

# The Urgency of Product Authentication Validation Features in Providing Legal Protection Against Copyright Infringement in E-Commerce

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**Abstract:** E-commerce raises many legal issues, including the legal protection of copyright owners. There is a lot of copyright infringement in copyrighted works, which hurts the copyright owner. This article is intended to examine the urgency of product validation certification features that must be implemented in e-commerce to provide legal protection to copyright owners. This study is an educational study with a qualitative approach to literary studies. The survey revealed that e-commerce systems in Indonesia are currently unable to use automatic product authentication mechanisms. Therefore, governments should take significant action when drafting regulations that mandate that e-commerce service providers implement product authentication capabilities in their systems. To provide digital certificate functionality, we recommend drafting rules on regulations requiring e-commerce and implementing a set of trade authentication mechanisms to protect parties, particularly product authentication, to prevent piracy or counterfeiting. Having this certification makes it difficult for sellers to sell counterfeit or pirated products. From this research, we found that how important it is for Indonesia to require e-commerce laws, as the legal protection of users must be guaranteed by the state.

**Keywords:** Copyright Infringement; Digital Certificate; E-Commerce.

## INTRODUCTION

Information technology has developed faster than any other communication in human history<sup>1</sup>. The invention of digital technology is the most important change of the last century. The impact of information technology on data is impressive. Millennials today are a testament to a new culture, a network culture. It is changing how we live and trade from traditional business to e-commerce. The speed, creativity, and flexibility of the Internet were originally limited by military equipment, but they have great potential for spreading information across geographic boundaries. Today the Internet is used not only in education but also in business. With the availability of wireless devices, telephones, televisions, and computers, many companies can do business online through information technology and network communications.

Online transactions in trading traffic on marketplaces require buyers and sellers always to face high uncertainty, so the risks faced by the parties are very large. Concerns about security, trust, authentication, fraud, and risk of loss are among the most significant barriers to the growth of e-commerce<sup>2</sup>.

Among these factors (security factors, trust, authentication, fraud, and risk of loss), the most dominant factor providing uncertainty and the riskiest is the use of traditional (conventional) authentication mechanisms, which are carried out by physical examination and cannot be done online. Merely automating the traditional processes used in physical markets cannot solve authentication problems in e-commerce.

Many studies have discussed authentication issues in various contexts, including secure computing, mobile systems, e-commerce, and autonomous computing. However, in most e-commerce literature, the discussion of authentication is limited to identification and identity validation<sup>34</sup>. Recent empirical studies on consumer attitudes towards online stores show that trust issues beyond identifying the seller's identity are a significant concern. This is influenced by various demographic and cultural factors apart from the site's function. However, research in law on this matter has not been touched at all. This becomes very important when it is associated with the protection of Intellectual Property Rights.

The Internet has become the first place for anyone with technical knowledge to find information, advice, or a simple connection. Social media also allows people to share information about themselves, exchange ideas, and share insights on issues. Social media and social media. Copyright infringement is rampant on the Internet. Violations can be in-

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<sup>1</sup> Tabrez Ahmad, (2003), *Cyber law, e-commerce and m-commerce*, APH Publishing Corp. New Delhi

<sup>2</sup> Survey 2001, (2000), "CommerceNet 2000 Survey: Barriers to Electronic Commerce,"

<sup>3</sup> *ibid*

<sup>4</sup> R. S. Sandhu, & P. Samarati, (1996), "Authentication, Access Control, and Audit," *ACM Computing Surveys*, vol. 28, no. 1, March 1996

tentional or unintentional. In fact, it's easy to see if a copyright infringement is a working copy. It is a highly controversial issue in the digital environment<sup>5</sup>.

Intellectual Property Rights (hereinafter referred to as HKI), especially copyright, is the exclusive right obtained by the creator of the work of art he creates. IPR exists as the form of human creativity developed or studied beforehand. Therefore an idea emerged to create a work that has benefits for many people. One of the scopes of IPR is Copyright. Copyrights for works are born automatically even though the work has not been registered. According to Rayfel A. Ranting: "Protection of intellectual property rights, especially copyright, is a breakthrough in the development of law in the modern era."<sup>6</sup>

Intellectual Property Rights cannot be separated from the historical journey of developing natural rights initiated by John Locke in the 18th century. John Locke assumed that God created every human being, and already had basic rights (Inalienable Rights), including the rights to life, independence, and property rights (ownership).

