Software Piracy: A Primer

Matthew N. O. Sadiku, Mahamadou Tembely, and Sarhan M. Musa
Roy G. Perry College of Engineering, Prairie View A&M University, Prairie View, TX 77446, United States
Email: sadiku@ieee.org; mtembely@student.pvamu.edu; smmusa @pvamu.edu

Abstract—Due to increasing use of computer and the Internet, there has been a rise in illegal copying of software. Software piracy is the unlawful reproduction and distribution of software. The ease with which software is pirated is creating a vexing problem for software publishing industry. Today software piracy is costing software industry billions of dollars annually in lost revenues. It may even force some companies to go out of business. This paper provides a short introduction to software piracy.

Keywords—software piracy, digital piracy, online piracy

I. INTRODUCTION

Computers and Internet have made unauthorized copying and distribution of software easy and affordable. Digital information can be copied at no cost. Digital copies of texts, music, videogames or photos are practically indistinguishable from the originals. Theft of software has become a major problem is computing.

Software piracy is the illegal, unauthorized copying software. It is one form of computer crime. When you purchase a commercial software package, it is licensed to be used on one computer or by one user. Copying the software for friends and colleagues is illegal and unethical because it violates intellectual property rights. A licensed user is allowed to copy the software for backup purposes only.

People commonly rationalize their use of pirated software. Interestingly, it has been shown that piracy generally increases the total number of individuals using the software. It seems that the anti-piracy laws do not prevent software piracy.

Today, software piracy is a problem of global significance. While globalization provides opportunities for the sale of software, it also enables opportunities for piracy. Saudi Arabia, Ukraine, Indonesia, Vietnam, and China are among the countries where software piracy rates are high. Some researchers have found that corruption affects piracy rates in Africa and Latin America. While software piracy problem could be detrimental to research and development in developed nations, it could be beneficial to developing nations where piracy rates are high because it grants people access to software packages at substantially lower costs.

II. FACTORS CAUSING SOFTWARE PIRACY

Software piracy problem can be solved by identifying the root causes. Why do people engage in software piracy? Several reasons have been proposed for understanding and preventing software piracy.

In the first place, there is a widespread ignorance about what actions constitute piracy and what are the consequences to the industry and violators. Through ignorance, it is easy to violate the intellectual property laws. When people purchase a software, they believe that they own it. In actual fact, what they own is the license to use the product. The software company owns the software. Software piracy is an act of infringement of copyright and a contravention of its license [1]. It may take the form of online piracy (such as peer-to-peer file-sharing), duplicating and selling illegal copies of the software, and client-server overuse. It is harmful to both software industries (loss of potential profit) and consumers (higher prices).

Since personality traits are responsible for unethical behavior, they can be a predictor for software piracy [2]. It seems gender, age, family income, digital literacy, culture, education, and religion (ethical judgment) affect software piracy behavior. Social relationships with friends and family affect intentions to software piracy [3]. Some tend to ignore anti-piracy policies and punishment for piracy. Piracy is not only an economic problem, it is an ethical issue.

Another reason is economic. The higher the cost of the software, the more likely people would copy it. When the software is expensive, people in the middle classes would not be able to afford it. Only the wealthy would buy it. For
example, university students (who are generally poor) are more like to copy software than university employees. Since technology is changing rapidly, some people are reluctant to buy a software that will soon be obsolete.

Controlling and protecting software is hard. To prosecute an online pirate is difficult in many respects. Pirates may masquerade as different users and it is difficult to identify them.

III. COMBATING SOFTWARE PIRACY

Software piracy can be combated either by the passive approach of building a protective layer around the code to eliminate theft or the active approach of blocking execution of a pirated code [4]. One approach of software protection consists of modifying the software with a hardware public key cryptogram system [5]. Some software developers put prevention capabilities in their software that will disallow copying. Anti-piracy policies are costly and should include a database for tracking software.

Deterrence is another form of prevention. Illegal behavior can be suppressed by the threat of punishment. Before getting involved in an unethical engagement such as piracy, people tend to calculate the benefits and risks [6].

In an effort to combat illicit trade in software, several organizations have been formed. These include the Business Software Alliance (BSA), Software Publishers Association (SPA), World Intellectual Property Organization (WIPO), and Software and Information Industry Association (SIIA). For example, the SPA encourages people to call a toll-free number and report software pirates. It conducts unannounced software audits of companies and enforces copyright laws on behalf of its more than 500 company members. The SIIA suggests attacking software piracy through legislation, enforcement, and public education [7]. Educating students (the future professionals, who are mostly using pirated software) on ethical decision-making affects their attitude toward software piracy.

These measures against piracy have been found effective, but only to a limited extent. Efforts to combat piracy are often confined to high profile offenders [8]. Illegal copying of software continues to rise and pirates continue to avoid being detected. The nature of software piracy is changing globally and much of it is taking place with mobile devices.

IV. CONCLUSIONS

Software piracy has evolved into a global business. It is the worst problem facing the software industry today. It is a problem which will not be eliminated, but it can be curbed by a mutual cooperation between developed and developing nations. Each country must enforce their intellectual property laws and ensure that those who pirate software face consequences and are punished. Reducing piracy rates in all nations will generate jobs, increase tax revenues, and boost economy [9].

REFERENCES

ABOUT THE AUTHORS

Matthew N.O. Sadiku is a professor at Prairie View A&M University, Texas. He is the author of several books and papers. His areas of research interest include computational electromagnetics and computer networks. He is a fellow of IEEE.

Mahamadou Tembely received his doctoral degree in electrical engineering from Prairie View A&M University, Texas. He received the 2014 Outstanding MS Graduated Student award for the same department. He is the author of several papers.

Sarhan M. Musa is a professor in the Department of Engineering Technology at Prairie View A&M University, Texas. He has been the director of Prairie View Networking Academy, Texas, since 2004. He is an LTD Sprint and Boeing Welliver Fellow.