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SOFTWARE PIRACY IN COMPUTER TRAINING SERVICE CENTRES IN IBADAN, OYO STATE, NIGERIA

Gbotosho Ajibola Sunmade (Ph.D)[1] and Adejumo Adetola Anu[2]

Sola Akinrande Central Library, Osun State University, Osogbo Nigeria

ABSTRACT: *Several software products utilized by many Computer training service centres in Ibadan, Oyo state Nigeria were developed by foreign software companies who are responsible for providing software sales to their teaming customers through software vendors. However many software vendors are by-passed through the illegal activities of pirates who make software products accessible to just anyone at almost no cost. The research methodology employed using empirical method is descriptive survey. It was found from the research that 75% of the respondents who were either software operators or system analysts acquired their software packages legally through the vendors while 25% acquired software by rent. Results also showed that software acquired through software vendors were durable. Moreover respondents agree to policy that to stop piracy outright is possible. The study concludes by recommending to policy on outright stopping of piracy.*

KEYWORDS: Copyright Infringement, Computer Software Piracy, Computer Training Centre, Anti-piracy

INTRODUCTION

Piracy is the unauthorized reproduction or use of a copyrighted book, recording, television program, patented invention, trademarked product, etc (Dictionary.com, 2011). The appropriation or use of anything that belongs to another or that has been assigned to the use of another is an example of software piracy. This geographical criminal act of violence is made possible through narrow channels which funnel shipping into predictable routes. Pennell (2001) posited that these predictable routes, for a long time have created opportunity for piracy. Software piracy is the illegal distribution, or the use of software (Rouse, 2005). It is such a profitable "business" that it has caught the attention of organized crime groups in a number of countries (BSA, 2003). Software piracy rate was reported to have been 36% by Business Software Alliance (BSA). Software piracy causes significant loss of revenue for publishers, which in turn results in higher prices for the consumer (BSA, 2003). Copyright is a legal means of protecting an author's work (Techterms, 2009). It can be regarded as the right granted an author (artist, writer, publisher, musician, performer, photographer, sculptor, filmmaker, architect, or any other creator) over his works. Such rights ensure that the owner of a work receives payment or royalties whenever his work is used or reproduced and also that he is acknowledged whenever his work is used. However, with the war against piracy gathering momentum throughout the country, interested and affected Nigerians are joining the crusade while the pirates have gone underground; copyright owners seem to be winning.

On the other hand, before one actually delves into software piracy in computer training service centres in Ibadan, there is a need to know what Computer is. Computer is any device capable of processing information to produce a desired result (Microsoft Computer Dictionary, 2002). The Dictionary of Communications Technology, defined computer as electronic system which in accordance with its programming will store and process information as well as perform high-

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speed mathematical or logical operations (Gilbert, 1995). Similarly, it defined software as computer program or set of computer programs held in some kind of storage medium and loaded into read/write memory (RAM) for execution. The use of computer is relevant to Information Communication Technologies. Information and communications technology (ICT) is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information (Murray, 2011). Obviously, there are no longer limitations to the transfer of Information and digital divide across national and international boundaries is fading. Interestingly several formats of data including software are transmissible. It can be inferred that computer technology encompasses computer hardware, software and communications. Computer hardware includes semi-conductors and chips that process and store information, e.g. hardware for storage (disk and tape drivers), printers and plotters, display and interactive components (CRT's keyboards, light pens, a mouse, etc.)

An operating system is the program that, after being initially loaded into computer by a boot program, manages all other programs in a computer (Target, 2017). It controls the operation of the hardware and software), software compilers (languages), database management systems, and application software that performs specific business or technical functions communications includes the equipment and software to support transmission, translation of information, routing, and communication code conversion. Technology has made these devices smarter, programmable, and feature rich. Computer technology began around the turn of the century with the telephone and tabulating equipment. World War II saw the development of advanced secret military code translators and processors; some of the first set of computers. Computer technology advanced slowly in the 1940s and 1950s. A series of breakthroughs in transistors, integrated circuits, and large scale integration as well as parallel advances in storage and other areas occurred in the 1960s. The decade of the 1970s was dominated by the large mainframe and minicomputers. The 1980s was the decade of micro-computers and the widespread use of computer technology at homes and in offices. Computer technology had continually undergone rapid changes and improvement in performance and reduced cost. Computer systems in terms of hardware seemed to double in power every three years for the same costs and consume less space and power. The growth in power and performance of hardware has made possible and feasible more complex and capable software. Software made possible by the technology includes artificial intelligence, expert systems, executive information systems, and decision support systems.

