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## The Role of Information Technology on Software Piracy, Its Consequences and the Way Forward

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**ABSTRACT:** Software piracy is a critical problem that has been affecting software companies for years. The world has observed quick growth and great success in the field of Information Technology (IT) for the past few years. This gave rise in the increase and rapid advancement of the software companies. Technological advances have made it easy for anyone to duplicate and distribute copyrighted software anywhere, anytime and to anyone. This has not only affected the software companies but also has caused much panic for the content owners. The goal of this paper is to identify how information technology contributes in software piracy, its effects to companies and software owners and the way forward.

**KEYWORDS:** Software Piracy, Information Technology, Software, Copyright

### I. INTRODUCTION

In today's fast-paced and globally connected society, information technologies play an important role and offer solutions to almost every economic and social challenges of our period, they drive innovation and productivity, increase efficiency at work, and make everyday life simple [1]. These same technologies have made large-scale commercial copyright infringement a major form of thefts and fraud. Software piracy has been identified as the worst problem facing the software companies today. It has not only affected the software companies but also has caused much panic for the content owners. The development of technological tools such as computers, software and the Internet has made our lives easier, but abuse of such tools has created a serious issue like software piracy which is now a growing concern for several countries [2].

Software piracy describes piracy as downloading commercial programs without payment, possibly from sketchy websites filled with viruses. In fact, illegal downloads cover only one angle of piracy. Buying duplicated copies of a program or sharing a program with a friend can count as piracy, as installing a program on multiple computers simultaneously often violates the program's license agreement. Whether performed on an individual scale or across a huge corporation, using unlicensed or improperly licensed programs can lead to civil or criminal punishment for copyright infringement [3].

Research has shown that for every amount that piracy takes from a software company, as much also is taken from the revenue of other organizations. Piracy involves numerous factors that affect the pricing and financial health of legitimate corporations. It has been observed that developing countries like Iraq, Libya, Nigeria, and Zimbabwe had rates of pirated software well above 80%; in other words, out of 100 software units installed in 2008, more than 80 were illegally produced, distributed, and sold [4]. The Fourth Annual Business Software Alliance (BSA) and International Data Cooperation (IDC) Global Software Piracy Study reports that 35% of the software installed in 2006

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on personal computers (PCs) worldwide was obtained illegally [1]. Besides promoting the understanding of copyright law and intellectual property, software manufacturers have also tried other proactive methods to protect themselves from losses resulting from unauthorized copying. One of the methods is to make copying difficult through the use of unformatted or oddly formatted disk sectors, laser holes and burns, and special codes. License agreements or lease contracts with probably unenforceable break-seal acceptance provisions have also been used [5]. Despite all these approaches and efforts followed by software manufacturers, policy makers, educators and businesses to stamp out piracy, this problem is still rampant in many parts of the world. Actions have been taken from the supply side to counter piracy, but as long as there remains a healthy demand for pirated software, this issue will continue to persist. In fact, this problem has been further aggravated by digital piracy, which involves downloading from the Internet [6]. Faster transmission speeds have also catalyzed online piracy, since faster connections enable users to send and download larger files (such as software programs) at a faster rate [1]. The purpose of this paper is to identify the role of Information Technology (IT) on software piracy, the concept of software piracy, its consequences and how to remedy it.

## II. THEORETICAL FRAMEWORK

The word software piracy was usually used to indicate any illegal software copying act. The illegal copying of software was raised as a major issue of concern in the academic literature in the mid-1980s, when Richard Mason's seminal paper on the four major ethical issues of the information age specifically cited intellectual property rights as a topic deserving greater study [7]. Obtaining unauthorized copies of computer software, generally known as software piracy, is a prevalent problem in the workplace, the academic community, and among individuals. An independent study commissioned by the Business Software Alliance (BSA), an international organization of software firms, considered software piracy as the industry's worst problem [8]. Inherent features of personal computers make software piracy a unique and difficult problem. Duplication of most software packages requires only simple commands and mouse manipulations. Unlike photocopying an article or a book, the quality of duplicated software is not appreciably diminished. Furthermore, the proliferation of personal computers makes it difficult to enforce the copyright law at the level of individual computer users. Since the existence of antipiracy law does not seem to prevent software piracy, effective measures to address the software piracy problem cannot be developed without knowing the underlying motivations and justifications to pirate software.

