ANTIPIRACY PRACTICES AND THEIR EFFECTIVENESS ON FIRMS PERFORMANCE IN ONLINE FIRMS IN NAIROBI, KENYA

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DECLARATION

This research project is my original work and has never been submitted for an award in any other University.

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This research project has been submitted with my approval as the University Supervisor.

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ACKNOWLEDGEMENT

DEDICATION

I dedicate this project to my beloved parents Arch. Murimi Nguuri and Mary Wanjiru for their patience, understanding, support and encouragement as I pursued my MBA. I also dedicate this project to my beloved brother Mark Kinyua for his support during my studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATION

AAP	Association of American Publishers
B2B	Business to Business
B2C	Business to Consumer
B2G	Business to Government
BSA	Business Software Alliance
C2C	Consumer to Consumer
CIO	Chief Information Officer
DVD	Digital Versatile Disc
DP	Digital Piracy
ICT	Information and Communications Technology
IDC	International Data Corporation
ISP	Internet Service Provider
IT	Information Technology
MEA	Middle East and Africa
P2P	Peer to Peer
SD	Standard Deviation
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TRIPS	Trade-Related Aspects of Intellectual Property Rights
WIPO	World Intellectual Property Organization

ABSTRACT

This study embarked to find out the effectiveness of Antipiracy Practices on the performance of Online Firms in Nairobi, Kenya. The study was guided by research objectives as follows; to establish the extent of Piracy practices in online firms in Kenya; to establish Antipiracy Practices adopted by online firms in Kenya; to establish the challenges faced by online firms in Kenya when undertaking Antipiracy and to determine the effectiveness of adopted antipiracy practices on performance by online firms in Kenya. A descriptive correlation cross-sectional research design was adopted by the study when collecting data from the respondents. The study involved a sample of 30 online firms in Nairobi. The primary tool for collecting data was questionnaires which were administered by the researcher to allow for further probing on issues that were not clear. The data was analyzed via descriptive statistics, regression analysis and correlation analysis with the aid of SPSS 20.0. The findings show that Online firms in Nairobi, have adopted specific antipiracy practices aligned to their business strategy in order to reduce the threat of piracy and these practices have significantly contributed to the performance of online firms positively hence increasing profitability and revenue through effective implementation of antipiracy practices. The challenges online firms grapple when undertaking antipiracy should be addressed by the industry, government and consumers as a whole. From the correlation analysis, it is evident that there is a relationship between adoptions of antipiracy practices on online firms performance. Adoption of antipiracy practices by firms is seen to positively impact performance outcome.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Technology has turned out to be an essential component of modern day societies and economies across the world (Boulton et al., 2000; McGarvey, 2001). Technology has changed the competitive landscape and made quick adaptation crucial not just for success but longetivity. This has led to unprecedented transformations in the business world, communication, social interactions, research and education, governance, philanthropic pursuits and many others in life (St.Amour, 2012). The need to go digital by businesses and society today has been embraced due to peoples' desire to have information instantly at their fingertips. According to Forrester (2013), 70 percent of the companies that were on the Fortune 500-list a mere 10 years ago have now vanished. That is double the turnover seen just two decades ago. According to Kirschner (2014), to remain ahead in the digital economy, businesses must weave digital agility into business strategy and evolve in the first moving digital world.

Increase and ease in usage of technology today, has led many businesses to recognize a need to use online platforms to sell their products and services. Thus giving rise to purely internet-based businesses now commonly referred "internet based firms" or "online firms" a name that is applied to an organization that conducts 'most' of its business online, since such businesses also engage physical logistic systems (Schultz, 2009).

Online firms promise to be the impetus behind the latest trend of economic growth (Mariotti & Sgobbi, 2001). On the positive side, online firms have helped businesses to cut back on transactions, sales, advertising and marketing costs. Additionally, they are facilitating businesses to access international markets efficiently twenty four hours per day, seven days per week, and three sixty five days per year. Conversely, widespread use of internet by online firms may have ramifications for intellectual property rights thus leading to piracy. Castro, Bennet and Andes (2009), state that as businesses continue to use online platforms; this facilitates the flourishing of piracy due to attractive pricing of pirated products, inadequate reinforcement of the law and unethical consumer behaviour.

1.1.1   Piracy

According to Ping and Chang (2004), piracy is the unauthorized usage, transfer, copying and reproduction of copyrighted software. Piracy entails the violation of license agreements and transpires when you install, download, file share, issue or copy digitized data such as entertainment media and software programs with no consent from the owner or inventor. Global piracy has an effect on an extensive-scope of digital content such as; e-books, movies, software, music and games. In Kenya today, it is among the major threats to the ICT industry.

Piracy causes negative global impacts on revenue loss such as music, software and employees earnings. Rights holders therefore have to take a proactive and wide-ranging methodology to combat online piracy, by identifying and scrutinizing unlawful downloading across a broad range of Internet channels such as P2P networks, blogs, video and live streaming sites, user generated content and use-net services (Reuters, 2015)

There have been several studies on piracy over the years, Panthiere (2005), made a study on the persistence of piracy and recognized the problem of piracy in 'cultural industries' that is, books, multimedia and music. Kimi and Belle (2008) also focused on a study on factors influencing South Africans attitude towards digital piracy. They suggested that digital piracy is a major issue that needs to be addressed thus leading to the necessity to set up antipiracy measures.

1.1.2   Antipiracy

Antipiracy is the process of setting up measures to safeguard against software, data and digital piracy according to Belleflamme and Peitz (2012). Several forms of antipiracy include; education, legislation, technical controls, collaboration and leading.

Various studies have been undertaken on antipiracy include that by Mulwa, Mutua and Wamwiri (2013) who proposed remedies to come up with antipiracy policies in developing countries which consist of appropriate legislation, educating users on effects of piracy, enforcement of the law towards software pirating, bringing down prices of genuine software, establishment and execution of computer usage guidelines. Ibrahim (2008) also did a study on software piracy in Egypt. The results showed that relying on legal enforcement alone does not always reduce the rate of piracy.

Success of antipiracy will be experienced due to effectiveness of antipiracy practices. Sudlers (2013) describes effectiveness of antipiracy as the extent an organization enjoys reduced costs, reduced piracy levels, increased profits and execution of people who pirate. Effectiveness of antipiracy practices therefore, will be a benchmark to measure how practices put in place have been achieved by firms.

1.1.3 Challenges Online Firms Face when Undertaking Antipiracy

When undertaking antipiracy, firms face many challenges. Kimi and Jean (2008) stated that piracy lingers as a grey area for a lot of people as they are fallacies whether the act of pirating is acceptable or unacceptable. A persons' attitude towards piracy appears to be influenced by many factors including lack of perceived significance to the subject of piracy as well as their values. This becomes a huge issue when firms are undertaking antipiracy.

According to Taylor et al. (2009), there are many documented challenges associated with undertaking antipiracy. One such challenge is lack of government support when online firms are undertaking antipiracy practices. Wang et al. (2003) stated that education and creating awareness in developing countries is a major issue because mechanisms have not been put in place and if they have; there is lack of enforcement. Belle et al. (2008) suggest that government should initiative, take part creating awareness about the issue and enforce laws in order to stamp out piracy.

Lau (2006) also recognized that attractive pricing of pirated software whereby the original software cost of extremely high compared to that of pirated software sought a huge problem to firms. Moreover, digital content users in numerous developing countries are not informed of the legal repercussions of pirating and they see naught wrong whether they use pirated or original versions of digital content (Theo, 2004).