The use of Computer

Current applications of computers in education have led to their use in two major roles. The first way is that they perform a major role in management, in which the computer serves primarily as a data storage bank and also a data retriever. Computer management systems can serve at both the administrative and classroom levels. For example, large school systems can store and retrieve data on teacher payrolls, attendance, pupils' records, achievement tests results, etc. All these data handling tasks become less formidable with the aid of a computer.

At the classroom level, the objective of computer management system is to store and process information on each child and to print out this information in summarized form upon demand, so that it is available for teacher decision making. The computer -management system might also contain suggested instructional resources from which the student or teacher could choose

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the next instructional step. With systems of computer management form of administration or instruction (sometimes called computer – managed instruction or MI), the primary function of the computer is the management (storage and access) of large amounts of data.

The second major role the computer plays in education is to serve some functions that influence the instructional process itself. Computer's influence in the instructional process comes about through the computer's role as a decision maker when it affects the direction and specification of a student's learning experience. In directing and providing instruction, the computer makes decisions concerning the assessment of a student's current level of mastery of the curriculum, a sequence of paths through the curriculum, and on a more molecular level, what stimulus should be experienced next within an instructional session. In this latter case, the computer is responsible for the actual instruction experienced by the child in some subject area. In general, then, when a sequence of educational experience is under the control of a computer, or when the computer plays an integral role in the determination of educational experience, the phrase "computer assistance" characterize these conditions. The choice of data fed to the computer in a management system in these conditions has implications for the kinds of instructional decisions made. The contrast between management and assistance is not easily made, since their functions are easily separated. However, for our purposes, computer management in education refers to data storage and retrieval functions, while computer assistance in education refers primarily to influences on the direction and nature of learning experiences.

The general background about the use of the computer in relation to software use and piracy reveals that computer and software are inseparable. Ige (1994) reiterated that Nigeria, being the largest black nation in the world, had a thriving market for local films and other creative products if they were properly developed and consequently, an effective copyright system will have a great impact on the national economy in this direction because of the big market provided for products of copyrights industries. Chief Bola Ige who was delivering a public lecture at the 1994 copyright forum in Ibadan further affirmed that the country has the biggest potential for collecting royalties for intellectual property works used abroad. While supporting the effective enforcement of the copyright law in order to encourage the development of intellectual activity and creativity in the country, he added that everything must be done to bring those who infringe the copyright of creative authors to book. The legal luminary emphasized that individual authors if copyright is enforced, will be stimulated to create more works for the society. They will receive payment of royalties which will enhance life economically for the author or vendor. The effective enforcement of copyright will stimulate competition among creators of copyright works he added. The strict application of the copyright law and necessary sanctions, Ige opined, will put more money in the hands of copyright owners. Consequently more money will be in circulation in the country. On the other hand, too much confusion exists about the protection afforded by the existing copyright act. Drafted in 1956, the act naturally makes no special provision for microcomputer software. It gives protection to literary works and 'writings' and protection of programs may come under this. No wonder Bola Ige forewarned that unless there is an effective copyright system, the cultural environment in the country will be adversely affected. He made reference to what he called the invasion of the country's electronic media by foreign artistes because the skill and talent of Nigerian artistes are not supported and encouraged. Some, however have the impression (disputed by others) that the provisions for literary works will generally apply to computer programs. Retrieval from a computer, on paper, or other natural form is certainly reproducing in a material form. Our legal opinion states that the loading of a disk or tape into the computer is also reproduction. Although opinion was divided at present on the matter, this view of ours would likely prevail.