### 2.1 Software Piracy

Software piracy has become a global phenomenon, it is the illegal copying of software, whether knowingly or unknowingly. Software Piracy also means the unauthorized utilization or replication of intellectual property (IP) protected software, this act is unethical, as such act may largely change the right of one's ownership towards his/her products and piece of works. Such piracy may involve massive imitative manufacturing and sales for profit or give rise to collective benefit of cost saving efforts, such as Internet peer to peer sharing on downloading and/ or small-scale illegal efforts associated with individual use [9]. Software piracy involves the copying, distribution, sale, or use of commercial software without a license [10]. It is more severe than piracy in most other industries because the nature of software products enables both massive reproductions for profit and individual and organisational copying at a click of the fingertip. As a result, software piracy has been a major global headache for policy makers, businesses and consumers alike due to the uncertainties involving cross-border conflicts, business losses and consumer victimization of viruses.

Software piracy violates copyright agreements. In 2002, 39 percent of business application software was pirated in the U.S and the software industry in the U.S. lost a total of \$13 in 2002 alone. Software piracy can be costly, especially for corporations as it leads to significant losses. There may be arguments that individual piracy may not be unethical as it leads to computer literacy and may even lead to future purchase of the software. However, the dilemma may come in when piracy is done on a large scale, as this will lead to serious losses for software manufacturers, especially those who are small-scale producers. Big companies like Microsoft can hardly feel the loss as they have a way to protect their software but small-scale businesses would greatly be affected as they are likely to incur big losses, which might

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eventually lead to the closure of the business. Small business firms' incentive to continue creating new software is also reduced as they fear their works would be pirated [11].

Everywhere in the face of this earth, the issue of using pirated software is widely talked and discussed by people. Software piracy in campuses is an instance since it is a small community yet has quite big of potential software piracy practice. Software piracy on campuses may be generally divided into two categories. The first occurs when the institution itself is violating copyright law by installations of software programs in excess of the terms stated in the licensing agreement. For example, software that is licensed for use on a single machine is installed on many computers or on a network server, allowing unlimited access. Oftentimes, the school is unaware of the problem as a result of poor or no software management. The second type is commonly conducted by students, it's often takes place on the Internet where students simply give away software programs as one would trade. If the students are using the school's network or computers to facilitate their illegal activity, the college itself may be held liable.

## 2.2 Information Technology

Information Technology (IT) has become a vital and integral part of every business plan. From multi-national corporations who maintain mainframe systems and databases to small businesses that own a single computer, IT plays a role [12]. The use and spread of information technologies has been revolutionized and aided with the emergence and development of computer technologies. Electronic networks have allowed exchange of information but it has also come with new challenges. Rights and responsibilities in the way available information is used have given rise to some ethical dilemmas. Ethical dilemmas greatly affect businesses and especially small businesses that may not have big capital outlays and expertise to deal with ethical dilemmas in the utilization of technologies [11].

Before the rise of the Internet, unauthorized copying of software generally required the physical exchange of disks or other hard media through the mail or on the streets. But as technology has advanced and high speed Internet connections have spread around the world, software piracy has moved from the streets to the Internet.

Generally, Internet software piracy refers to the use of the Internet to:

- Provide access to downloadable copies of pirated software;
- Advertise and market pirated software that is delivered through the mail; or
- Offer and transmit codes or other technologies to circumvent anti-copying security features.

The process can be as evasive as any other illegal activity. Buyers may be directed to one Web site to select and pay for a software program, and then receive instructions to go to another Web site to download the product. This circuitous process makes the pirate less vulnerable to detection. Online software piracy presents serious and immediate threats to software users, software developers and service providers, and society at large. Online piracy also has serious negative effects on other copyright-based industries such as music and motion pictures. While the vast majority of individuals and businesses use software, computers, and the Internet legally, too many people treat the illicit acquisition of copyrighted works online as a minor offense or even as their right. The truth is, those people are breaking well-established laws, causing severe and widespread damage [13].

## III. RELATED WORK

### 3.1 Information Technology versus Software Piracy

The widespread of computers and the internet has provided many advantages to everyday life, but also created new opportunities for unethical and illegal acts such as software piracy. Computers and information technology, altogether with internet and mobile technology, have entered every aspect of modern society and this has revolutionized the way in which information is generated, shared, disseminated and sold. In a very short period of time, computers have become central to the operations of industrial societies. It is difficult to imagine a world without computers now. As the computer technology grows so the issues concerning privacy, property rights, accountability and social values. Unauthorized copying is an example of those issues [14].