1.1.4 Online Firms in Kenya

Online firms are companies that conduct their processes on the internet according to Search CIO, (2014). The electronic processes include processing payments, buying and selling products, serving customers, collaborating with business partners', supplies and services, managing production and sharing information. Firms that operate online include business to business

(B2B); a firm that provides services or sells products to other firms, business to consumer (B2C); a firm that provides services or sells products to consumers, consumer to consumer (C2C); a consumer that directly sells to consumers and business to government (B2G); a government that buys or sells goods or services or information to or from business or individuals (Njihia, 2010).

As reported by Paysure (2015), Kenya is rated as second in the list of the top seven countries predicted for technology and online business growth in the region, after Senegal. Kenya Business Review reports that the country now has more than 22 million internet users – more than double the number online just four years ago – and there are now 31.8 million mobile phone subscribers. Organizations in Nairobi, Kenya whose products are trade online include Jumia, Pesapal, Closet49, Eatout.co.ke, and Institutions of higher learning and electronic music stores such as Mdundo.

Online firms operate globally in a knowledge based economy which is very competitive in terms of time, a highly flexible environment with location independence, low cost and high will to learn. Fitzgerald and Cormack (2015), state that there is a task for business in society to innovate and deliver services and products, use efficient resources for value creation and carry out functions appropriately so that they perform profitably and are accepted by society. Online firms have impacted the society by economic stimulation through foreign direct investments by job creation, transfer of skills, knowledge, education and training. For medium and small enterprises, there has been access to international practice, suppliers and investment possibilities. For consumers; they have opened up markets, created choice, offered quality products and services at affordable prices (Penn et al., 2015).

As online firms make contributions in society, they are faced with challenges due to their nature of operation. The main pressures that affect the online firms are the technological environment, the societal environment and the economic environment. The technological environment pressures include innovation, information overload and e-commerce; the societal environment pressures include social responsibility, government regulation, shrinking budgets or subsidiaries and ethics while the economic environment pressures include global competition, changing workforce and powerful consumers.

1.2 Research Problem

Antipiracy, is gaining interest in the "online companies" platform with the growing ease in use of technology. According to Business Software Alliance (2006), it is predicted that thirty five percent of all personal computer software in the year 2006 was pirated, instigating a deficit of almost 40 billion US dollars worldwide to the software industry, hence weighing down the global economy. In a progressively digital world, it is important that individuals and firms are able to protect their digital assets by adopting antipiracy practices because the economic threat of digital piracy is considerable.

Globally, a number of studies have been done on piracy and include a study on persistence of piracy by Panethiere (2005) who found out the problem of piracy occurs mostly in "cultural industries" – industries that deal with books, music and films. Ibrahim (2008) also conducted a study of software piracy in Egypt and found out that enforcement can be used to counter piracy but relaying on legal enforcement alone does not always reduce the rate of piracy.

Elsewhere, a study conducted by Kimi and Jean (2008) on factors influencing South Africans towards digital piracy revealed that digital piracy is a major issue that needs to be addressed and suggested that the government should take part in creating awareness in order to stamp out piracy. The study also recognized that there was a significant relationship between an individuals' attitude and piracy. Sudlers (2013) undertook a study on long term and short term effectiveness of antipiracy enforcement actions and law in Australia and found out that while there was mounting proof of the result film piracy had on studio profits; proof on the impact of antipiracy legislation was inadequate following the enactment laws that restricted access to content that was pirated and closure of websites that provided illegal content for download.

Online firms in Nairobi, Kenya are facing the challenge of piracy which is most affecting the publishing, music and software industry thus need for knowledge on the study. In Kenyan context, very few studies have been carried out on piracy, antipiracy and the effectiveness of antipiracy practices relating to online firms. A study by Omondi (2011), sought to establish how enforcement of intellectual property right laws reduced piracy. However, enforcement alone cannot effectively address piracy, there is need to use other measures concurrently. Moreover, Munga (2013) conducted a study to establish the role of mobile technology in anti-counterfeit

initiatives in Kenya. The research only addressed solutions for physical products and proposed use of mobile technology to authenticate products. Besides, Mulwa, Mutua and Wamwiri (2013) proposed remedies to piracy by coming up with antipiracy policies in developing countries which include proper legislation, enforcement of the law, educating users, creation and implementation of policies.

It is evident from the studies that there has been very limited focus on piracy issues especially within the online firms yet this a major issue today. Therefore, this study was aimed at filling this gap and consequently establishes the extent of adoption of antipiracy practices online firms in Nairobi, Kenya. Further, in view that antipiracy practices have not been fully adopted one may question whether there are benefits accrued from implementing antipiracy practices and may also need to find if there are factors limiting the full implementation of counter piracy measures. This study will answer the subsequent questions: What is the extent of piracy practices in Nairobi, Kenya? Which practices are being undertaken to counter piracy? What are the challenges associated with antipiracy practices? What are the associated benefits brought about by the effectiveness of antipiracy practices on performance in online firms in Nairobi, Kenya?

1.3 Research Objectives

General objective: To investigate piracy and antipiracy practices used by organizations who handle their products online "online firms" or "e-businesses" in Nairobi, Kenya.

Specific objectives:
   i. To establish the extent of piracy practices in online firms in Kenya.
   ii. To establish antipiracy practices adopted by online firms in Kenya.
   iii. To establish the challenges faced when undertaking antipiracy by online firms in Kenya.
   iv. To determine the effectiveness of adopted antipiracy practices on performance by online firms in Kenya.

1.4 Value of the Study

The research study will add to the existing body of knowledge on antipiracy and recommend areas in favour of additional research and analysis by academicians in the future in order to draw important conclusions by information technology students and practitioners.

This area has not been widely looked into and therefore researchers and academicians in institutions of higher learning will use this study to gather information and gain insight on the issues of piracy and antipiracy practices and its contribution to the economy.

The results from the study can be instrumental to online firms to establish the effectiveness of antipiracy practices on performance and challenges faced when undertaking antipiracy in online firms in Kenya. The results can also be replicated by other I.T firms which may not necessarily be online in nature since piracy cuts across all sectors in business and it affects their competitiveness in the same way.

The study will also help government have a better understanding on the challenges online firms face in order to assist them in the fight against piracy.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter concentrates on a broader view of theories, piracy practices, antipiracy practices, the effectiveness of antipiracy practices on online firms performance, the challenges of implementing antipiracy practices, an empirical review and the conceptual framework.

2.2 Theoretical Framework

These are theories used to show the 'why' or reason behind an occurrence. According to Swanson (2013), these theories are developed to enlighten, forecast and comprehend a phenomena and in many instances, to question and broaden existing knowledge within the confines of critical bounding hypothesis. It is the structure that holds or supports a theory of a research study.

2.2.1 Technology Acceptance Model

This theory explains the behavioural intention to use a technological innovation by prospective users. TAM is founded on the TRA, a theory of psychology that tries to expound on behaviour (Ajzen & Fishbein, 1975). It comprises of two main predictors that are; the perceived usefulness and the perceived ease of use and the dependent variable behavioural intention which TRA assumes to be closely related to actual behaviour according to Davis et al., 1989 and Venkatesh et al., 2003. Therefore, an individuals' intention to undertake software piracy is persuaded by the prospective result. Perceived benefits as the belief in relation to positive outcome have been proposed as a factor affecting attitude regarding the behavior(s) of intent to pirate while perceived risk can be viewed as the belief that a negative consequences will occur. Perceived risk can influence individuals' piracy decisions positively by deterring them to commit piracy.