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LITERATURE REVIEW

It has been found that unavailability of stock and professional incompetence on the part of the operators of the software package industry had contributed to the growth of piracy from the early 70's when it started on a small scale to an alarming scale that has compelled the federal and state governments to launch anti-piracy programs. It is believed that with Nigeria's abundant resources, the country can become prosperous if the copyright industries are developed and managed professionally. More recently, with the accelerated growth of the Internet and the World Wide Web, some of these problems such as piracy have exacerbated, and others like the regulation of offence material have come to the force. In an attempt to reason out the problems posed for the law by the advancements in Information Technology, several authors presented questions like "Does the widespread dissemination of text on networks herald the death of copyright? Should the content of the material on the Internet be regulated? If yes, by whom? What about freedom of information and expression? How is the privacy of the individual to be protected secured amid the increasing capacity for storing, gathering and collecting information?" When in particular, software is the information disseminated, shared or transmitted online, what hope does the software developer have with respect to providing the needed protection on this software as an intellectual property? Are software to be copyrighted or patented? Timothy (2002) concluded that even lawyers can get confused about the extent of intellectual property protection provided by a patent as opposed to, say, a copyright. Within the current copyright law is a codified concept called "fair use" (Section 107) of the US Copyright Law (US Copyright Office, 2016). Fair use is seemingly a loophole in the copyright law that allows someone other than the copyright holder to copy and distribute copyrighted material under certain conditions without first obtaining permission. The United States of America appears determined to take a tough stand concerning this though, and Europe has been moving steadily towards a single policy on copyright, but achieving an international standard could take some years. The prevention of piracy is clearly preferable to seeking redress in the courts, but technical protection systems are said to be difficult to achieve, and even if government enacts laws protecting developers' rights, there will still remain considerable difficulties in enforcement, particularly in certain countries outside the United States and Europe.

The violation of copyrights, patents, trade secrets and the terms of license agreements is prohibited by law in most circumstances (Reynolds, 2010). Even when software is not so protected, such violations are contrary to professional behavior. Copies of software should be made only with proper authorization. Unauthorized duplication of materials must not be condoned. Timothy (2002), contrastingly, stated that fair use is the safety valve of copyright because without it, copyright's constitutional purpose to promote learning, advance knowledge, and promote the progress of science would be useless. The law specifically allows fair use for such purposes as criticism, comment, news reporting, teaching, and scholarship or research. That being said, trying to decipher those purposes and conditions is a daunting and confusing task. In an attempt to provide essential Copyright help for librarians, Crews (2006) asserted that even if copyright law never changed, the activities of educators and librarians have been transformed. There is indication that "librarians steadily digitized and uploaded diverse materials. They launched websites for every program and project. They also downloaded materials from databases, manipulated and incorporated some of them in online information. Therefore, our understanding of copyright and our ability to work with the law can make these important endeavors more successful." Also, Norman (1996) formed a basic guide for Librarians relating to the provisions of the UK Copyright, Designs and Patent Act 1988, affecting librarians and information professionals and offering help on interpreting the main provisions of the law

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with particular references to further and higher education libraries. With respect to the U.S Copyright Law, lending means making available for use, for a limited period and without a direct or indirect economic or commercial advantage through the agency of an institution that allows access of the public for this purpose. Through its publication, the United Nations Economic Commission for Europe (UNECE) stated that "in the case of lending through libraries, the author has only a right to an equitable remuneration. Where the lending is made through public libraries for cultural or educational purposes, no remuneration is due at all." The economic right of an inventor is a peculiar issue when dealing with piracy. The fact that any particular software might bring economic gain to its inventor or developer is an unfair reason a pirate wants to evade the challenges of Intellectual Property Rights (IPR).

(BSA, 2010) opined that reducing software piracy by 10 percentage points in four years would inject more than $142 billion into the global economy, create nearly 500,000 new jobs and generate close to $32 billion in new tax revenues for governments. In addition, Neville (1996) reported the 4th London International Right Symposium in March 1996 on how to best ensure international copyright protection for electronically conveyed works, which focused on: prospects for agreements on regulation of digital transmissions; the Internet and the right of reproduction; proposed amendment of article II of the Copyright directives (officially referred to as the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society). By legally granting the author the right of telecommunication of his work to the public, tracing the user of his work, and applying a levy on computers and public telecommunication forms a strategy for rewarding the author of a copyright work in the digital environment.