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Computers have since the 1970s become ever faster, smaller and cheaper. This led to the availability of personal computers in most homes in the more economically developed countries. By 1995, the public started to realize the potential of the Internet, through the more recent introduction of broadband Internet, most home computers are constantly connected to the Internet at several times greater speeds than only a few years ago. Individuals have received the power to not only manipulate huge amounts of data ever faster, but also to share the data they produce with others over the Internet. Information and communication technology (ICT) has affected in both good ways and bad ways of community life, family life, human relationships, education, careers, freedom, and democracy and so on [15].

As the use of computers and the internet has increased dramatically, so has the illegal and unethical usage of these technologies. Even though Internet has become an essential tool for education and entertainment in life of students, it is widely accepted that the spread of the Internet has facilitated growth of a variety of crimes, such as digital piracy [16]. The advances in computer technology and the internet have made it possible for people to access, store, copy, change and transmit the information much easier and faster than it used to be. However, these advantages have made also unethical behaviours such as software piracy much easier for its users. Software Piracy, which is the unauthorized use or copying of software illegally, has become a major problem for businesses and it is widespread in many parts of the world which led to drain of economy. As the access to use computer grows, the percentage for using pirated software also grows. Software piracy technically covers a great area of ethical principles, as they relate to computers and information technology. This is because people might inadvertently commit the act without realizing that they are ethically/morally/legally wrong. When one buys software, it means that they are actually buying the software license but not the software [14]. Computers, as a result of information technology have merely transformed the ways in which old ethical issues arise and added new stress to old problems. The main reason behind the complicated nature of issues arises from the fact that computers are essentially machines that can control other machines.

The use of technology to make unauthorized copies of content is not new, many of these same problems were encountered with VCRs or Xerox machines. But unlike the analog technologies of the past, today's digital technology allows an infinite number of perfect copies to be made inexpensively from just one original and further allows those copies to be distributed almost without cost around the world using the Internet. Completely eliminating this kind of piracy is impossible. Once one digital copy of software is created without copy protection measures, individuals can quickly distribute it over the Internet and CD until it is widely available. The action that led to people being a part of software piracy could be as simple as using the license number given by manufacturer at the time of purchase, to install the software on multiple systems or pass the number to their friends. Technically the same CD and license number have been used. As people have purchased the physical CD and the license number, they feel that they have the right to use it anywhere they like and any number of times. [17]

Computer technology entices its users to perpetrate crime in the following seven ways according to Richard Rubin,

- **Speed:** Computer allows information gathering and dissemination at extremely fast speeds, reducing the time required to carry out an action. This automatically decreases the chances of detection, tempting possible fraudsters to think that they can easily commit a crime and get away with it.
- **Privacy and anonymity:** The ever-present nature of computer, particularly the internet has an additional value of anonymity, when the user is knowledgeable enough to use the right software package. In addition, it is neither difficult nor expensive to get access to this type of software. All these factors make internet a very tempting environment for committing crime.
- **Nature of medium:** It is extremely easy to copy digital data without erasing or altering the original source in any form, unlike the paper medium. Also, the new copy is rarely distinguishable from the original, which means that little or no suspicion can attach to the stolen copy thereby encouraging piracy.
- **Aesthetic attraction:** Users feel a great sense of achievement on doing a task that is complicated and has major consequences. In case of computer technology, doing such a feat is not as difficult as it would be if such a task was performed manually. For instance, breaking open a bank safe and breaking into the bank's online secure system, offer similar rewards, but the latter is possible by a single technically knowledgeable user.

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- Increased availability of potential victims: The widespread reach of computer networks, ensures that an individual can reach a large number of audience with the same effort, unlike manual frauds. This creates an urge within people to perpetrate crime that would affect an unprecedented audience.
- International scope: Besides the temptation of extending the geographical footprint of the fraud/crime, international crime also has the benefit of falling under a legal grey area. This means that the jurisdiction of the crime is not always clear making criminals think that if they have committed a crime in a different country, they cannot be prosecuted in their own country. A crime without punishment scenario is an irresistible temptation[18].

