

A Review: Software Piracy Perception, Regulation and Consumer Perspective in Global World

*Sandeep Kumar Dwivedi**

ABSTRACT

Today's technology marketplaces are quickly getting concerned about cybercrime and copyright. Software piracy is simply the unlawful copying and use of technology in any manner not expressly authorized by the owner of the designer's personal interests, who may be a person, company, or even other entity, as stipulated in the applicable purchase agreement (license). Illegal downloading has grown to be a major worry for many technology organizations as a result of advancements in software design and the Internet. Software theft carries with it incredibly severe consequences for technology companies. Agreements with illegally obtained technology bring in a lot of revenue for pirates. Even though this is commonly the situation, end users and customers do not see it as a critical element since they feel that it is not a severe issue for others. Because of these factors, computer crime has become a significant problem, made even more so by the fast pace of software creation and the abundance of programs on the Internet. This article studied and determined the ratio of pirated software.

Keywords: *Software Piracy; Intention Toward Digital Piracy; Piracy Protection; Open Source.*

1.0 Introduction

It is now absolutely evident that the knowledge economy (KE) is a primary engine of strategic advantage and cross-country growth in the twenty-first century. Software piracy (SP) is the unauthorized replication, dissemination or use of software. It is a lucrative "market" that has attracted the interest of organized crime organizations in a variety of countries. As per the Business Software Alliance (BSA), about 36% of all software currently in operation is hacked [1] [3]. Internet piracy is high often linked with movies as well as songs. Along this SP is a prevalent also frequently overlooked part of the issues, the tag of company often fails to avoid. Computer piracy does not involve a programmer or a professional coder. Any average person with a computer will become a software pirate because they know about the rules of the software. With such a widespread influence, it is important to consider what kind of software piracy is and the dangers it poses [2] [4].

When you buy a professional software kit, an end-user license agreement (EULA) is included to shield the software product from copyrighted material [8]. Usually, the certification specifies that you can run the main copy of the program you downloaded on a single device and that you can make a second copy in case the main is missing or destroyed. You consent to a licensing arrangement when you unlock a software program (this is called a shrink wrap permission), when

**Assistant Professor, Department of Mechanical Engineering, Bhopal Institute of Technology, Bhopal, Madhya Pradesh, India (E-mail: sandeep0183@gmail.com)*

you unlock a packet containing the software files, or when you reinstall [5] [6]. Software piracy refers specifically to full-function consumer software. Time-limited or functional-restricted versions of proprietary applications called shareware are less liable to be hacked since they are readily available. Likewise, freeware, a form of program that is proprietary but freely available free of charge, often provides little opportunity for piracy [7] [9].

In this paper, we analysis the software piracy for educational, global and open source. The rest of this paper coordinated are as follows: In section II literature survey has been given. In section III Types of software piracy are introduced in detail. In section IV discussed that how Companies Prevent Software Piracy. In section V we conclude this article.

2.0 Literature Survey

Life in an age of innovations and digital change means working with machines every day. What is widely understood is that software runs on a system and makes it possible to carry out such activities; both people and businesses are making an attempt to improve software as the market, made up of computer users and companies, is hungry for new applications.

Table 1: SP Related Work

Author	Year	Description
Peukert et al [6]	2017	It analysed the high impact of agreement which is online compliance.
Mo et al. [9]	2017	Investigation of potential and set- up of a revenue share by tracking web content theft for web resources companies as well as manipulate the content and also studied the ex- tent of expense analyses piracy by the ISP, the value of content, and the access fees of the control provider.
Lowry et al. [10]	2017	Implemented a study meta-analysis and analyzed 257 experiments with 126, 622 participants for the examination of major structures and co- variates. The findings of simulations of meta indicate that several
		main groups of variables maximize expectations of consequences, learning from groups, Self-efficiency and prosocial behavior.
K.S et al. [11]	2017	Described safe different performance with a practical performance ability due to this eliminate counterfeit goods from unauthenticated smelters.
Banerjee et al.[14]	2013	Analyzed the effect of an instant rise in the field of piracy and distribution channels, expenditure in research and growth.
Fung and Lakhani et al. [18]	2013	Analyzed alleged infringements of copyright by end-users related to Self-exchange of files and right winged actions.
Rafee et al. [19]	2010	Research focuses on the prevention of internet SP in Arab as well as Middle Eastern countries. Investigational studies have also shown that only confidence and consciousness have contributed to a decline in pirates.
Robertson et al.[7]	2008	It studied the trends of software pi-racy in the 20 countries of Latin America.
Mumtaz et al.[8]	2005	Established a technique for the de- fence of security of electronic con-tent delivery by piracy.
Peitz et al. [22]	2006	Presented a useful summary of the scholarly articles concerned on the financial implications of final du-plication.
Bae et al. [28]	2006	Established a method of SP to explore the brief impact of piracy on use of software and the lengthy consequences of incentives for development.