"The state of Nature has a law of nature in govern it.... reason, which is that law, teaches all mankind that being all equal and independent, no one ought to harm another in his life health, libero possessions for men being all the workmanship of one omnipotent and infinitely wise Maker, all the servants of one sovereign Master sent into the world this order and about his business; they are his property whose workmanship they are made to last during his, not one another's pleasure"<sup>7,8</sup>

John Locke argued that nature has a law that governs itself. This is what is called natural law. Natural law also includes natural rights. Hence, John Locke believes that the law should teach all human beings that all humans are equal and free before the law should not hurt one another. In *Treaties on Government* (published in 1689 and 1690), John Locke's work contributed substantially to the Declaration of Rights and Bill of Rights in 1689, which governed the relationship between rulers and individuals. From here, natural laws have developed until we recognize today the existence of Intellectual Property Rights, which are included in the scope of Property Rights.

Copyright itself has two main rights that underlie its form of protection, namely moral rights and economic rights. Moral rights protect the natural rights of the creator or the right to be recognized as the author because he has created a work, and this right is human. Meanwhile, economic rights arise for creators to get profits or royalties for their creations, which result from their thoughts and deserve to be appreciated.

These two forms of legal protection are given because not everyone can create a worthy work, or humans can enjoy that to the fullest. Only certain people can employ their brains' thinking power to be poured into work to produce a useful

creation. Therefore, IPR is exclusive, where only certain people can get these rights. According to Riswandi et al., "Exclusive rights mean that no other party can take advantage of these rights except with the creator's permission or justified according to the provisions of the applicable laws."<sup>9</sup>

One of the creations that are the result of human creativity is a creation in the field of literary works in the form of a novel. Therefore, law Number 28 of 2014 concerning Copyright (hereinafter referred to as UUHC 2014), in Article 40 states that: "*Creations that are protected include creations in the fields of science, art, and literature...*"

The regulations regarding Copyright law prohibit unauthorized use of copyrighted works in two ways. First, the law provides federal measures against copyright holders whose work is infringed despite fines and damages. Second, the regulations define certain civil rights violations as crimes that can be prosecuted in the United States. Nowadays, many copyright cases are still private and privately owned by plaintiffs. Particular attention has been paid to recent legal changes, including a new definition of heavier fines and copyright infringement. As a result, the number of criminal cases is expected to increase compared to civil cases. The recent upward trend in fines and penalties is mainly aimed at distributing electronic and digital content via the Internet. Today, Internet crime is probably a mystery<sup>10</sup>.

Several kinds of research have investigated the legal protection of copyrighted works, such as the research conducted by Osgar Sahim Matompo in 2018, which examined the legal protection against copyright piracy in Indonesia. Osgar found that Law no. 24 of 2014 is a legal basis that provides legal protection for copyright holders from the risk of piracy<sup>11</sup>. Hendra Prayoga, in 2019 researched the legal protection of copyright for e-books and legal remedies for copyright holders who suffered losses due to piracy of e-book copyrighted works through online sales<sup>12</sup>. In 2021, research conducted by Fatma Fitriani Fatima examined legal liability for book piracy in e-commerce. Fatma found that the responsibility for selling pirated books in e-commerce was already stated in the Copyright Law<sup>13</sup>.