2.2.2 Theory of Planned Behaviour and Theory of Reasoned Action

The TPB is an extension of Ajzen and Fishbein's (1975) TRA, which is proposed for the understanding and prediction of specific behaviors in particular circumstances (Ajzen, 1991). An individual's actual behaviour is influenced directly by their behavioral intention and sequentially, is mutually influenced by their perceived behavioural controls, attitude and subjective norms toward performing the behaviour according to the TPB. The TPB is a well explored intention

ideal that has been successful in forecasting and clarifying behaviour across an extensive range of areas (Lin et al., 1999). Thus, several of preceding studies concerning piracy have employed the TPB as a keystone theory to justify the behavioral intention of individuals (Kwong & Lee, 2002).

The concept of piracy and practices are therefore analyzed from a TAM and TPB perspective. The behaviour towards online piracy can be easily explained using TPB and TAM.

2.3 Online Piracy

Al-Rafee and Cronan, 2006 define piracy is the unlawful downloading and replication of patented media files and software; it also entails unlawful replication of other digital media for instance books, movies and music. The prevalence of digital piracy seems to have gathered speed due to the prompt spread out of the internet, as well as quicker access to it (Lending & Slaughter, 2001).

2.4 Products Handled Online

The fundamental benefit of storing information digitally is that it permits content owners to reproduce, transmit and save large volumes of information as originally formatted (Larabi, Rosselli & Maloigne, 2009). Music for instant has been one of the most affected by online piracy. Piracy of recorded music embodied in digital platforms and in physical carriers persists without letup. In spite of extensive press attention to the newer phenomenon of piracy, commercial piracy in its customary model continues to be an important, and in a number of countries, a developing problem.

Digital publishing has become more common with few publishing houses embracing the trend even though with caution according to Capital business (2013). The improvement of technical devices for instance laptops, smart phones, tablets and eReaders, has made the reality of accessing the print works through digital means a closer reality than we could imagine. An emerging problem of actual concern to publishers is the escalating numbers of unlawful downloads of online journals, as well as the unauthorized digitization of collections by libraries, together with a noticeable increase in the distribution of such digitized versions of content. In South Africa, for instance, it is projected that 40 to 50 percent of the four hundred million rand

textbook market is lost to unlawful photocopying and piracy according to Wafawarowa, 2002. In addition, the AAP in 2004 estimated that publishers in America have lost over five hundred million US dollars due to copyright piracy.

In Kenya, the film industry makes two hundred billion Kenyan shillings annually, an increase by one forty billion from 2007, according to a study commissioned by the Kenya Film Commission, (2016). The steady growth can be attributed to technological advancement in the country. In spite of the rapid growth, challenges that emerge with information technologies require to be tackled in particular the lack of regulation of online content. Almost 80 percent of Kenyans watch films illegally online or buy counterfeit DVD costing the industry billions of shillings. Previously, reduction of revenue caused part by film piracy in the country had seen studios and production houses making losses and also led to the closure of several Kenyan cinemas over the years such as Kenya cinema, Globe cinema, Odeon cinema, Shan cinema and South Africa's Nu Metro.

Software is also highly impacted online piracy. The unauthorized usage, transfer, copying and reproduction of copyrighted software is amid the most considerable threats to the technology industry and in particular the software industry in the MEA territory. In the year 2008, the MEA territory had a piracy rate of 59 percent, but countries like Zimbabwe, Libya, Iraq and Nigeria over 80 percent software piracy rates; out of a hundred units of installed software, over than eighty units were illegally sold, shared and produced. An overall economic loss of about three billion US dollars across the territory was experienced due to the notorious piracy levels. In the domain of software, the value of economic losses in developing and developed countries similarly is immense, outlying that seen in films and music.

2.5 Piracy Practices

As defined by the Worldwide Intellectual Property Organization (2002), piracy is the unauthorized copying of copyright materials for commercial or individual purposes. Therefore, piracy practice involves carry out unauthorized dealing of copyrighted materials. There are several forms of piracy practices that include software counterfeiting, client - server overuse, end user piracy and internet piracy.

According to Business Software Alliance (2014), end user piracy occurs when people copy disks for distribution and installation, use a single licensed copy to install a program on multiple

computers, exchange disks outside or inside their places of work, take advantage of upgrade offers lacking a legal replica of the edition to be upgraded and acquire scholarly or restricted publishing illegally.

The other piracy practice that occurs is counterfeiting of software. Counterfeiters unlawfully sell and duplicate copyrighted products to unwary consumers who believe they are acquiring software that is genuine. According to Poddar (2005), it is not easy to recognize counterfeit software because it often comes with refined registration cards, manuals and packaging. Unfortunately, due to their widespread use, Microsoft products are among the most counterfeited.

Internet piracy involves offer of illegal content for download over the internet through internet auctions that offer out of channel or counterfeit products, websites offering free downloads in exchange of uploading another program, P2P networks that facilitate unauthorized transfer of copyrighted programs and online dealers presenting special deals on behalf of digital publishers . According to Adobe, software acquired through these means has a high probability of being defective, infected with spyware and viruses and maybe impossible to register. Czinkota & Ronkainein (2008) state that client-server overuse takes place when many people are concurrently using a central copy of content or software on a network and it mostly occurs in the workplace.

2.6 Antipiracy

Software piracy has become a major problem for the software industry (Glass & Wood, 1996). Piracy can never be eliminated but can be considerably reduced through some activities. Anti piracy therefore is the process of setting up measures to safeguard against digital piracy. Organizations in Kenya that have been set up to increase protection of copyrighted digital content include; Kenya Copyright Board (KECOBO), World Intellectual Property Organization (WIPO), African Region Intellectual Property Organization(ARIPO), The Anti Counterfeit Agency (ACA)

2.7 Antipiracy Practices Being Undertaken

The first antipiracy practice is educating content users on the effects of digital piracy. Producers of content have undertaken initiative to enlighten users about copyright issues and change public behaviour. Early on in 1992, there was a launch a popular video campaign titled "Don't Copy that Floppy" by the Software Publishers Association to urge users to respect digital copyrights and educate the on impact of piracy on industry.

Additionally, another practice is offering content users legal ways to access content. A number of users obtain digital content unlawfully since similar content is inaccessible legally. Certain producers of content also opt to limit accessibility because they fail to recognize that "long tail" markets are in existence, a habit that is progressively difficult in the network age or as an element of their business model.

In further view, is providing users capability to distinguish legal ways to access content. It is becoming more and more complex for the standard Internet user to single out between illegal and legal content. Industries that produce content should collaborate and build up a trusted brand that users' can rely on to differentiate between unauthorized copyrighted content and websites hosting authorized.

Last but not least is implementing technological controls that can assist decrease the rate of digital piracy. Controls can be employed in more than one of the processes used to view and exchange copyrighted content from the user's personal computer or media player to the ISP used to transfer the content. They include restricted licensing system; an anti-piracy system that reduces the opportunity for piracy and illicit use of software products by requiring each software product to be registered for a single computer. If a user attempts to install the software product on another computer, the software product will recognize a different hardware composition and disable itself (David & Aidan, 2001)

Secondly, is the use of digital rights management technology or technological controls embedded inside content to inhibit unauthorized use which has been implemented by industry groups to mitigate file-sharing (Castro, Bennett & Andes, 2009). Alternatively is the use of systems that distinguish copyrighted content so that owners can start to reduce digital piracy. Diverse

technologies that can be used to distinguish content include fingerprints, metadata and digital watermarks.

2.8 Challenges Online Firms Face when Undertaking Antipiracy

Wall, Lowry and Barlow (2016), states that security concerns and piracy are pervasive because of the ease of access to information. The repeated negative cases in the media demonstrate the collapse of present piracy regulations to keep products traded online adequately secure in today's environment of augmented IT use. There are many well-known challenges linked with DP, be it with music, books, or software (Taylor et al., 2009).

