 5, including educational units, universities, photocopiers, broadcasting institutions, and so on, which are subject to royalty payments. However, once again, this Ministerial Regulation does not cover digital applications. While copyright infringement of applications is becoming more widespread, the state does not yet have technical legal instruments that regulate the protection of applications in the same way as books, songs, and music. This imbalance will continue to exist because the technical regulations only target a small portion of copyright protection objects and ignore other forms of creation that are also vulnerable in the digital era. The absence of regulations regarding digital applications in the Government Regulation and Minister of Law and Human Rights Regulation shows that lower legal norms have not optimally implemented the mandate of higher legal norms, namely the Copyright Law. In Stufenbau logic, lower norms should concretely elaborate on basic norms so that they can be implemented effectively. When derivative norms are unavailable or irrelevant, basic norms lose their implementative power. This condition is exacerbated by weak digital supervision, as shown by the "Notorious Market List 2021" report.

Although sanctions for commercial use of copyrighted works have been regulated in Article 112 and Article 113 paragraph 3 of the Copyright Law, in practice, the efforts made by the government have not been optimal. This is because law enforcement against copyright

infringement in the digital sector is still weak in terms of supervision, as evidenced by the large number of websites that still frequently share modified applications on the internet that can be accessed for free anytime and anywhere. Modified applications are also still widely traded through e-commerce applications, such as Tokopedia, Bukalapak, and Shopee. As reported by CNN Indonesia in February 2022, two Indonesian e-commerce applications, Tokopedia and Bukalapak, as well as one Singaporean e-commerce application operating in Indonesia, Shopee, were included in the "Notorious Market List 2021" by the United States Department of Commerce.[33] The three platforms are suspected of facilitating the sale of counterfeit or pirated products that violate copyrights, particularly intellectual property rights. Tokopedia is known as one of the largest e-commerce marketplaces in Indonesia. However, the US Department of Commerce has complained about the large number of counterfeit goods sold on this platform, including applications, books, and others. Although Tokopedia has improved its notification and removal system for counterfeit goods, there is a perception that the process is still too slow and burdensome for copyright holders. Bukalapak has also faced similar complaints, with many branded products on BukaLapak being counterfeit. Despite improvements to its anti-counterfeiting system, Bukalapak is considered to be insufficient in preventing sellers of counterfeit goods from re-registering on the platform. Bukalapak is slow and inefficient in responding to reports of violations despite the ban. Shopee faces complaints from US copyright holders, who say the level of counterfeiting on Shopee is very high, especially in Southeast Asia. Slow and ineffective notification and removal procedures are considered to make it easy for sellers of counterfeit goods to continue operating on this platform. Although there has been an increase in collaboration between e-commerce platforms and copyright holders, the existing system is not sufficient to completely prevent the sale of counterfeit goods on these platforms. In fact, to date, modified applications are still widely traded. One only needs to search for them in the search bar on the platform to see a list of modified applications. This remains a challenge for copyright enforcement.

Thus, based on Stufenbau theory, there is a disconnect between copyright law norms at the legislative level and the reality of technical regulatory needs in the field. This imbalance creates legal loopholes that continue to be exploited in the commercialization of modified applications. This creates regulatory imbalances and violations of the principle of multi-level norms in Hans Kelsen's Stufenbau theory.

### 3.2.2 Challenges in Economic, Social, and Cultural Factors

The growth of commercialized modified applications is also inseparable from various economic factors. Many modified application developers see economic opportunities in paid applications or applications with premium features. By modifying them, they can utilize and distribute these modified versions to make a profit. This creates a source of income for

[33] CNN Indonesia, Tokopedia, Bukalapak, Shopee Masuk Daftar Pengawasan AS. Diakses dari https://www.cnnindonesia.com/ekonomi/20220222071139-92-762186/tokopedia-bukalapak-shopee-masuk-daftar-pengawasan-as (2025, Februari 23).

modified application developers without having to invest time and money, let alone go through official processes such as development or licensing agreements with the official application creators.[34] Similarly, users who open commercial services using modified applications tend to look for ways to reduce operational expenses. Most official applications are often priced quite expensively, so using modified applications is a solution to avoid license payments and increase profit margins. In addition, not all users have the financial ability to purchase or subscribe to premium features on applications, and there are also many users who simply do not want to spend money on an application. Some paid apps also do not provide easily accessible payment methods, especially for users without credit cards or access to international digital wallets like PayPal. Thus, the inability to legally enjoy the app and the lack of easy accessibility drive users to choose modified versions as an alternative.