Software is a consumer good, a non-physical one, and what consumers are paying is the “right to use software” or, in other words, the “license;” what is sadly happening now is that software licenses are frequently stolen. This bad conduct is called “Software Piracy” and the counter-action that more and more software firms are taking to this issue is investing in “License Compliant”.

In recent years, software piracy has been a significant problem and the focus of major research studies. Straub and Collins (1990) described software piracy as a big challenge facing today’s technology industry and proposed deterrents against piracy.

3.0 Types of Software Piracy

3.1 Counterfeiting

This includes the unauthorized copying, sale and/or dissemination of proprietary software with a view to imitating the existing design. For software applications, counterfeit goods come in a number of ways, including versions of compact disks with software inserted into them [10]. Certain components that are commonly counterfeit include contracts, packaging, high security, logos, etc.

3.2 End user piracy

This types of piracy contain copying of software by a person which do not take the authorisation of a software provider. Here several kinds of forms available for end-user piracy, including: Use a certified clone for various installs on multiple machines. Gain from updates without needing a certified clone of the old edition that is being updated [11]. Copying programs on disks with the intention of delivering or downloading them. Having non-commercial, scholarly, or other limited applications without a proper license. Changing the disks outside or inside the office.

3.3 Internet piracy (Net P.)

Online piracy, a very common problem, includes copying and posting software to the web. Downloadable SP applications by people from the online are involved in Net P. [12]. Web app sales apply the common guidelines which is basics for CD formats.

The popular strategies of Net P. include:

- Web marketplace portals which provide consumers Outside channel or forged web-sites;
- Sites that trade software instruction with different persons.
- Platform which permit users to access software free of charge.

3.4 Hard-disk loading (HD)

This is a promulgated act. by a lot of tech vendors [16]. Hard disk loading entails a company downloading unauthorized copies of the software the machines which sell. They normally get that in addition to making their offerings more desirable to potential customers.

3.5 Client-server overuse

This portion of piracy includes the hackneyed of a specific duplicate of the software on a single net. If you’re when someone has a LAN, and you’re downloading applications on this site with a lot of users, Necessary to make sure which user license requires by us to complete

[13]-[32]. For user-server overloading, you overloading and hack the program if the number of people accessing the software is more than the amount that the software requires [15].

Figure 1: Types of Software Piracy

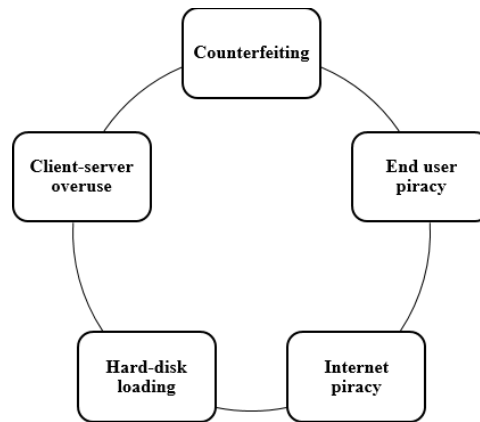
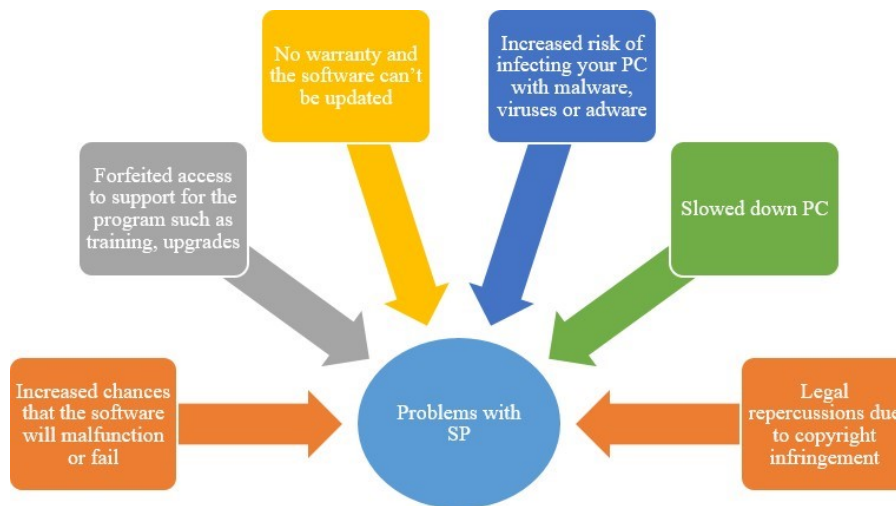


Figure 2: Problems with SP



4.0 How Companies Prevent Software Piracy (SP)

Software piracy (SP) is a significant concern impacting both companies and developers alike. As a result, businesses need to incorporate anti-piracy security mechanisms on their software-based goods [16] [17].