The world has evolved into a global village mainly because of the Internet. Computers and networks can now connected across different geographical locations. Moreover digital contents including copyrighted works can be shared. Spender (2009) affirmed that those sharing digitally created works have adopted a ‘copyleft’ approach that challenge Intellectual Property laws and are supportive of a public domain hosting of accessible cultural works. They have contended for less stringent legal controls over copyright works and for a new intellectual commons in which knowledge, information and entertainment products are shared, rather than privately owned. Having the correct concept of copyright is essential for avoiding any infringement while using a copyrighted work. For example, though the doctrine of fair use of copyrighted work in relation to Digital Millennium Copyright Act specifies that for specific purposes such as commentary, criticism, news reporting, research, teaching or scholarship, the use of a copyrighted work is legally permissible. If the copyright holder does not agree that the use of his or her work qualifies as “fair” when permission is requested by the one who will use it, then legal actions can be taken against the “unfair” user (DMCA, 2018). The rewarding benefits from use of the copyrighted work of a copyright holder can explain his or her economic security from unfair use. The security of a copyrighted work is important to a copyright holder. Information commerce is a business activity amongst several parties where information carries value, and is treated as a product (Sibert, et al., 1995). By tradition, though there are several methods to secure the transmission of data from one point to another, there are no persistent protections. Protection of all of the components of information commerce, across all parties in a transaction value chain is however necessary for a robust electronic infrastructure. According to Sibert, et. al., (1995), a prerequisite to have in a secure environment is a cryptographically protected container of packaging information and controls that enforce information use right. A description of such a container is referred to as the DigiBox container. Electronic Publishing Resources, Inc. submitted initial specifications for the DigiBox container to the American National Standards

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Institute (ANSI) Information Infrastructure Standards Panel (IISP) through the Electronic Publishing Task Force (EPUB) in the User/Content Provider Standards Working Group (WG4). European Commission started certain projects in December 1995, aimed at managing access and protection for intellectual property, rights of information producers while bearing the access needs of users in mind. These were expected to represent a spectrum of copyright interests, including; education, librarianship, and information science; information technology, and telecommunications (Keates, 1995). The word IMPRIMATUR – (a Latin word for "let it be printed" could be used to describe one of the projects, connoting the authoritative approval of a person who has power to grant use or non-use of his copyrighted work. The intellectual multimedia property rights model and terminology for universal reference (IMPRIMATUR) project involved 16 partners with a network server in Italy.

The Community Research and Development Information Service (CORDIS) in Europe funded the Copyright in Transmitted Electronic Documents (CITED) project. The European Commission stated that CITED aims to cover the needs of both users and information providers across the areas of software, data/databases, information bases, electronic publishing, video/TV, and audio recording. The CITED solutions aim to be carried out across national boundaries, and to be applicable for all national legislations (European Commission, 2017). Besides these efforts, the US patent and trademark office has proposed new guidelines that remove some of the barriers to granting patent on software programs stored on floppy disks, CD-ROMS and other memory devices. This is of interest to software developers in the light of recent US appeals court decisions restricting the scope of federal copyright protection for computer programs that offers a brief summary of these developments and suggests some areas of concern. Though organizations tend to secure their Information Technology (IT) infrastructure, each of them would still have to be confident that the IT systems they connect with outside of their own infrastructure can be trusted when data move from one place to another. It is in this light that Avizienis, et al., (2004) submitted that individuals and organizations are developing or procuring sophisticated computing systems on whose services they need to place great trust. Since breach of security is a kind of breach of trust, if such external IT environments are insecure, breach of security during systems' interactions might also engender serious threats to the IT systems in the working environment.