Among the various illegal practices that weaken the IT sector worldwide, the unauthorized copying, reproduction, transfer, and usage of copyrighted software are among the most significant threats to the IT industry, the software industry in particular in the Middle East and Africa(MEA) region. The MEA region as a whole had a piracy rate of 59% in 2008, but countries like Iraq, Libya, Nigeria, and Zimbabwe had rates of pirated software well above 80%; in other words, out of 100 software units installed in 2008, more than 80 were illegally produced, distributed, and sold. [19]

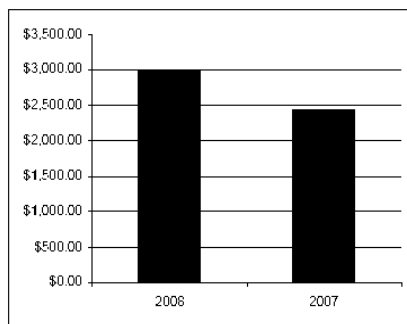


Figure 1: Software Piracy in the Middle East and Africa: Piracy-Related Losses (US\$m). 2008 vs 2007  
Source: [19]

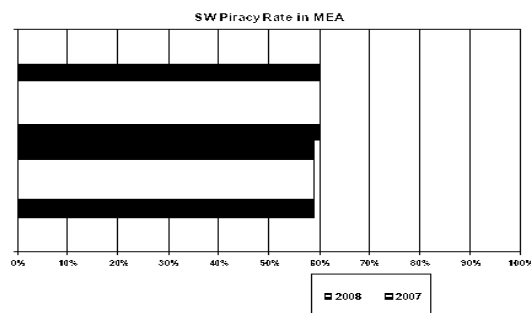


Figure 2: Software Piracy Rate: The Middle East and Africa  
Source: [19]

In recent years, many studies and surveys have been focused more on finding the causes of software piracy[20]. utilized the Theory of Reasoned Action (TRA) to build a model of piracy behaviour which pointed out that an individual's intention towards software piracy was a major factor.

Some key reasons behind software piracy based on different studies are analyzed below.

- Public awareness:  
Lack of awareness in proper use of software is considered to be the key point influencing software piracy. Although software industries provide information regarding copyright of software to computer users by employing licensing agreements as a means of information during the installation process, most of the users do not even bother to read license agreements before moving to the next step in the installation period. Many people misuse software products. They install software in their computers and make a copy of it and give it to others and they do not even realize that what they are doing is illegal and against the copyright law.
- High price of software  
The high price of software is another factor causing software piracy. Countries with low economies are likely to have higher piracy rates when software products are priced higher in comparison with the developed countries. Software products developed in economically rich countries are generally not affordable in poorer countries. The economy of any country has a strong correlation with the piracy rates. According to a global study conducted by BSA in 33 countries as a part of the ninth annual BSA global software piracy study, piracy rate was higher in developing countries than in the developed countries. The study found that computer users in developing and poorer countries are unable to afford the higher priced software products and they look for an alternate way to get them.

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- Legal enforcement  
Several studies regarding software piracy have shown that the piracy rate is mostly higher in the Asian and African countries in comparison with the countries in the North America and Western Europe. This is because computer users in North American and Western European countries are aware of copyright rules and laws. Copyright laws are strictly followed in these countries. Thus, unauthorised reproduction and distribution of such computer programs without the permission of owner leads to criminal proceeding and penalties.
- Social and cultural factors  
It has been found that there is a strong correlation between social or cultural factors and software piracy. These factors refer to the prevailing social structure of a country and the attitudes shared by the members of that society. Several previous studies have shown that collectivist-individualist aspects of the society affect the piracy rate in any country because software is purchased by an individual and is shared among other members of the society.
- Pirated software on the Internet  
There are millions of people around the world who use computer and the Internet on a daily basis. Using computers in our daily lives has made our lives easier and has benefited us in many aspects but it has also brought some problems, and software piracy is one of them. Availability of pirated software on the Internet is one of the major factors increasing the software piracy rate globally. Pirating the software from the Internet is termed as the Internet piracy where the Internet is used to download unauthorized software. Access to high-speed Internet connections makes it easier to download soft-ware programs.