Compared to the cost of software that is pirated, Lau (2006) recognized that cost of the original content was higher. Due to the fact that consumers are conscious about the value of content during purchase, many prefer to use alternatives that are cheaper as long as the product bought will serve a similar purpose. According to a study conducted by Lau (2006), in a particular university in China, numerous respondents argued that they could not understand why price of the original software was higher than the pirated version yet versions were similar. Consumers view content creators being out to take advantage of them by inflating prices of original products. Ang et al. (2006) explains that the more the consumer is price-conscious, the more prone they are to take part in piracy.

The other challenge is high demand for content due to quick growth in IT. With the prompt advancement of IT, content, especially software products are becoming obsolete within a short period of time. The implications are that latest versions of the original products become unavailable to numerous users and in view of the fact that consumers require the products; the option they are left with is the illegal pirated form that is readily obtainable.

Moreover, inappropriate strengthening and legislation of the rule law has hindered efforts to inhibit content piracy. Content users in various emergent countries are oblivious of the legal implication of content piracy (Theo, 2004). Legislation as an instrument of restricting piracy is additionally made complex by the divergent legal systems of dissimilar countries (McDonald & Roberts, 1994).

There is also collectivism behaviour due to more group-oriented cultures in the developed world leading to the infringement of IP rights. As explained by Wang et al. (2005), content users that

group-leaning have a collective mind set of sharing. Thus, they are more prone to share content leading to increased piracy. In other cultures, users are informationally inclined to buy content based on other peoples' opinions and depend their assessment on value of individual product. Rahim et al. (2000) recognized that collectivism behaviour is widespread amongst academicians who share copies of pirated content.

On the other hand, a good number of emergent countries look at piracy as a channel of transferring technical expertise. Lau (2006) argued that developed countries are self-centered in technical progression and inhibit technical advancement as protection of IP rights. As stated by Roberts and McDonald (1994), these countries perceive piracy as a strategy to domestic novelty and economic growth. Countries which have resolved to the enticement of piracy for economic development include Taiwan, Korea, Hong Kong, Singapore and Japan.

Additionally, there is unethical consumer behaviour whereby content users are inclined to assume that only those selling the pirated content are culpable and are not accountable legally according to Wang et al. 2005. They assure themselves that copying of content illegally is not a befitting felony and will not be caught committing the offense. Due to this, some users will engage take part in content piracy even knowing its illegality.

Lastly, is the insufficient knowledge on the penalty of piracy. Content users' in developed countries know that piracy is unaccepted however; in developing countries given that there market growth is newly expanding, a learning process is necessary to enlighten consumers that it is unethical to pirate. Lau (2006) adds that content users in most emerging countries are not knowledgeable of the copyright laws and this leads to leniency with respect to piracy. Insufficient information on the consequences of piracy is a part cause of the leniency towards piracy.

2.9 Effectiveness of Antipiracy Practices on Online Firms Performance

According to Fraser (1994), effectiveness is a gauge of the match linking stated goals and their achievement. It is also the degree to which an activity fulfils its designated purpose or function. When industry and government alliances on antipiracy are sustained and strong, the benefits that emanate from society and economies are significant. An impressive case in point is the

partnership involving the Russian government and software industry. In the year 2007, the software industry and authorities in Russia started partnering on an antipiracy enforcement and awareness campaign. Piracy of software declined a record seven percent in 2007, and an additional five percent in 2008. The achievements have contributed thousands of jobs and millions of dollars to the economy in Russia and local IT firms and has led to an environment where innovation of legal software can thrive in the near future.

Effective enforcement against criminal groups is an additional vital foundation in a strong, resilient and effective worldwide antipiracy strategy. According to the IDC white paper (2008), in the largest case of counterfeiting in history, Microsoft worked with law enforcement authorities in U.S and China to build an impressive lawsuit against a criminal group based in southern China. In 2008, a court in China, convicted eleven members of the syndicate and sentenced them to prison. In another case, Greece's rate of piracy in 2005 shrank from 64 percent to 57 percent in 2008. When checked against various antipiracy practices of reducing software piracy, accomplishment of Greece seems to be associated with three basic steps: education, legislation and enforcement.

Locally in the Kenya Copyright Board, supported by IT industry council, has embarked on a rigorous campaign to raise awareness of piracy allied harm and threat to the country's society and economy. Even if content piracy continues as a predicament in the country, there have been instances organizations have obtained full compensation in antipiracy cases by effectively enforcing their legal rights.

When benchmarked alongside the IDC Roadmap to Reduce Software Piracy, the country scores comparatively well in education, collaboration and legislation. Moreover, IDC believes, that better efforts should be engaged in leading and enforcement by for instance, with the government becoming a full legal software user, thus IDC setting off a moral emulation effect.

2.10 Empirical Studies

This study proposes antipiracy practices be associated with effectiveness when adopted by online firms. The literature review has presented the empirical studies to enable better understanding on the influence of antipiracy practices on firms performances. The table below summarizes some of the existing studies and literature relates to antipiracy and online organizations.

Table 2.1 Summary of Empirical Studies done on Antipiracy Practices and their Effectiveness in Online Firms.

Author(s)	Focus of Study	Research Findings	Gap
Sudlers (2013)	Effectiveness of Antipiracy Technology: Finding suitable solutions for solving online piracy	The effectiveness of antipiracy practices through legislation and government enforcement in film industry in Australia was limited to the short term.	There is need to focus on other industries apart from the film industry and study other antipiracy practices and the level of effectiveness.
Mulwa, Mutua & Wamwiri (2013)	Remedies to Piracy in Developing Countries.	Came up with antipiracy policies such as legislation, enforcement of the law, education and policy implementation.	The study focused on developing countries as a whole. There is need to focus locally to come up with local remedies.
Munga (2013)	Role of Mobile Technology in Anti-counterfeit Initiatives in Kenya (2013)	The research proposes use of mobile technology to authenticate products.	The research only addresses a solution to physical products but there is need to look at solutions for product handled online.
Omondi (2011)	Establishing how enforcement of intellectual property right laws reduces piracy.	Enforcement alone cannot effectively address piracy.	There is need to use other counter piracy measures to effectively address the issue.

Author(s)	Focus of Study	Research Findings	Gap
Kimi & Jean (2008)	Factors Influencing Attitudes towards Digital Piracy by South Africans.	Digital Piracy is a major subject that requires to be dealt with. There is significant correlation to an individual's attitude towards digital piracy.	The researchers' scope only covered university students in South Africa. There need to address a larger population scope.
Ibrahim (2008)	Software Piracy in Egypt	Analytical results show that relaying on legal enforcement alone does not always reduce the rate of piracy.	Need to address other antipiracy practices apart from legal enforcement. There is also need to research on other platforms that piracy occurs apart from software.
Panethiere (2005)	The persistence of piracy	The research recognized that the problem of piracy in 'cultural industries' – books, multimedia and music has been persistent	While the full eradication of piracy may not be achieved, the study has not looked at measures that may counter piracy.

Source: Author, (2016).

2.11 Conceptual Framework

The conceptual frame work according to Kombo et al., (2006) associates the independent variables to the dependent variable. A variable is a concept which can take diverse qualitative values (Kothari, 2008). As indicated by Kothari, (2008) an independent variable is one that is antecedent to the dependent variable while a dependent variable is a consequence of the other variable. A dependent variable is the presumed effect while the independent variable is the presumed cause. The constructs and their associations are demonstrated in Table 2.2 as follows where; Antipiracy is the independent variable while online firms performance is the dependent variable.