4.1 Legal protection

Many businesses guarantee that their software is legally covered by a user agreement. Let users realize that making illegal copies is against the law would help deter individuals from unknowingly breaching the laws of piracy [18].

4.2 Product key

A product key, a special combination of letters and numbers used to distinguish copies of the program, is the most common anti-piracy device. The product key means that the program can only be accessed by one user per transaction [19].

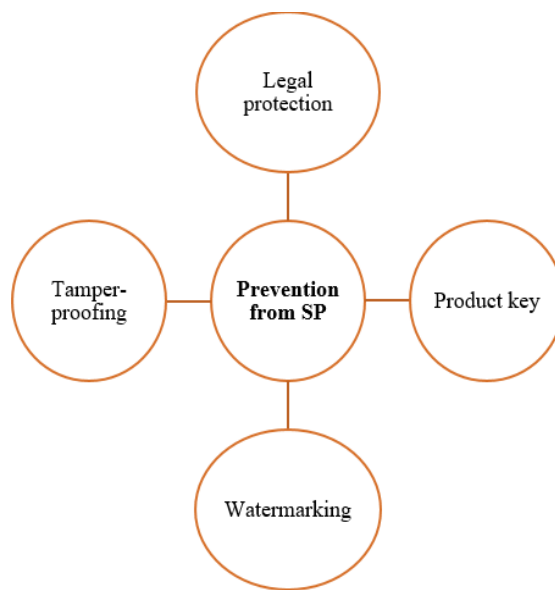
4.3 Tamper-proofing

Any automated applications have built-in protocols that enable the application to shut down and stop running if the source code has been tampered with or changed. Tamper-proofing stops users from modifying the app by altering the code of the program [20].

4.4 Watermarking

Watermarks, brand logos or names are also put on device interfaces to show the goods are legally purchased and that they are not illegitimate copies [21].

Figure 3: Prevention from SP



5.0 Conclusion

In essence, this essay serves as a rudimentary orientation to pirated software. Likewise, it was examined whether privacy awareness in technology is essential for the advancement of civilization. Different forms of pirated software were also covered. Illegal downloading seems to have been the subject of several studies, including how businesses can avoid it, if there is potential to curtail it in the coming on a worldwide scale, etc. On these studies, any scientist or academic may base their own work. If expressed in the vernacular of the general public, this paper has discussed the current situation. In essence, this document offers advice to our scholars and researchers.

References

1. Liao, Zitian, Shah Nazir, Anwar Hussain, Habib Ullah Khan, and Muhammad Shafiq. "Software Piracy Awareness, Policy, and User Perspective in Educational Institutions." *Scientific Programming* 2020 (2020).
2. Machado, Fernando S., T. S. Raghu, Preethika Sainam, and Rajiv Sinha. "Software piracy in the presence of open source alternatives." *Journal of the Association for Information Systems* 18, no. 1 (2017): 3.

3. Mishra, Rishik, et al. "A deep learning approach for the early diagnosis of Parkinson's disease using brain MRI scans." *International Journal of Applied Pattern Recognition* 7.1 (2022): 64-77.
4. Asongu, Simplicite A. "Global software piracy, technology and property rights institutions." *Journal of the Knowledge Economy* (2020): 1-28.
5. Cronan, Timothy Paul, and Sulaiman Al-Rafee. "Factors that influence the intention to pirate software and media." *Journal of business ethics* 78, no. 4 (2008): 527- 545.
6. Limayem, Moez, Mohamed Khalifa, and Wynne W. Chin. "Factors motivating software piracy: a longitudinal study." *IEEE transactions on engineering management* 51, no. 4 (2004): 414-425.
7. C. Peukert, J. Claussen, and T. Kretschmer, "Piracy and box office movie revenues: evidence from Megaupload," *International Journal of Industrial Organization*, vol. 52, pp.188– 215, 2017.
8. C. J. Robertson, K. M. Gilley, V. Crittenden, and W. F. Crittenden, "An analysis of the predictors of software piracy within Latin America," *Journal of Business Research*, vol. 61, no. 6, pp. 651–656, 2008.
9. S. Mumtaz, S. Iqbal, and I. Hameed, "Development of a methodology for piracy protection of software installations," in *Proceedings of 9th International Multitopic Conference, IEEE INMIC 2005*, pp. 1–7, Karachi, Pakistan, December 2005.
10. J. Mo, J. Park, N. Im, J. Park, and H. Kim, "Why internet service provider and content provider do not collaborate via monitoring of digital piracy," *Socio-Economic Planning Sciences*, vol. 60, pp. 1–13, 2017.
11. Agrawal, Subhash Chand, Anand Singh Jalal, and Rajesh Kumar Tripathi. "A survey on manual and non-manual sign language recognition for isolated and continuous sign." *International Journal of Applied Pattern Recognition* 3.2 (2016): 99-134.
12. P.B.Lowry,J.Zhang,andT.Wu,"Natureornurture?Ametaanalysis of the factors that maximize the prediction of digital piracy by using social cognitive theory as a framework," *Computers in Human Behavior*, vol. 68, p. 104e120, 2017.
13. K. S. Kumar, G. H. Rao, S. Sahoo, and K. K. Mahapatra, "Secure split test techniques to prevent IC piracy for IoT devices," *Integration*, vol. 58, pp. 390–400, 2017.
14. K. Dakin, "What if there were no software piracy?," in *IEEE Software*, vol. 14, no. 1, pp. 20-21, Jan.-Feb. 1997, doi: 10.1109/52.566421.