Digital piracy will never be completely stamped out, but it can be dramatically reduced. To do so, though, requires the implementation of a wide array of means, including education of consumers, a range of technical solutions, and of course, more aggressive enforcement of the legal rights of copyright holders. To change social behavior, some content owners have tried to educate users on the impact of piracy through marketing campaigns. These tactics work in parallel with efforts to provide users legal means to access content, such as developing new forms of distribution like the iTunes store or Hulu. [17]

Taking these problems very seriously, industry groups have studied the issue, including the Business Software Alliance (BSA) and the Software and Information Industry Association (SUA), formed by the merger of the Software Publishers Association (SPA) and the Information Industry Association (IIA). These groups have attempted to combat software piracy through a two-pronged campaign, including education and punishment. By spreading information regarding the immoral nature and the illegality of the act, both organizations are attempting to impact the norms and attitudes of computer users. For example, the BSA offers a free sample corporate policy on its Web site, and the SUA provides free auditing software, along with many press releases and reports documenting the potential damage of illegal software copying. The second aspect involves punishment. By advertising their piracy hot lines and the punishments that can be incurred, the BSA and SUA are raising awareness of the fact that people are caught and punished for this crime. Both organizations are also involved in promoting more stringent and up-to-date laws prohibiting illegal software copying. Individual organizations use similar strategies. Many companies now publish ethical codes of conduct, and punishment for illegal software copying can be severe[7].

### 3.2 Forms of Software Piracy

Software piracy comes in different forms. They include the following:- [21]

End-user piracy. This occurs when an employee reproduces copies of software without appropriate licensing for each copy. It ranges from using one licensed copy to install a program on multiple computers (also known as softlifting) to taking advantage of upgrade offers without having a legal copy of the version to be upgraded.

Internet piracy: Intellectual property theft through the Internet has grown by leaps and bounds in recent years, to the extent that virtually every software product can be found on a pirate Web site. These include Web sites that make software available as a free download, Internet auction sites that offer counterfeit software, and peer-to-peer networks that enable the unauthorized transfer of copyrighted programs. According to the Software and Information Industry Association, over 90 percent of software sold through online auctions is pirated.

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**Hard-disk loading:** This takes place when unauthorized copies of software are installed on a computer's hard drive before sale in order to make the machine more attractive.

**Client/server overuse:** This occurs when too many employees on a company network are using a central copy of a program at the same time. If you have installed programs on your local area network for several employees to use, you must be sure that your licenses entitle you to do so.

**Counterfeiting:** This is the illegal duplication and sale of copyrighted material with the intention of directly imitating the copyrighted product. Counterfeit registration cards with unauthorized serial numbers are often included in these packages.

Other forms of software piracy listed by BSA and SIIA are:-

**Unauthorized use of academic software:** Many software companies sell academic versions of their software to public schools, universities and other educational institutions. When the software is labeled to use for academic or educational purposes only, it cannot be used for commercial or other for-profit purposes. Using academic software for private use in violation of the software license is a form of software piracy and it not only hurts the software publisher, but also the institution that was the intended recipient of the software.

**Renting:** It involves someone renting out a copy of licensed software for temporary purposes. In such type of piracy, software is rented to individual computers and returned the original software to the renter. It has always been illegal to rent unauthorized copies of software.

### 3.3 Consequences of Software Piracy

The Internet has made global distribution of content easier than ever, with the ultimate promise of cutting costs by reducing the role of middlemen who produce, distribute, and sell the physical copies. Unfortunately, the digital era also has a serious downside for content producers and others in the industry as it has made it easier than ever for consumers to get access to content without authorization or without paying for it. As computers have become increasingly widespread in modern society so their use in criminal activity has increased, reflecting a recurring pattern in the use and misuse of technology [22].

The harmful effects of software piracy extend to developers, distributors and users. Stealing software is such a simple and easy thing in modern times that it is difficult to consider this as an illegal activity, but it is. While people using or distributing illegal software do not consider about its harmful effects, software piracy has been conclusively shown to have a negative effect on the economy. Software production employs millions of people and accounts for billions of money in revenue. Pirated software causes loss of revenue and tens of thousands of jobs are lost as a result of insufficient revenue. Decreased revenue can directly affect consumers as well because it leads to cost cutting measures in terms of reduced support [23].

The following are ways software piracy affects different stakeholders:- [14].

Users

- Increased risk of spreading viruses.
- Lack of support: Illegal copies of software often do not contain manuals, so users may not productively use the software
- No warranty is provided, so the program cannot be expected to be reliable
- Software developers are less able to produce support to their legitimate customers
- Illegal software can only be upgraded through further illegal actions
- The possibility of hefty fines with criminal and civil proceedings

Software developers and distributors

- Reduces the sales and profits to the legitimate owner of the software package
- Reduces the opportunity for research and development of new/improved software
- Forces the developers to increase the price of the products to make a profit

The risk of using pirated software is also enumerated as follows [24]

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- Quality - It often lacks key elements and documentation, and comes with no warranty protection or upgrade options
- Viruses - Untested, counterfeit discs may be infected with viruses that will damage your hard drive or cripple your network, without the benefit of technical support
- At Work - copying or using illegally copied software at work puts the entire company at risk for copyright infringement. Pirated software that is either dysfunctional or that contains viruses wastes company resources and drives up IT costs.