Table 2.2 Conceptual Model

Antipiracy Practices	Online Firms Performance
Legislation	Reduced piracy
Enforcement	Reduced costs
Education →	Increased revenue
Collaboration	Prosecution of pirates
Leading	Enabled creation of jobs
	Created awareness on the issue of piracy
	Successful enforcement of legal rights
	Compensation in antipiracy cases
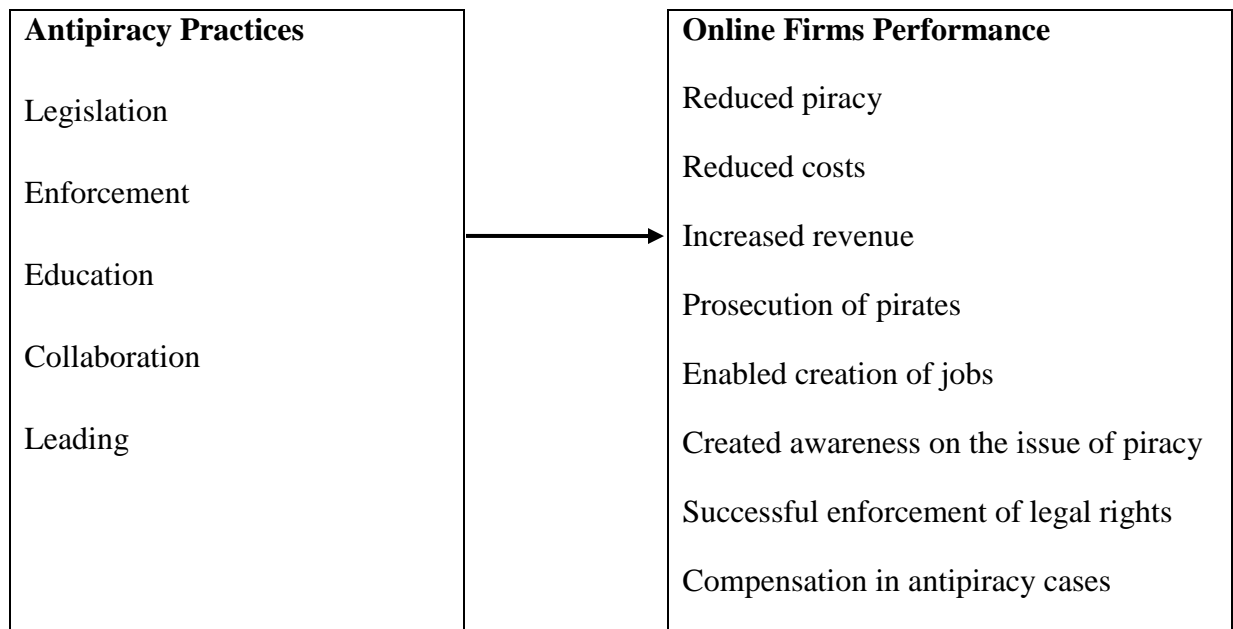
Source: Author, (2016).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology of the research that was developed in realizing the objectives of the study. Specifically it addresses the design of the research, target population, techniques of sampling and sample size, collection of data as well as analysis of data.

3.2 Research Design

This study adopted a descriptive cross-section survey. A descriptive research design aids to make certain and depict the attributes of the variables of significance in a circumstance (Sekaran, 2006). It represents the attributes of a specific circumstance and it has the benefit of flexibility and accuracy (Cauveryetal, 2003). According to Kothari (2008), a survey is a method of research used for gathering information from a chosen group of populace using uniform interviews or questionnaires.

3.3 Population of the Study

The intended population for this research study comprised of all online firms which are based in Nairobi, Kenya.

3.4 Sampling Design

As there exists no official records of online firms in Kenya, therefore judgmental sampling will be done to counter this challenge. The sample constituted of at least 30 firms. The technique is valid in circumstances when the study constitutes of a small population and has been used extensively in social research or where the population may not be well defined (Battaglia, 2011).

3.5 Data Collection

This study utilized primary data and was administered to the ICT managers or IT specialists working for online firms in Kenya. The data will be obtained using questionnaires. The questionnaires are divided into five parts. Section A will gather general information about the respondent; Section B will gather information on the extent of piracy practices; Section C will gather information on antipiracy practices; Section D will gather information on challenges encountered when undertaking antipiracy and Section E will gather information on the

effectiveness of antipiracy practices for online firms and Section F will gather information on the performance of online firms due to adoption of antipiracy practices.

3.6 Data Analysis

Data was prepared for analysis through editing, coding and data entry. The data was then subjected to various analyses. Demographics for the firms profile was analyzed using frequency and descriptive statistics; Piracy, Antipiracy practices and challenges was analyzed using descriptive statistics for instance mean and standard deviation and the result presented in tables and frequency. As for performance, regression analysis was done in order to establish the relationships among the study variables. The regression model as follows will be used:

$$Y = a + b_1 X_1 + \varepsilon$$

Where:

Y = Antipiracy performance (Indicators: reduced costs, reduced piracy, and increased revenue)

X_1 = Antipiracy practices (Practices: education, legislation, collaboration with government and enforcement of the law)

ε = Error

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

In this chapter, the researcher presents the findings, analysis and discussion of the study. The study targeted 30 online firms in Nairobi, hence a total of 30 questionnaires were administered. The research managed to collect 26 questionnaires out of 30 questionnaires representing a response rate of 86.7 percent. According to Fowler 2002, return rates above 70 percent are necessary to derive significant and generalizable conclusions. Therefore, the response rate of 86.7 percent was adequate to derive significant conclusions. The chapter covers an analyses and reporting done of the research findings and discussions in line with the objectives of study; extent of piracy practices, extent of adoption of antipiracy practices, challenges faced when online firms are undertaking antipiracy practices, extent of effectiveness of antipiracy practices experienced by online firms and extent to which antipiracy practices by online firms has affected its performance.

4.2 Demographic Information

To capture the general information, the study sort to establish how long the organization has been in operation, the gender of the respondent, the job title of the respondent, the number of years the respondent has worked for the organization and the product the firm handles. As follows, the findings of the study are explained and discussed.

4.2.1 Firms Period of Operation

The study sought to discover the distribution of respondents by their period of operation. The findings were analyzed using frequency in Table 4.1

Table 4.1: Period of Operation

Years	Frequency	Percent
0-5	12	46.2
6-10	8	30.8
11-20	4	15.4
>20	2	7.6

Source: Research Data (2016)

The findings revealed that 46.2 percent of the firms have been in operation for five years and below, 30.8 percent of the firms have been in operation for six to ten years, 15.4 percent of the firms have been in operation for eleven to twenty years and 7.6 percent of the firms have been in operation for over twenty years. This shows that majority of the online firms at 77 percent have been operation in less than 11 years and are still in their formative stages of operation.

4.2.2 Gender of Respondents

The study sought to find out the distribution of respondents by gender to know which gender was the majority. The findings were analyzed using frequency in Table 4.2

Table 4.2: Respondents Gender

Gender	Frequency	Percent
Male	15	57.7
Female	11	42.3

Source: Research Data (2016)

The above results shows that majority of the respondents who took part in the study were male, representing 57.7 percent followed by female at 42.3 percent. The results imply that the majority of I.T specialists in the Kenyan online firms are male.