From the results of a search conducted by the author, no research has discussed legal protection against copyright piracy in e-commerce by implementing the product authentication validation feature into the e-commerce system. This feature requires a legal basis to force e-commerce service providers to implement the feature. This is because the legal provisions for the legal protection of copyright infringement in Indonesia, especially in the e-commerce world, are still very weak. This is very harmful to creators. If no serious

5 Edwards L & Waelde C, (2000), *Law and the Internet*, 3rd edition, Oxford: Hart Publishing. pg.186

6 R. A. Ranting, (2014), "Hak Cipta Dalam Jaringan Internet Ditinjau Dari Undang-Undang Nomor 19 Tahun 2002 Tentang Hak Cipta," *Jurnal Hukum Unsrat*, vol. II, no. 1, pg. 101-102

7 M. D. A. Freeman, (2014), *Lloyd's Introduction to Jurisprudence*, 7th ed. London: Sweet & Maxwell

8 M. Leiboff and M. Thomas, (2004), *Legal Theories in Principle*, 1st ed. Sidney: Lawbook Co.

9 B. A. Riswandi, (2017), *Pembatasan dan Pengecualian Hak Cipta di Era Digital*. Bandung: PT Citra Aditya Bakti,

10 Trotter Hardy, (2002), "Criminal Copyright Infringement", *William & Mary Bill of Rights Journal* Vol. 11, Issue 1, 2002-2003, article 10, pp. 305

11 Osgar Sahim Matompo, (2018), "Perlindungan Hukum Terhadap Hak Kekayaan Intelektual Atas Pembajakan di Indonesia", *Legal Standing: Jurnal Ilmu Hukum*, Vol. 2, No.1, Maret 2018, hal. 114

12 Hendra Prayoga, (2019), *Perlindungan Hukum Terhadap Pencipta yang Mengalami Kerugian atas Pembajakan Karya Cipta E-Book Melalui Penjualan Online*, Skripsi Fakultas Hukum, Universitas Jember, hlm. 5

13 Fatma Fitriani Fatima, (2021), *Pertanggungjawaban Hukum Perdana Terhadap Penjualan Buku Bajakan Melalui E-Commerce Berdasarkan UU Nomo 28 Tahun 2014 Tentang Hak Cipta*, Skripsi Fakultas Hukum, Universitas Sebelas Maret

action is taken, creators may be less than enthusiastic about creating copyrighted works. Therefore, the government should take an active role in providing authors with the best possible legal protection.

This article examines how far the urgency of the authentication and product validation features in e-commerce is in providing legal protection for copyright holders from the risk of copyright piracy. This research was conducted by doctrinal research, with a qualitative approach through literature study. The data obtained were analyzed by the analytical-descriptive method.

## DISCUSSION

Copyright infringement of intellectual property is becoming more common. For example, piracy of e-books that anyone can access. They just need to create an account on certain sites or websites that offer e-books illegally for free download. Copyright infringement, as referred to in Article 1 paragraph 23 of the Copyright Law, is an act of illegally copying a creation and distributing the goods resulting from the reproduction widely to obtain economic benefits.

If the government abandoned the copyright infringement phenomenon, it would have a negative impact on Indonesia's economic development. At the very least, it will affect writers or creators who don't want to work anymore. The severity of the copyright infringement often displeased writers with literature. Government should take serious action to give legal protection. The government could encourage the e-commerce company to build a secure system to protect the copyright from copyright infringement.

Authentication has many meanings. Some believe that authentication is one-to-one evidence<sup>14</sup>, while others argue that authentication plays a major role in identifying a product's quality and characteristics. For example, verify business fairness and monitor compliance with agreements or arrangements between the parties<sup>15</sup>. From these and other perspectives, integrity involves two important aspects: identity and integrity.

Online consumers and retailers are required to obtain information from third parties and verify this information. Thus, fidelity to the second set of information and reliability can also be assessed. Dependencies are based on the expectation that the administrator will act on behalf of the administrator without proof and primarily minimize the risk. For example, suppose a customer does not provide the required product and does not receive money and personal information from the customer. In that case, you will lose the customer's confidence in the online purchase.

The fact that two-dimensional kits and commerce involve at least buyers, sellers, and products/services leads to a three-dimensional conceptual framework for controlling e-commerce. This means everything from verifying the identity of the buyer to overwhelming trust in the quality of the product.