15. C. Wang, M. C. Y. Cho, C. Wang and S. W. Shieh, "Combating Software Piracy in Public Clouds," in *Computer*, vol. 48, no. 10, pp. 88-91, Oct. 2015, doi: 10.1109/MC.2015.317.
16. D. Banerjee, "Effect of piracy on innovation in the presence of network externalities," *Economic Modelling*, vol. 33, pp. 526–532, 2013.
17. Sharma, Ashish, Ashish Sharma, and Anand Singh Jalal. "Distance-based facility location problem for fuzzy demand with simultaneous opening of two facilities." *International Journal of Computing Science and Mathematics* 9.6 (2018): 590-601.
18. B. M. Gaff and G. Hendershott, "So, You Want to Start a Software Company?," in *Computer*, vol. 46, no. 10, pp. 17-19, October 2013, doi: 10.1109/MC.2013.371.
19. S. P. Weisband and S. E. Goodman, "International software piracy," in *Computer*, vol. 25, no. 11, pp. 87-90, Nov. 1992, doi: 10.1109/2.166426.
20. Harekrishna kumar and V.K. Tomar. "Single bit 7T subthreshold SRAM cell for ultra-low power applications" *International Journal of Advanced Science and Technology*, 28(16):345-351, November 2019.
21. W. M. J. Fung and A. Lakhani, "Combatting peer-to-peer file sharing of copyrighted material via anti-piracy laws: issues, trends, and solutions," *Computer Law & Security Review*, vol. 29, no. 4, pp. 382–402, 2013.
22. S. Al-Rafee and K. Rouibah, "The fight against digital piracy: an experiment," *Telematics and Informatics*, vol. 27, no. 3, pp. 283–292, 2010.
23. M. H. Al-Hakimi, A. B. M. Sultan, A. A. Abdul Ghani, N. M. Ali and N. I. Admodisastro, "Hybrid Obfuscation Technique to Protect Source Code From Prohibited Software Reverse Engineering," in *IEEE Access*, vol. 8, pp. 187326-187342, 2020, doi: 10.1109/ACCESS.2020.3028428.
24. F. Ullah et al., "Cyber Security Threats Detection in Internet of Things Using Deep Learning Approach," in *IEEE Access*, vol. 7, pp. 124379-124389, 2019, doi: 10.1109/ACCESS.2019.2937347.
25. M. Peitz and P. Waelbroeck, "Piracy of digital products: a critical review of the theoretical literature," *Information Economics and Policy*, vol. 18, no. 4, pp. 449–476, 2006.
26. Gopal, Ram D., and G. Lawrence Sanders. "Global software piracy: You can't get blood out of a turnip." *Communications of the ACM* 43, no. 9 (2000): 82-89.
27. Siegfried, Robert M. "Student attitudes on software piracy and related issues of computer ethics." *Ethics and Information technology* 6, no. 4 (2004): 215-222.

28. Husted, Bryan W. "The impact of national culture on software piracy." *Journal of Business Ethics* 26, no. 3 (2000): 197-211.
29. Bansal, Kriti, and Anand Singh Jalal. "Robust and effective clothes recognition system based on fusion of Haralick and HOG features." *International Journal of Signal and Imaging Systems Engineering* 11.5 (2019): 288-299.
30. Thongmak, Mathupayas. "Ethics, neutralization, and digital piracy." " *International Journal of Electronic Commerce Studies*" 8, no. 1 (2017): 1-24.
31. S. H. Bae and J. P. Choi, "A model of piracy," *Information Economics and Policy*, vol. 18, no. 3, pp. 303–320, 2006.
32. Shin, Seung Kyoon, Ram D. Gopal, G. Lawrence Sanders, and Andrew B. Whinston. "Global software piracy revisited." *Communications of the ACM* 47, no. 1 (2004): 103-107.