4.2.3 Job Title of the Respondents

The study sought to discover the distribution of respondents by job title for purposes of data collection for easily understanding the questionnaire. The findings were analyzed using frequency in Table 4.3

Table 4.3 Job Title

Job Title	Frequency	Percent
I.T Managers/Specialists	22	84.6
Others	4	15.4

Source: Research Data (2016)

The findings revealed that 84.6 percent of the respondents were ICT managers or I.T specialist while 15.4 percent were respondents from other fields due to the nature of the organization. This indicates that the questionnaires were responded to by the most informed persons in the firm regarding antipiracy practices.

4.2.4 Number of years the Respondent has Worked for the Organization

The study sought to find out the distribution of respondents by the period they had worked for the organization. The findings were analyzed using frequency in Table 4.4

Table 4.4: Period worked in the organization

Years	Frequency	Percent
0-2	1	3.7
3-5	8	29.6
6-10	14	51.9
>10	4	14.8

Source: Research Data (2016)

The findings revealed that 3.7 percent of the respondents had worked for the firm two years and below. 29.6 percent had worked for the firm between three and five years, 51.9 percent had worked for the firm between six to ten years and 14.8 percent of the respondents had worked for the firm for over ten years. This shows that majority of the respondents that is 66.7 percent had worked for the firm for over six years thus they would be knowledgeable on the operations and practices of the firm.

4.2.5 Products Handled by Firm

The study sought to discover the distribution of respondents by the products they handle in their organization. The findings were analyzed using frequency in Table 4.5

23

Table 4.5: Products Handled

Product	Frequency	Percent
Music	1	3.7
Books	5	18.5
Software	15	55.6
Films	6	22.2

Source: Research Data (2016)

The findings revealed that 3.7 percent of what the online firms handled was music, 18.5 percent was books, 22.2 percent was films and 55.6 percent was software. This study concurs with a previous study by Panthiere (2005) that recognized the persistence of piracy and the problem occurring in cultural industries.

4.3 Extent of Piracy Practices

The respondents were requested to point out the extent to which their firm had faced various forms of piracy using a 5-point Likert scale. On a scale of 1 to 5; where (1) - no extent, (2) - small extent, (3) - medium extent,(4) - large extent and (5) - very large extent. A mean of two (2) and below indicated that there was a small extent or no extent that the firm faced various forms of piracy while a mean of three (3) and above indicated that the firms had face various forms of piracy to a medium, large or very large extent. The Table 4.6 summarizes the mean scores affirming the extent to which online firms in Kenya have faced piracy. The mean scores are interpreted with the Likert scale.

Table 4.6: Extent of piracy practices

Piracy Practices	Mean	SD
Firms products are downloaded illegally	3.30	0.47
Firms products are duplicated illegally	3.89	0.80
Firms products are sold illegally	3.67	0.83
Firms products are distributed illegally	3.41	0.75
Firms products are installed illegally	4.19	0.83
Firms product is used at the same time by individuals (as a central copy)	4.07	0.83

Source: Research Data (2016)

The findings revealed that the extent to which firms experience various forms of piracy is mostly due to individuals using a central copy of a firms product at the same time and illegal installation of firms product both at a mean of 4.07 and 4.19 respectively. The respondents also indicated that other piracy practices their firms experience include illegal distribution, illegal sale, illegal duplication and illegal download of firms product at a mean of 3.41, 3.67, 3.89 and 3.30 respectively.

The findings reveal that piracy is an issue that is persistent. This concurs with the literature data that piracy is among is among the major threats to the ICT industry in Kenya today and online firms have come to the realization that there is necessity to set up antipiracy measures in place to reduce this threat.

4.4 Extent of Adoption of Antipiracy Practices

The respondents were requested to point out the extent of adoption of antipiracy practices in their firms using a 5-point Likert scale. On a scale of 1 to 5; where (1) - no extent, (2) - small extent, (3) - medium extent, (4) - large extent and (5) - very large extent. A mean of two (2) and below indicated that there was a small extent or no extent that the firm had adopted antipiracy practices while a mean of three (3) and above indicated that the firms had adopted antipiracy practices to a medium, large or very large extent. Table 4.7 summarizes the mean scores of the extent to which online firms in Kenya have adopted the antipiracy practices. The mean scores are interpreted with the Likert scale.

Table 4.7: Extent of adoption of Antipiracy Practices

Antipiracy Practices	Mean	SD
The firm uses publications to educate on piracy	3.93	0.68
The firm uses media to educate on piracy	4.26	0.76
The firm uses public forums to educate on piracy	4.11	0.75
The firm is uses campaigns to launch antipiracy practices	4.07	0.73
The firm has set up a restricted licensing system	4.00	0.68
The firm uses digital watermarks	4.07	0.78

Antipiracy Practices	Mean	SD
The firm uses encryption within content	4.26	0.66
The firm uses digital right management technology	4.30	0.67
The firm uses technical controls embedded within content	3.96	0.71
The firm uses labels to assist users distinguish unauthorized content	4.00	0.73
The firm uses labels to assist users distinguish authorized content	4.07	0.73
The firm has collaborated with other firms in the industry on antipiracy efforts	3.89	0.97
The firm has partnered with government on antipiracy efforts	4.15	0.66
The firm often reviews its antipiracy practices	4.30	0.67

Source: Research Data (2016)

The antipiracy practice that was mostly adopted was digital rights management technology with a mean of 4.30 as indicated by respondents. This agrees with the literature review as organizations use technology to prevent unauthorized access to their products in order to reduce digital piracy. The respondents also indicated that they often reviewed their antipiracy practices, used encryption within their content and used media to educate on piracy with a mean of 4.30, 4.26 and 4.26 respectively. These findings concur with the literature review as education, enforcement and review can help safeguard against piracy. Mulwa, Mutua and Wamwiri (2013) proposed practices such as education, legislation, creation and implementation of computer usage policies and enforcement as remedies to piracy in developing countries.

The respondents were also asked if they partnered with government and collaborated with other firms in the industry on antipiracy efforts. The respondents indicated that they have partnered to large extent by mean of 4.15 and 3.89 respectively. The respondents also indicated that they used labels to assist users distinguish authorized content, they used labels to assist users distinguish unauthorized content; they used digital watermarks and have set up a restricted licensing system to mitigate piracy levels by a mean of 4.07, 4.00, 4.07 and 4.00 respectively.

Other antipiracy practices adopted were technical controls, publications and public forums to educate on piracy and use of campaigns to launch antipiracy practices. This indicates that online

firms in Nairobi have adopted antipiracy practices to a large extent owing to the threat of piracy in order to improve efficiency and performance. They also engage in more than one antipiracy practices which is more effective. The above results generally agree with the literature data to the effect that there is need to use other antipiracy measures. According to Omondi (2011), enforcement alone cannot effectively address piracy and there is need to use other antipiracy measures.

4.5 Challenges Faced when Online Firms are Undertaking Antipiracy Practices

In examining the possible challenges the online firms face relating to implementation of antipiracy practices, the respondents were requested to rate the extent using a 5-point Likert scale. On a scale of 1 to 5; where (1) - no extent, (2) - small extent, (3) - medium extent, (4) - large extent and (5) - very large extent. A mean of two (2) and below indicated that there was a small extent or no extent that the firm had faced challenges when implementing antipiracy practices while a mean of three (3) and above indicated that the firm had faced challenges when implementing antipiracy practices to a medium, large or very large extent. Table 4.6 summarizes the mean scores of the challenges online firms face when undertaking antipiracy practices. The mean scores are interpreted with the Likert scale.

Table 4.8 Challenges Faced when Undertaking Antipiracy Practices.