In 2005, ChoicePoint, a large data broker, admitted that it had sold personal data on over 160,000 people to phony companies established by identity thieves (Los Angeles Times, 2006). Since then, other companies have announced data break-ins and data leaks. Organizations would like to obtain some proofs that IT systems of their business partners are secure before they link them up with their individual systems. Such a proof can only be given through some security evaluation and certification process. Computer users need to identify themselves by log in and password procedures, but hackers may try to bypass these by using brute force and dictionary attacks or Trojan horse systems. In discussing the best strategy to combat the latter technique, other data protection measures include the use of photographic, optical, or magnetic ID cards. Biometric control methods such as finger pointing, retina scanning, voice recognition and keyboard rhythm are also possible. The common occurrence of computer crime and vandalism is expected to cause data processing and systems managers to examine safeguards such as user access passwords, implement audits of processing systems or update virus detection programs. Similarly, Forcht and Wex (1996) acknowledged that many prospective business users are wary of the Internet because of the existing and potential security loopholes. Indicated an overview of the security problems and solutions and concludes that doing business online involves some risks like any other business transaction. But if attention is devoted to deploying secure

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procedures, it is no riskier than other business practices. If electronic networks generate distribution mechanisms capable of undermining the traditional model of publishing, what are the implications for establishing copyright practices (McKnight, 1996)? It is in seeking to answer this question from the viewpoint of academic authorship, in particular, that of the academic who chooses journal as vehicle for ideas dissemination that this research was conducted.

Objectives of the study

This study is concerned with examining software piracy in computer training services centres in Ibadan. The objectives, therefore, are:

1. to determine the number of years put in by those who are involved in computer training, business and educational training services,

2. to access the working experiences of the computer operators and determine the type of technologies adopted at their computer training service centres for information processing and retrieval,

3. to investigate how they acquired and selected their software packages and identify those software packages that lasted longer. And finally, know if it is possible to outrightly stop piracy on a large scale.

RESEARCH METHODOLOGY

The design adopted for use in this research is the descriptive survey which is one of the empirical methods of research methodology. This method according to Nwankwo (1984) is to:

(i) collect a detailed information that describes existing phenomenon.

(ii) identify problem or justify current condition and practices.

(iii) make comparison and evaluation.

(iv) determine what others are doing with similar problems or situations and benefit from their exposure in making future plans and decisions.

This method is adequate for collecting necessary information that is required for the present study concerning software piracy in computer training services center in Ibadan.

Sampling Procedure

A sample is a portion that has been selected for the study in order that the characteristics of the population can be inferred from the findings in the sample. It is necessary to take sample for;

(i) accuracy of measurement and limited resources and,

(ii) time constraint that may make the study of large group impossible.

The subject of this study is focused on the system analysts and system operators in the computer service training centers. Their population was selected by a random sampling method using a random table in the three computer training centers under study.

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(i) Lizzy Jazz Venture computer training center,

(ii) Comfortech computer training center, and

(iii) UI Venture computer training center, University of Ibadan.

The respondents were evenly distributed among the three computer training institute. The entire population of the members of staff of the three computer institutes will be too large for the time available for the project, and also the financial implications of such number of staff. However, to ensure that the data are representative of the entire population, the researchers have made use of the random sampling by selecting two members of staff from each of the three computer institutes.

Instrument for Collecting Data

For the study, questionnaire and interview techniques were used. The questionnaire is for the system analysts and system operators. Section A contained demographic information of the staff. Section B contained questions on their year of experience, the type of software they use, where they purchased their software packages, reasons the original vendors were by-passed, and suggestions towards software piracy in their organization.

1) Interview Method

Structured interview method was used in the investigation which was to verify and at the same time amplify information received from staff questionnaire.

The structured interview focused on the problems they encounter in acquiring and selecting their data; the differences between those software packages bought from the original vendors and those from pirates; and how easy it is to stop outright piracy on the large scale.

2) Questionnaire Administration

The copies of questionnaire were administered to the system analysts and the computer system operators in the three computer training service centres in Ibadan. On the fifth and sixth day, the documents were retrieved.

3) Data Analysis

The aim of this research is to find out software piracy in computer training service centres in Ibadan. To this end, copies of the questionnaire designed for this study were administered to the staff of computer training institutes in Ibadan. However, out of the total number of six questionnaires that were administered to respondents, four were returned, thereby giving a response rate of (66.7%) while two of the questionnaires were not properly filled.