Pirated software hurts everyone, from software developers to retail store owners, and ultimately to all software users. The illegal duplication and distribution of software has a significant impact on the economy, costing huge amount of money a year in job losses, retail losses, and governmental tax losses, that is, money that would have gone back into local communities. In addition, companies facing loss of revenue due to piracy must pull resources from the development of new technology, and devote it to protecting both their software, and its legitimate users. In the end, software piracy is unfair to everyone.

### 3.5 The Way Forward On Software Piracy

The problem of digital piracy is not new, and content producers have tried many different strategies over the years to mitigate the problem. There is no “silver bullet” that will solve the piracy problem, no single technical or legislative proposal will completely solve such a complex issue, however, there are many “lead bullets” that can help reduce piracy. Just as preventing theft in the offline world requires a combination of industry-backed technical controls (e.g., locks, closed-circuit TV, and anti-theft packaging) and government-funded enforcement (e.g., law enforcement, district attorneys, and courts), the same is true for preventing digital piracy. Much of this effort will likely come from industry. Government, however, has an important role to play in protecting the intellectual property of copyright holders. A strong legal system is the bedrock of commerce in both the digital and analog world. In addition, government should not preclude those impacted by digital piracy, including copyright holders and ISPs, from taking steps, both technical and non-technical, to limit digital piracy.

Individual Internet users who do not perceive personal benefit from anti-piracy measures should be reminded that the long-term availability of software and entertainment in digital formats depends on the financial health and well-being of the producers and artists who create it. To the extent that piracy mitigation systems serve this end, they do offer payback to the individuals who do not have a direct financial stake in the software or entertainment industries.

To achieve the goal of reducing piracy, industry and government should provide various tactics and efforts to curb this problem which include change social behavior, implement technical controls, enforce the legal rights of copyright holders, educate users on impact of digital piracy, and provide users the ability to identify legal means to access software.

The Figure below shows action to be taken to eliminate software piracy according to Business Software Alliance

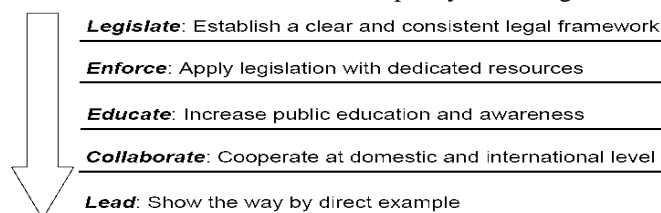


Figure 3: IDC Roadmap to Reduce Software Piracy, Source: [25]

There are five solutions schools need to follow to be software legal or reduce piracy

- Appoint a software manager.
- Create and implement a computer usage policy, including software and Internet access.



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- Conduct periodic software audits.
- Establish and maintain a software log of licenses and registration materials.
- Teach and promote awareness of software compliance.

## IV. RESEARCH METHODOLOGY

To identify the underlying role Information Technology (IT) plays in software piracy the study was carried out in three ways. The first approach was research carried out on journal articles. In the second approach, a personal interview was conducted between the students in academic institution and the sellers of computer software in Enugu State, Nigeria. The third approach is statistical analysis of data obtained from questionnaire distributed to small number of different participants in Enugu metropolis, and it contained 18 questions as seen in Table 1. The questionnaire demanded direct answers from participants.

Table 1: Questionnaire on software piracy

S/N	REASONS TO PURCHASE		REASONS TO COPY	
1.	Needed for workplace or research		Lack legal protection	
2.	Availability of manual		Easy to copy	
3.	Technical maintenance incase of problems		Availability of software on the internet	
4.	Organization's policy		Access to high speed internet connection	
5.	Fear of computer viruses		Wide spread of IT devices	
6.	Weak legal enforcement		Most people I know copy software	
7.	Keep informed of upgrade		High price software	
8.			Lack of awareness	

## V. RESULTS AND DISCUSSION

Software piracy continues for several reasons, however, it is a serious problem. The magnitude of software piracy varies among various participants in Enugu metropolis. Participants used in the research include;- students in academic institutions, private firms, public firms and IT assets sellers.