Meanwhile, in terms of social factors, based on research conducted by Basrul[35] regarding the evaluation study of pirated software among FTK UIN Ar-Raniry students, and research by Muhammad Afif Mafazi[36] regarding the legal awareness of software installation service providers in Malang, it shows that from a social perspective, users of modified applications do not fully understand the legal implications of copyright infringement and illegal application modification. Furthermore, users' awareness of intellectual property rights and the provisions of the Copyright Law and the penalties attached to copyright infringement is still low, causing this practice to continue. Users consider the use of modified applications to be normal, without realizing that such actions harm the original developers. Likewise, the original application developers do not understand that their rights have been violated or do not know how to take legal action against such violations.

Based on research conducted by Saini Das and Arunabha Mukhopadhyay, which examined 55 countries, including Indonesia, in relation to piracy.[37] That is, in societies with high levels of education, people's understanding of copyright is much better, because practices such as the commercialization of pirated or modified applications are often considered unethical, so individuals tend to avoid using pirated applications. Conversely, among people with low levels of education, practices such as the use of modified applications are more common due to their lack of understanding of copyright. However, in other studies, such as the research conducted by Amit Kumar Jha and Priyanka Rajan on copyright piracy and education among academics and students,[38] explains that education

[34] Faria Rahman dan Payal Pandey, *Online Software Piracy and Its Related Laws, Social Science Research Network Electronic Journal*, 2020, p. 4, https://doi.org/10.2139/ssrn.3648512.

[35] Basrul Basrul, Sari Vivianie, dan Bustami Yusuf, "Studi Evaluasi Penggunaan Software Bajakan Di Kalangan Mahasiswa Ftk Uin Ar-Raniry," *Cyberspace: Jurnal Pendidikan Teknologi Informasi*, 2018, vol. 2, no. 1, p. 37–47, https://doi.org/10.22373/cs.v2i1.2663.

[36] Muhammad Afif Mafazi, Kesadaran Hukum Penggunaan Software Bajakan Oleh Pelaku Usaha Jasa Instalasi Software Di Malang. *Skripsi*. Malang: UIN Maulana Malik Ibrahim. 2021, http://etheses.uin-malang.ac.id/id/eprint/31492.

[37] Saini Das dan Arunabha Mukhopadhyay, *Managing Dwindling Online Music Sales: Analyzing Factors Affecting Global Music Piracy, in Association for Information Systems Electronic Library (AISeL)*, 2020, p. 4.

[38] Amit Kumar Jha dan Priyanka Rajan, *Copyright Piracy and Education*, *International Journal of Intellectual*

level is not always a barrier to this practice; even among highly educated groups, the use of software, in this case modified applications, still occurs. This is mainly due to the urgent need for software for work, research, or study, but financial constraints lead them to choose modified applications.

In addition, the cultural factor of Indonesian society, which often orients product purchases solely on price without considering quality, also plays a role in the widespread use of modified applications.[39] Users often do not pay much attention to whether the application is legal or infringes copyright; what matters to them is convenience and lower costs. The impact of this increase in copyright infringement is varied. For infringers, the lack of strict enforcement will foster the attitude that infringement is normal and no longer an illegal act.

### 3.3 Analysis of Copyright Enforcement Solutions for the Commercialization of Modified Applications based on Gustav Radbruch's Integrative Legal Theory

Gustav Radbruch argued that law should not be solely subject to texts or positive norms, but should uphold three fundamental values in an integrated manner, namely justice, legal certainty, and utility.[40] All three must be integrated proportionally and contextually, so that the law does not merely become a normative text, but is able to respond to social realities in a fair and functional manner. The predicate of a new legal state is only appropriate if these three objectives of law can be realized harmoniously. And ideally, the law does need to reflect a balance between justice, certainty, and benefit in every implementation.[41]

#### 3.3.1 Justice

According to Gustav Radbruch, justice is the most important legal value and must be used as the basis in every law enforcement process,[42] including the enforcement of copyright on the commercialization of modified applications. Therefore, to overcome the limitations imposed by Article 120, the government needs to change the offense from a complaint-based offense to a regular offense, so that law enforcement officials can take legal action without requiring a complaint from the copyright holder of the application. This will enable the government to be more proactive in handling cases of commercialization of modified applications. Another alternative is to add a regular offense to the article, while still providing an explanation that the regular offense is only for copyright infringement of computer programs, while other copyright infringements remain as complaint offenses. Thus, this rule remains flexible for most copyrighted works and still provides opportunities for justice for creators even if they do not report violations. If necessary, the creation of

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*Property Management*, 2023, vol. 13, no. 12, p. 167, https://doi.org/10.1504/ijipm.2022.10047854.

[39] Rusniati, Faktor-Faktor Penyebab Pelanggaran Terhadap Hak Cipta, *Varia Hukum*, 2018, no. 39, p. 1570.