E-commerce uses six specific methods: robustness; acceptance rate; cost; ease of use; portability; and security. Robustness is a way to strengthen and gain confidence. The acceptance rate depends on machine transparency. This means the availability of standards and how processes work between consumers, suppliers, and products. Certification costs include installation costs (such as specific hardware or software requirements), communication costs (how much information is required), inactive costs (required installation time) - certification, scalability, and maintenance/support costs. Ease of use means simplicity of accessibility and procedures for computer users, consistent with the existing mechanism and tools. Portability refers to specific customer systems, software, or hardware requirements<sup>16</sup>.

Security refers to the degree to which messages are kept confidential, complete, and not rejected. The online approval period is also important. A typical proof of concept test in proof of concept should be performed at the beginning of the communication between the customer but may be limited to ensuring that the process covers the same aspect using an approved method, passwords, logos, certificates, cookies, etc.<sup>17</sup>

After the initial purchase of a particular product, a verified product ID may not be necessary<sup>18</sup>. The customer will be asked to provide additional product information during the first transaction. However, as consumers become more familiar with the product and buy it again, consumers can reduce the amount of information available. Therefore, the customer is able to tailor the online transaction to their needs by not including product information that uses excessive bandwidth, similarly, as the number of repetitive transactions increases, the risk of collateral decreases. Therefore, you need a good quality assurance system at the beginning of the payment, and if you create it, you will lose the proof of quality<sup>19</sup>.

Digital certificates, which can be created by a Certificate Authority (CA) or indirectly through a trusted third party, have a high degree of authenticity through authentication and approval. However, the first transaction requires a direct transfer. Digital certificates provide a standard process for verifying reliability, relatively low cost, and security through integration with security protocols such as Secure Sockets Layer (SSL). However, because the digital certificate is on the machine, it is not portable, and if the vendor is a CA, the vendor will need special hardware or software.

It makes sense to verify the existence or ownership of signed (certified) documents, and the traditional document verification model relies on a central body being able to issue and verify the documents. But, unfortunately, the distribution of

14 R.S. Sandhu, & P. Samarati, *Op.Cit.*, hal. 241

15 A. Kambil and E. van Heck, (1998) "Reengineering the Dutch Flower Auctions: A Framework for Analyzing Exchange Organizations," *Information Systems Research*, vol. 9, no. 1, pp. 1-19, March 1998

16 Amit Basu, & Steve Mytle, (2003), "Authentication in E-Commerce", *Communications of The ACM*, Vol. 46, No 12, December 2003, pp. 161-162

17 *ibid*

18 Anjan Goswami, Naren Chittar, Chung H. Sung, (2011), "A Study on The Impact of Product Images on User Clicks for Online Shopping", *WWW '11: Proceedings of the 20th international conference companion on World wide web*, March 2011, pp. 45-46, <https://doi.org/10.1145/1963192.1963216>

19 *ibid*

fake certificates currently it had spread everywhere due to the crowd<sup>20 21</sup>.

Blockchain technology provides another model for authentication and certification. Technology certificates are electronic documents, and all digital signatures use digital signatures to generate certificates to authenticate transactions involving particular entities<sup>22</sup>. Certificate means the information provided by the certification body, an organization that maintains a relationship of trust in the application related to the certificate<sup>23</sup>. Electronic certificates can also be set up to trade the information online. Documentation or security through verification of user credentials. A blockchain computer signature differs from a numeric signature that only identifies a draft electronic document or a custom signature drawn on four signatures<sup>24</sup>. Electronic signatures can be easily copied or falsified and do not have a guarantee or policy<sup>25</sup>. Therefore, it cannot trust someone's skills<sup>26</sup> due to the proliferation of fake credentials.

Digital IDs are relatively open authentication systems that can support buyer identification, buyer trust, seller identification, and buyer authentication. In addition, if a financial institution backs the certificate, it also maintains the quality of the customer's information and confirms the customer's credibility. These two types of authentication, as well as supplier quality information and supplier quality trust, are also supported in case of recurring transactions.

Product authentication is the most important mechanism in e-commerce because it ensures the authenticity and quality of the product. As a result, fewer counterfeits and counterfeits are sold here. An effective way to achieve full product certification is to test your product. However, product testing is not a ubiquitous tool to achieve full product certification.