Table 2: Distribution of participants in Enugu metropolis

Participants	Numbers	Percentage (%)
Academic Institutions	30	71
Private firm	4	10
Public firm	2	5
IT assets sellers	6	14
Total	42	100

### Purchasing Software

The participants were asked to mention their attitude on purchasing software. Figure 4 shows that 62 participants had rarely purchased software, 12 percent had mostly purchased software and 26 percent had occasionally purchased software. This showed that none of the participants responded that they had always purchased software.

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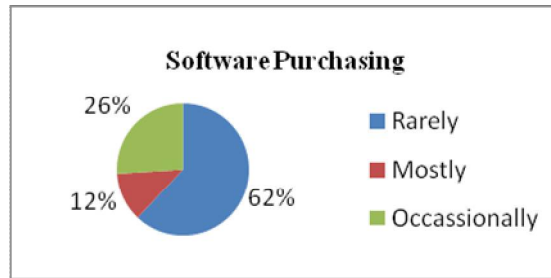


Figure 4: Participants attitude towards software purchasing

## Reasons behind Software Piracy

The questionnaire showed the answers influencing software piracy as seen in Figure 5, more than 80percent of participants responded that free websites download, access to high speed internet connection and wide spread of IT devices. In addition, participants responded that lack of legal protection, high software prices and economic conditions of the country were reasons behind software piracy.

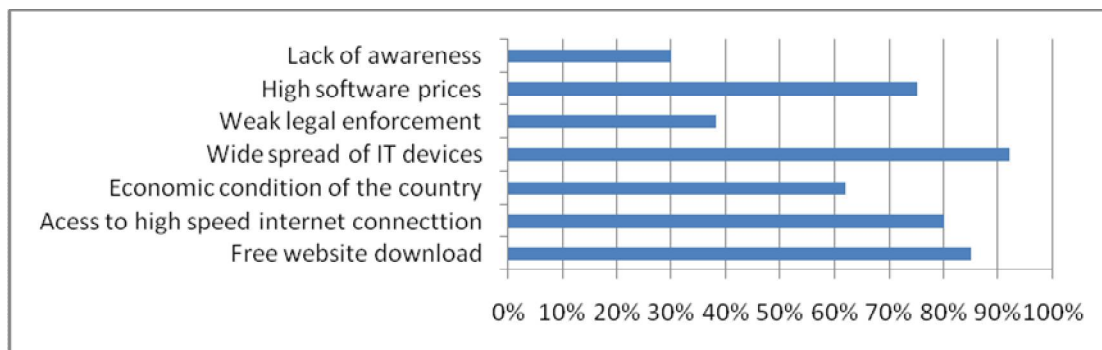


Figure 6: Participants reasons behind software piracy

Sheridan M., 2004 in his findings observed that the Internet has made global distribution of content easier than ever, with the ultimate promise of cutting costs by reducing the role of middlemen who produce, distribute, and sell the physical copies. Users get access to software without authorization or without paying for it. As computers have become increasingly widespread in modern society so their use in criminal activity has increased, reflecting a recurring pattern in the use and misuse of technology. Ali, A. 2010 agreed the spread of the Internet has facilitated growth of a variety of crimes, such as digital piracy. Kizza, 2013 also in his study stated computer technology entices its users to perpetrate crime due to its attributes

## VI. CONCLUSION

This study provided an overview of software piracy and the role of information technology in software piracy. Computers have become the most essential technology to the operations of education, government, enterprises, health services, individuals and many other sectors. Life would have been difficult without computers. As the use of computers and the internet has increased dramatically, so has the illegal and unethical usage of these technologies. Even though Internet has become an essential tool for education and entertainment in life of students, it is widely accepted that the spread of the Internet has facilitated growth of a variety of crimes, such as digital piracy. The advances in computer technology and the internet have made it possible for people to access, store, copy, change and

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transmit the information much easier and faster than it used to be. However, effective reduction in software piracy needs a strong fundamental shift in people's attitudes towards software piracy. People might be unaware of the consequences of software piracy. Public education has been always an important component for any successful efforts. Increasing public awareness programs would work as a great inhibitor to reduce piracy and such programs should be focused on long term goals as social change does not happen instantaneously, but takes a period of time to bring about some effective changes.

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