[40] Mohammad Muslih, "Negara Hukum Indonesia Dalam Perspektif Teori Hukum Gustav Radbruch (Tiga Nilai Dasar Hukum)," *Legalitas*, 2013, vol. 4, no. 1, p. 143.

[41] Yanto, *Op. Cit.,* p. 27.

[42] Sekar Balqis Safitra Rizki Wahyudia Putri, "Analisis teori tujuan hukum gustav radbruch dalam kedudukan majelis penyelesaian perselisihan medis dalam undang - undang nomor 17 tahun 2023 tentang kesehatan," *Sangaji: Jurnal Pemikiran Syariah dan Hukum*, 2024, vol. 08, no. 2, p. 322, https://doi.org/10.52266/sangaji.v8i2.3463.

special regulations in the form of a new Government Regulation (PP) or Minister of Law and Human Rights Regulation (Permenkumham) related to the protection of application copyrights is very much needed, given the large number of violations that occur, such as this commercialization, but have not been specifically regulated. This is similar to other creations, such as music, songs, and books, which already have specific regulations in PP Number 56 of 2021, Permenkumham Number 9 of 2022, and Permenkumham Number 15 of 2024. In addition, clear regulations will not be sufficient without consistent law enforcement. The law enforcement process must also be accompanied by improvements on the part of law enforcement officials. The law will be meaningless if it is enforced by officials who lack integrity. Conversely, in the hands of good and responsive law enforcement officials, the law will truly work to uphold justice. Therefore, even if the law has been well drafted, if it is not implemented consistently and fairly, it will all be in vain. The state must set an example in complying with and enforcing the law in accordance with applicable norms and laws, because society will reflect the legal behavior of the state. That is the essence of legal justice itself.[43]

The police also need to be actively involved in cracking down on perpetrators who continue to sell and provide modified application installation services, especially at Windows or computer software installation service centers. Because these places are often locations where modified applications are distributed directly to consumers, intensive monitoring and enforcement at these locations is essential, such as conducting regular raids and special operations in areas with the most application installation services. The police can issue appeals and warnings to application installation service providers not to provide modified applications, accompanied by the threat of sanctions in accordance with Articles 112 and 113 paragraph 3 if they continue to violate the law. In addition, serious attention needs to be paid to the weak state of cyber security in Indonesia.[44] This has become a loophole that is exploited for the distribution of illegal applications, making it crucial to strengthen security systems and digital awareness among users and service providers.

### 3.3.2 Legal Certainty

Legal certainty plays a crucial role in a legal system because it guarantees security for the community and provides clarity and predictability in legal proceedings.[45] Legal certainty ensures that everyone knows what is permitted and prohibited, and protects against the abuse of power. Certainty is crucial so that the public and officials have clear legal guidelines that are not open to multiple interpretations. In the context of the commercialization of modified applications, one solution to achieve legal certainty is to address the ambiguity of the norms in the Copyright Law, particularly in Article 52, where the government needs to

[43] Yanto, *Op. Cit.,* p. 29.
[44] Rita Puspita Sari, PDN Diserang Hacker, Seberapa Lemah Keamanan Siber Indonesia?," Cloud Computing Indonesia, 2024; Julizar Idris Idris and Achmad Supandi, Evaluasi Kebijakan Undang-Undang Informasi Dan Transaksi Elektronik Di Indonesia; Potret Bibliometric Analysis, *Transparansi : Jurnal Ilmiah Ilmu Administrasi,* 2024, vol. 7, no. 1, p. 149–162, https://doi.org/https://doi.org/10.31334/transparansi.v7i1.3709.
[45] Putri, *Op. cit.,* p. 323

clarify regulations specifically related to modified applications. Revisions or enhancements to existing policies can be made by including clear provisions that paid application modifications constitute a violation of technological control measures, as well as prohibiting application modification activities such as replacing, adding, or removing features without permission in paid applications to make them better and clearer.

To overcome weaknesses in monitoring and law enforcement related to the distribution and sale of modified applications on various websites and e-commerce platforms, comprehensive efforts from various parties are needed. Monitoring digital distribution platforms is very important to reduce the illegal distribution of modified applications by blocking modified applications before they reach consumers. Platforms such as Tokopedia, Bukalapak, and Shopee have a crucial role to play in this regard and need to strengthen their systems by monitoring and tracking the sale of modified applications. This includes regular application checks and system updates to quickly and automatically detect modified applications. In addition, technical aspects such as the use of pirated software detection algorithms need to be strengthened[46] can help verify the authenticity of applications and distinguish between legitimate and illegally modified applications, enabling distribution platforms to more effectively prevent the circulation of modified applications.