The high cost of testing products in e-commerce for physical products and the difficulty or inability to test in the service sector are limited to digital products. In addition, if they are not carefully planned, they can lead to specific behaviors, as the customer continues to try without buying the whole product itself.

Therefore, a comprehensive and robust ubiquitous product authentication mechanism is currently unavailable. Therefore, sellers should use advertisements to present product quality and urge buyers to purchase the product. This reduc-

es the need to ensure the quality of your product as your achievements are built. In addition, current product certifications usually don't involve trusted third parties, but parties build their own systems.

Governments should create unique laws and regulations governing e-commerce (RUU e-commerce). One of the articles to be embraced concerns regulations requiring e-commerce to implement a set of trade authentication mechanisms to provide digital certificate functionality and protect parties, specifically product authentication, to prevent piracy or counterfeiting. This certification makes it difficult for sellers to sell counterfeit and pirated products. As e-commerce transactions increase, e-commerce legislation becomes very urgent, and a legal umbrella is needed to protect the parties from a series of torts that harm each other.

## CONCLUSION

The copyright infringement phenomenon can influence the economic investment. The investor put a serious attention on the stability of law enforcement in a country. In other words, the government should provide the access to justice for the justice seekers on the copyright infringement cases. In Indonesia, law enforcement against copyright are regulated by Copyright Act No. 28 of 2014. This law enforcement raised the requirements in the form of compensation for criminal and general penalties. Section 113(3) of Indonesia Copyright Act states that the government is responsible for enforcing the Copyright Act. Therefore, the current function of the government is to enforce consumer protection laws, and copyright laws and create e-commerce bills to provide maximum protection to those affected. In addition, issuing business certification systems, product rights, and digital certification should be a key requirement in the e-commerce business. Therefore, it should be included in regulations, especially e-commerce regulations to enforce the establishment technology supports and litigation procedure.

Product Authentication is necessary needed to be included in e-commerce system, as proof checker (validation) and to reduce counterfeits being sold. In other side, it should be supervised by government to make sure that the product authentication has been already effective to give a legal protection or not. Unfortunately, the product authentication needs high funding but it is worthed to provide product certificate in the e-commerce. The product authentication is promising to make e-commerce become more consumer-friendly.

## REFERENCES

- Ahmad, T. (2003). *Cyber law, e-commerce and m-commerce*. APH Publishing Corp. New Delhi.
- Aini, Q., Badrianto, A., Budiarty, F., Khoirunisa, A. & Rahardja, A. (2020). "Alleviate Fake Diploma Problem in Education Using Block Chain Technology" *Journal of Advanced Research in Dynamical and Control Systems (JARDCS)*, Vol. 12, No. 2, pg. 1821, doi: 10.5373/JARDCS/V12I2/S20201225
- 21 Giandari Maulani, Gunawan, Leli, Efa Ayu Nabila, & Windy Yestina Sari, (2021) "Digital Certificate Authority with Blockchain Cybersecurity in Education", *International Journal of Cyber and IT Service Management (IJCSITSM)*, Vol. 1, No. April 2021, pg. 142
- 22 U. Rahardja, D. Andayani, N.C. Aristo, & Z.A. Hasibuan, (2019), "Application of Trial Finalization System as Determinants of Final Thesis Session Results" *IAIC Transactions on Sustainable Digital Innovation*, Vol. 1, No. 1, pg 1-2
- 23 P.A. Sunarya, G.I. Marantika, & A. Faturahman, (2018), "Management Strategy for Distributing Questionnaires and Interview Guidelines in the Research Data Collection Process", *Aptisi Transactions on Management*, Vol. 2, No. 2, pg. 104-105
- 24 E. Febriyanto, R.S. Naufal, & S. Sulistiawati, (2000), "Planning of The Web-based e-Raport Assessment System", *Aptisi Transactions on Technopreneurship*, Vol. 2, No. 1, pg 48-49
- 25 Henderi, Q. Aini, N. P. L. Santoso, A. Faturahman, & U. Rahardja, (2020), "A Proposed Gamification Framework for Smart Attendance system using rule base", *Journal of Advanced Research in Dynamical and Control Systems (JARDCS)*, Vol. 12, No. 2, pg. 1827-1828, doi: 10.5373/JARDCS/V12I2/S20201226
- 26 G. Maulani, A.H. Arribathi, U. Rahardja, M. Hardini, N.P.L. Santoso, (2020) "Information Media in Video Tourism, Art and Historic Building in Tangerang City-Indonesia", *Solid State Technology*, pg. 4550-4551