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RESULTS

Table 1. Age demographics of respondents

Age of respondents	No of respondents	Percentage
31 – 40	3	75
41 – 50	1	25
Total	4	100

Table 2. Years of experience of respondents

Number of years put in by those involved in computer training service center	No of respondents	Percentage
6	1	25%
4	2	50%
4	1	25%
Total	4	100%

Table 3. Means of software acquisition and selection

Acquisition and selection of their software packages	Number of respondents	Percentage
Vendors	3	75%
Hackers	-	0%
Rent	1	25%
Lease from third party	-	0%
Total	4	100%

Table 4. Software Durability

Durability	Number of respondents	Percentage
Those from original vendors	4	100%
Those from hackers (pirates)	-	0%
Total	4	100%

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Table 5. Indication of possibility to stop piracy

Stopping of outright piracy	Number of respondents	Percentage
Yes, it is possible	4	100%
No, it is not possible	-	0%
Total	4	100%

DISCUSSIONS

Table 1 shows the age distribution of the respondents. It reveals that 3(75%) of the population are between 31- 40, while 1(25%) was between 41- 50. This class of staff between 31- 40 represents a strong workforce in the computer training institutes and makes a difference in the productive capacity of the institutes. Table 2 reveals the number of years put in by those involved in computer training service center. The result shows that 1(25%) had put in 6years, and 2(50%) had put in 4years while another 1(25%) had put in three years. It was observed that the highest number of respondents had put in 4years. Table 3 shows the different means of acquisition and selection of software packages in use at the computer centers. More of the respondents purchased their software through software vendors (right source). This constituted 75% of the respondents. 1(25%) of the respondents obtained software through rent, while none of the respondents obtained software through hackers or lease from third party. Table 4 shows that all respondents are in favour of the fact that the software packages purchased from the original vendors are more durable and last longer. There were no respondents confirming use of pirated software. Table 5 shows that all respondents agreed to the possibility of stopping piracy outright.

CONCLUSIONS

Piracy, being an illegal appropriation or use of anything that belongs to another or that has been assigned to another's use, is not to be encouraged. It is noteworthy that if the pattern of software piracy is maintained such that the act is sustained at zero level, copyright owners of software will earn more money, and the effect will be improved cash flow in the country's economy. Without effective piracy control, a nation's economy and software industry will be negatively affected. Also from the research, it was discovered that most of the computer analysts and operators were males, and their age ranges between 31 - 40 years. Most of them are married and they have been in the field for at least four years. The technologies their computer service centers used for information retrieval were CD-ROM, microcomputer and magnetic disk. The type of software packages their computer training service centers used for information processing were TINLIB, word-processor, MS-DOS, SPSS and CDS/ISIS. Structured interview revealed that most of them had computer training before joining a business concern or starting their private computer firms. Similarly, a lot of them purchase their software packages from the original vendors or lease from third parties. They also believe that the services of the pirates are not legal.

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RECOMMENDATIONS

In order to discourage piracy, having observed a lot of wreckage perpetrated by pirates, the following recommendations are made:

1. The exchange rates at which these software packages are purchased are too expensive. Therefore, the government should maximize efforts at strengthening the Naira against the high exchange rate so that very affordable software price can discourage piracy.

2. Secondly, the original owner of software should secure their code data from unauthorized access by using versatile techniques of programming, coding and deploying their software in ways such that piracy attempts are frustrated.

3. The computer operators should purchase their software packages from original vendors so as to get the maximum output of use.

4. Most software programs need to be provided with stronger encryptions and proprietary ciphers beyond serial keys and offline registration systems.

5. It is risky to purchase software packages from the pirates/hackers because their program can interfere with the smooth running of computer systems, cause shortage of time and output and hence affect effectiveness and efficiency of their users.

6. Finally, in rating the software packages bought from original vendors against those from the pirates, it could be deduced that the original vendor software last longer than the pirated copies. Also, there is usually product support and technical assistance from vendors of original software in case there is any trouble with software use, which is not obtainable with pirated versions.

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