Challenges	Mean	SD
Implementation is hindered by the constantly changing technological environment	3.67	0.73
Cost of implementing antipiracy in online firms is a high-cost financial investment	4.00	0.88
Strong demand for online content due to rapid growth of information technology	4.04	0.76
Unethical consumer behaviour that those pirating hold no legal responsibility	4.19	0.74
Belief that piracy act as a transfer of knowledge	4.04	0.76
Rapid increase of piracy in online firms	4.11	0.70
Lack of government support in implementing antipiracy practices	3.81	0.96
Lack of collaboration with other firms in the industry when implementing antipiracy practices	4.00	0.78

Challenges	Mean	SD
Attractive pricing of pirated products	4.04	0.85
Inadequate knowledge on the consequences of piracy	4.30	0.61
Inadequate reinforcement of the law	4.07	0.87
Consumers sharing firms pirated products	4.04	0.76

Source: Research Data (2016)

Majority of the respondents indicated that users' inadequate knowledge on the consequences of piracy, unethical consumer behavior that those pirating hold no legal responsibility and rapid increase of piracy in online firms with a mean of 4.30, 4.19 and 4.11 respectively were the major challenges online firms faced when undertaking antipiracy practices. This concurs with the literature data whereby content users are inclined to assume that only those selling the pirated content are culpable and are not accountable legally. Lau (2006), states that content users in most emerging countries are not knowledgeable of the copyright laws and this leads to leniency with respect to piracy.

Consumers sharing firms pirated products, inadequate reinforcement of the law, attractive pricing of pirated products and belief that piracy was a transfer of knowledge were also major challenges that online firms face with a mean of 4.07, 4.07, 4.04 and 4.04 respectively. According to Roberts and McDonald (1994), developing countries perceive content piracy as a strategy to domestic novelty and economic growth leading to piracy. Collectivism behavior where consumers share firms pirated products is most common among academicians where they share copies of books and software.

Other challenges that online firms face to a large extent include lack of collaboration with other firms in the industry, high cost of implementing antipiracy, lack of government support in implementing antipiracy practices and hindrance by the constantly changing technological environment with a mean of 4.00, 4.00, 3.81 and 3.67 respectively.

4.6 Effectiveness of Antipiracy Practices experienced by Online Firms

The respondents were requested to point out the extent to which their firm had experienced various benefits due to effectiveness of Antipiracy Practices using a 5-point Likert scale. On a scale of 1 to 5, where; (1) - Strongly disagree, (2) - Disagree, (3) - Undecided, (4) – Agree and (5) - Strongly agree. A mean of two (2) and below indicated that the respondents disagreed or strongly disagreed that the firm had experienced benefits due to the effectiveness of antipiracy practices, a mean of three (3) indicted that the respondents were undecided, a mean above three (3) indicated a low margin and a mean of four (4) and above indicated that the respondents agreed or strongly agreed that the firm had experienced benefits due to effectiveness of antipiracy practices. Table 4.9 gives a summary of the findings. The mean scores are interpreted with the Likert scale.

Table 4.9: Effectiveness of Antipiracy

Effectiveness of Antipiracy	Mean	SD
Antipiracy has created awareness on the issue of piracy	3.96	0.44
Antipiracy has reduced piracy in the firm	4.41	0.64
Antipiracy has led to prosecution of content pirates	4.00	1.00
Antipiracy has increased firms revenue	4.26	0.76
Antipiracy has enabled creation of jobs	3.96	1.02
Antipiracy has enabled firms successfully enforce their legal rights	4.26	0.71
Antipiracy has led to an environment which the industry can thrive in future	4.15	0.72

Source: Research Data (2016)

The respondents agreed that the following benefits have been accrued due to the effectiveness of antipiracy practices; reduction of piracy in the online firm, successful enforcement of legal rights, increased revenue, prosecution of content pirates and an environment where the industry can flourish in future all with a mean of above 4. According to IDC white paper (2008), when industry and government collaboration on antipiracy are sustained and strong, the benefits that flow to society and industry are substantial.

Conversely, the respondents indicated a low margin of both a mean of 3.96 on whether antipiracy had enabled the creation of jobs and had also created awareness on the issue of piracy being the minority benefits. Overall, the findings concur with the literature studies that online firms do accrue benefits due to the effectiveness of antipiracy practices such as legislation, education and collaboration.

4.7 Firms Performance due to Antipiracy Practices

On a scale of 1 to 5, where; (1) - Strongly disagree, (2) - Disagree, (3) - Undecided, (4) – Agree and (5) - Strongly agree. The respondents were asked to indicate the performance outcomes of implementing antipiracy practices using the above 5-point Likert scale. A mean of two (2) and below indicated that the respondents disagreed or strongly disagreed that the firm had experienced improved performance due to implementation of antipiracy practices, a mean of three (3) indicted that the respondents were undecided and a mean of four (4) and above indicated that the respondents agreed or strongly agreed that the firm had experienced improved performance due to the implementation of antipiracy practices. Table 4.10 gives a summary of the findings. The mean scores are interpreted with the Likert scale.

Table 4.10: Firms performance due to antipiracy practices

Performance due to Antipiracy	Mean	SD
Antipiracy has led to increase of firms sales	4.04	0.52
Antipiracy has increased firms profitability levels	4.26	0.76
Antipiracy has led to increase of firms market share	4.22	0.75
Antipiracy has increased firms revenue	4.04	0.65
Antipiracy has helped firms improve products quality	4.07	0.83
Antipiracy has enabled firms improve their market ranking	4.15	0.99
Antipiracy has improved customer satisfaction of firms consumers	4.11	0.70

Source: Research Data (2016)

All respondents agreed that implementing antipiracy practices had a positive impact on firms performance. The finding revealed that improved performance was mainly reflected through increased profitability levels, increased market share, improved market ranking and improved customer satisfaction as indicated by the respondents who agree with a mean of 4.26, 4.22, 4.15 and 4.11 respectively.

Other improved performance indicators that the respondents agreed due to implementation of antipiracy practices were increase of firms sales (4.04), revenue (4.04) and improved product quality (4.07).

4.8 Regression Analysis of Antipiracy Practices and Firms Performance

The researcher also sought to establish if there was any relationship between antipiracy practices and performance of online firms in Nairobi, Kenya using a regression analysis. Regression analysis entails the distribution of the mean value of a single random variable as the other variables are allowed to take different values. The model of regression exclusively associates the mean values of y for a variety of values of the x variable. Basically, regression analysis is used in two distinct including being a means of considering data taking into account any other relevant variables by adjustment of the random variable and generating mathematical forms to be used to predict the random variable from the other (independent) variables.

The regression model applied was as follows:

$Y = a + b1X1 + \varepsilon$

Where;

a = constant

b1 = coefficient

X1= antipiracy practices

ε = error term

Regression analysis was done to ascertain the relationships amongst the study variables. Table 4.11 illustrates a summary of the regression model used.

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.403[a]	0.162	0.129	0.51288

a. Predictors: (Constant), Antipiracy practices

b. Dependent Variable: Performance due to Antipiracy practices

Source: Research Data (2016)

The summarized model table outlines the overall suitability of the model. R shows the correlation between the variables whereas the R^2 value indicates the amount of variance in the dependent variable by the predictor variable. In this case, the predictor variable accounts for 16.2% of the variance in the performance.

Table 4.12: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.274	1	1.274	4.844	0.037[b]
	Residual	6.576	25	0.263		
	Total	7.850	26			

a. Dependent Variable: Performance due to Antipiracy practices

b. Predictors: (Constant), Antipiracy practices

Source: Research Data (2016)

The ANOVA Table 4.12 above tests whether the regression model is generally a good fit for the data. This denotes the statistical significance of the administered model of regression. At this point, p= 0.037, which is less than 0.05, and points out that the model of regression arithmetically and significantly predicts the result variable; explicitly: it is a good fit for the data.