Strengthening cooperation between the government through the Directorate General of Intellectual Property (DJKI) of the Ministry of Law and Human Rights, the police, and electronic trading platforms is an important step in quickly detecting and cracking down on the sale of modified applications. This action helps to minimize or narrow the space for this practice. The legal process must also be more responsive in handling reports of copyright infringement in the digital sector by prioritizing cases involving modified applications. Therefore, the government needs to ensure that every violation is processed quickly and transparently to provide a deterrent effect.

### 3.3.3 Benefits

According to Gustav Radbruch, the usefulness of law is the success of law in creating benefits for as many people as possible. Usefulness in this case refers to the positive impact of law enforcement in fulfilling the interests of society. In the context of the commercialization of modified applications, the aspect of the usefulness of law can be realized through various solutions that not only punish violations but also provide legal and educational alternatives for the community. For example, to overcome challenges in social factors such as lack of awareness and cultural factors, education is necessary. Given that a person's level of education, whether low or high, is inseparable from the use of modified applications, there are also many users who consciously or unconsciously continue to use modified applications even for commercial purposes. Therefore, public education on the importance of respecting copyright, the ethics of application use, and the negative impacts

[46] Nor Astiqah Omar, Zeti Zuryani Mohd Zakuan, dan Rizauddin Saian, "Software Piracy Detection Model Using Ant Colony Optimization Algorithm," *Journal of Physics: Conference Series* 855, no. 1 (2017): p. 1–8, https://doi.org/10.1088/1742-6596/855/1/012031.

of commercial use of modified applications needs to be promoted. Likewise, original application developers should report any violations of their rights so that the perpetrators can be prosecuted. Through this education among users and official application developers, it is hoped that their awareness of the ethics and laws related to licensed applications will grow. Of course, cooperation between the government, law enforcement agencies, official application license owners, and educational institutions is needed. That way, they will better understand that using licensed applications, even if they are paid, is a legal action and can avoid various threats such as malware, whereas using modified applications certainly violates copyright and increases the chances of being attacked by malware.

Then, in overcoming economic challenges due to cost limitations or so that users of modified applications do not continue to use them as economic opportunities, users who do not have the financial means can use open source applications. These open source applications give users the freedom to modify, study, and even distribute them to the public.[47] This application is usually available for free. Therefore, this open source licensed application can be used as an alternative for users who are running their work or business. Workers who are required to work using this application can also switch to using this open source application. So there is no reason to continue using commercially modified applications just because of the lack of funds.

However, the disadvantage of open source applications is that their features are less appealing, so users may not necessarily want to use them. Therefore, open source application developers need to improve the features of these applications to make them equivalent to other paid applications. Then, from the perspective of official or paid application developers, they need to consider the purchasing power of the community, which is not the same. By setting a slightly affordable selling price that does not significantly harm the original developer. If this is not possible, official application developers can offer a free version with basic features that are sufficient for users' daily needs. So that users who do not have the financial ability to subscribe to premium features can enjoy some of the benefits of the official application. If this is considered too burdensome, developers can consider offering special discounts or loyalty programs for users, so they are encouraged to continue subscribing to the official app. This way, users will feel that the official app provides benefits commensurate with the value they have paid.

Then, for users who want to get premium features but have difficulties because they don't have a credit card or have trouble accessing international payment methods such as PayPal. Application developers need to provide payment methods that are suitable for certain conditions or regions, such as through bank debit cards or through digital wallets such as Dana or through credit payments. These are all forms of legal adjustments to the needs and realities of society.

[47] Rahmat Hidayatullah dan Busro Karim, "Tinjauan Maslahah Terhadap Penggunaan Software Bajakan Oleh Organisasi Karang," *Jurnal Kaffa* 1, no. 4 (2022): 1–19.

## 4. CONCLUSION

The commercialization of modified applications is a form of copyright infringement that directly impacts the economic losses of the original developers. The main challenge found is the weak normative regulations related to digital applications in Law Number 28 of 2014 concerning Copyright. Provisions such as Article 9 and Article 52 do not explicitly mention the modification of applications as a copyright infringement, thus giving rise to multiple interpretations. Furthermore, Article 120, which makes copyright infringement a complaint offense, further limits the scope of law enforcement by state officials. Based on Hans Kelsen's Stufenbau theory, derivative regulations such as Government Regulation Number 56 of 2021, Minister of Law and Human Rights Regulation Number 9 of 2022, and Minister of Law and Human Rights Regulation Number 15 of 2024, which technically regulate copyright protection, only focus on creations in the form of songs, music, books, and other written works. None of them explicitly explain digital creations in the form of applications. This imbalance shows the need for regulatory updates at the technical level. As a solution, based on Gustav Radbruch's integrative legal theory, the government needs to clarify the legal status of application modifications, change the offense of complaint to a regular offense for digital creations, develop specific regulations for applications, strengthen the supervision of digital platforms, and increase public education and the provision of legal alternatives such as open source applications and affordable pricing strategies.

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