- Freeman, M.D.A. (2014). *Lloyd's Introduction to Jurisprudence*, 7th ed. London: Sweet & Maxwell
- Goswami, A. Naren Chittar, Chung H. Sung, (2011), "A Study on The Impact of Product Images on User Clicks for Online Shopping", *WWW '11: Proceedings of the 20th international conference companion on World wide web*, March 2011, pp. 45-46, <https://doi.org/10.1145/1963192.1963216>
- Hardy, T. (2002) "Criminal Copyright Infringement", *William & Mary Bill of Rights Journal*, Vol. 11, Issue 1, 2002-2003, article 10
- Henderi, Q. Aini, N. P. L. Santoso, A. Faturahman, & U. Rahardja, (2020). "A Proposed Gamification Framework for Smart Attendance system using rule base", *Journal of Advanced Research in Dynamical and Control Systems (JARDCS)*, Vol. 12, No. 2, doi: 10.5373/JARDCS/V12I2/S20201226
- Kambil, A. & Heck, E. van. (1998) "Reengineering the Dutch Flower Auctions: A Framework for Analyzing Exchange Organizations," *Information Systems Research*, vol. 9, no. 1, Mar. 1998.
- L., Edward, & C., Waelde (2000). *Law and the Internet*, 3rd edition, Oxford: Hart Publishing, pg.186
- Leiboff, M. & Thomas, M. (2004). *Legal Theories in Principle*, 1st edition, Lawbook Co., Sidney
- Matompo, O.S. (2018). "Perlindungan Hukum Terhadap Hak Kekayaan Intelektual Atas Pembajakan di Indonesia", *Legal Standing: Jurnal Ilmu Hukum*, Vol. 2, No.1, March 2018
- Maulani, G., Arribathi, A.H., Rahardja, U., Hardini, M, & Santoso, N.P.L. (2020). "Information Media in Video Tourism, Art and Historic Building in Tangerang City-Indonesia", *Solid State Technology*
- Gunawan, Leli, Nabila, E.A., & Sari, W.Y. (2021). "Digital Certificate Authority with Blockchain Cybersecurity in Education", *International Journal of Cyber and IT Service Management (IJCITSM)*, Vol. 1, No. April 2021
- Prayoga. H. (2019). *Perlindungan Hukum Terhadap Pencipta yang Mengalami Kerugian atas Pembajakan Karya Cipta E-Book Melalui Penjualan Online*, Skripsi Fakultas Hukum, Universitas Jember
- Rahardja, U., Andayani, D., Aristo, N.C. & Hasibuan, Z.A. (2019). "Application of Trial Finalization System as Determinants of Final Thesis Session Results" *IAIC Transactions on Sustainable Digital Innovation*, Vol. 1, No. 1
- Rantung, R.A.. (2014) "Hak Cipta Dalam Jaringan Internet Ditinjau Dari Undang-Undang Nomor 19 Tahun 2002 Tentang Hak Cipta," *Jurnal Hukum Unsrat*, vol. II, no. 1
- Riswandi, B.A. (2014). *Pembatasan dan Pengecualian Hak Cipta di Era Digital*. Bandung: PT Citra Aditya Bakti
- Sandhu, R.S. & Samarati, P. (1996) "Authentication, Access Control, and Audit," *ACM Computing Surveys*, vol. 28, no. 1, March 1996
- Survey 2001. (2000). "CommerceNet 2000 Survey: Barriers to Electronic Commerce,"
- Sunarya, P.A., Marantika, G.I., & Faturahman, A. (2018). "Management Strategy for Distributing Questionnaires and Interview Guidelines in the Research Data Collection Process", *Aptisi Transactions on Management*, Vol. 2, No. 2, pp. 104-105.

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