The results of a P value of 0.037 shows that there is relationship between the response variable (firms Performance) and predictor's variables (antipiracy practices). F ratio is computed to signify the variance amid the cluster, divided by the variance within the clusters. If the F ratio is large, it implies that there is more variability amid the clusters (due to the independent variable) than there is within each cluster, denoted as the error term as stated by Pallat, 2005. For that reason, this is a sign of a better predictor model. A significant F test implies that we can reject the null hypothesis which states that the population means are equivalent (in this case that antipiracy practices do not have an effect on firms performance).

Table 4.13: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.113	0.920		2.297	0.030
	Antipiracy practices	0.491	0.223	0.403	2.201	0.037

    a. Predictors: (Constant), Antipiracy practices

    b. Dependent Variable: Performance due to Antipiracy practices

Source: Research Data (2016)

The established linear regression equation $(Y = a + b1X1 + \varepsilon)$ becomes:

$Y = 2.113 + 0.491X_1 + \varepsilon$

Where:

- Constant = 2.133, shows that if the antipiracy practices are held at constant zero, organizational performance would be at 2.133
- X1 = 0.491, indicated that 1 unit change in antipiracy practices lead to 0.491 units rise in firms performance

The above linear regression was also conducted to predict the impact of Antipiracy practices on the general Performance of the firm; that is increased sales, revenue and market ranking. The overall model was significant, *F (1, 25) =4.84, p<0.05*, and conducted for 16.2% of the variance. The results indicate that Antipiracy practices were significant predictor of the firms performance.

4.9 Discussion of the Findings

From the results of the study, the researcher found out that Antipiracy practices adopted by online firms will be expected to influence the firms performance to a great extent in a positive manner. These findings concur with literature review in that, firms that adopted and implemented antipiracy practices in their operations will increase sales, profitability levels, revenue and improved customer satisfaction of firms consumers.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of findings on piracy practices, antipiracy practices, the effectiveness of antipiracy practices on online firms performance and the challenges faced in implementation of antipiracy practices; conclusion, recommendations, study limitations, and areas for additional research.

5.2 Summary of Findings

Findings from the study revealed that Online firms in Nairobi, have adopted specific antipiracy practices aligned to their business strategy in order to reduce the threat of piracy and these practices have significantly contributed to the performance of online firms positively hence increasing profitability and revenue through effective implementation of antipiracy practices.

To a large extent, the firms experience piracy practices such as illegal distribution, illegal sale, illegal installation, illegal duplication and illegal download of their products. This concurs with previous studies such as Pantheire (2005) who recognized the persistence of piracy in 'cultural industries'. Online firms are realizing the value in implementing antipiracy practices not only to mitigate against the threat of piracy but also as a positive influence to firms performance.

Various challenges online firms grapple when undertaking antipiracy should be addressed by the industry, government and consumers by educating users on the impact of piracy, providing users with a legal means to access content, implementation of technical controls and collaboration between government and online firms.

The results from the findings also show that there is a relationship between antipiracy practices and online firms performance. Adoption of antipiracy practices by firms is seen to positively impact performance outcome in terms of increase revenue, increased sales, increased market share and improved customer satisfaction.

5.3 Conclusion

In support of the findings and the ongoing discussions, it is clear that there exist strong antipiracy practices that have contributed to reduction of piracy and equally impacted online firms effectiveness and overall performance in the challenging and changing technological environment.

The findings of the study conclude that the adoption of antipiracy practices by online firms reduces the threat of piracy and improves firms performance. The improved performance is reflected through customer satisfaction, cost savings, increased profitability and increased sales. This shows that employing various antipiracy practices by online firms will assist them in addressing the persistent threat of piracy.

From the findings, the study concludes that antipiracy practices being adopted by online firms in Nairobi, faced various implementation challenges which hindered the effectiveness of the adoption process. The main challenges include; inadequate knowledge on the consequences of piracy, rapid increase of piracy in online firms, unethical consumer behaviour that those pirating hold no legal responsibility, inadequate reinforcement of the law and consumers sharing firms pirated products. Therefore, online firms faced diverse challenges that slowed down the implementation of the antipiracy practices.

The finding of the study have led to the conclusion that there have been benefits accrued by online firms from the implementation of antipiracy practices such as reduced piracy, increased revenue, successful enforcement of legal rights and led to an environment which the industry can thrive in the future.

5.4 Recommendations

It is important for online firms to adopt and implement antipiracy practices. Adoption of these antipiracy practices through appropriate research will help online firms address the challenge of piracy. It will also assist the firms achieve effectiveness experienced by implementation of antipiracy practices and hence will lead to improved overall performance. Online firms should embrace antipiracy practices in order to reap the benefits in this changing digital world.

The adoption of antipiracy practices are a huge deal in the online platform as evident from the study, clearly reflecting the reduced threat of piracy and improved performance of firms. To achieve effective implementation of various antipiracy practices, it requires comprehensive polices to be developed, executed and scrutinized to make certain they remain pertinent to the online firm.

With the changing technological environment, online firms need to brace themselves and proactively and innovatively invest in appropriate antipiracy practices. Moreover, online firms should collaborate with the government on creating awareness on the issue of piracy and government should assist them enforce their legal rights against those who commit piracy. The firms should also partner with other firms within the industry to educate the masses and campaign against the threat of piracy.

5.5 Limitations of the Study

There was controlled access to information. Moreover, some of the targeted respondents failed to respond. Some respondents argued that it was against their organization's guiding principles to reveal information concerning their firm while others failed to give back the questionnaire asserting they did not find time to respond.

Another limitation is that data used in this research may not be 100 percent accurate since the researcher has no power or capacity to verify the accuracy of information provided.

5.6 Areas for Further Research

Since this study examined Antipiracy practices and their effectiveness on Online Firms performance in Nairobi, Kenya, the study recommends similar studies to be done in the country as a whole for comparison and allow for generalization of findings on the Antipiracy practices and their effectiveness on Online Firms performance in Kenya. The study also recommends similar studies to be done in the IT industry and other sectors of the Kenyan economy.

REFERENCES

Ajzen, I. (1991). Attitude Structure and Behavior in Pratkanis, Breckler & Greenwald (eds.), Attitude structure and function; Hillsdale, pp. 241–274.

Ajzen I. (1985). From Intentions to Behavior: A Theory of Planned Behaviour in I. J. K. J. B. (eds.), Action-Control: From Cognition to Behavior; Spinger, Heidelberg), pp. 11–39.

Al-Rafee, S. & Cronan, T.P. (2006), Digital piracy: Factors that influence attitude toward Behaviour, *Journal of Business Ethics*, Vol. 63, pp. 237-59.

Ang, S. H., Cheng, P. S., Lim, E. A. C., & Tambyah, S. K. (2001). Spot the difference: consumer responses towards counterfeits. *Journal of Consumer Marketing*, Vol. 18: Iss.3, pp. 219-235.

Business Software Alliance. (2006). *Fourth Annual BSA and IDC Global Study*. Retrieved May 14, 2007 from http://www.bsa.org/globalstudy/

Casto, D., Bennet, R.& Andes, S. (2009). Steal These Policies: Strategies for Reducing Digital Piracy, *The Information Technology Foundation.*

Depken, C. A. et al. (2004) "Social Construct and the Propensity for Software Piracy," Vol.11,

Fang, D.X. (2003). Question the Piratical "Anti-piracy Marketing by Microsoft.

Fishbein, M. & Ajzen, I. (1975). Attitude, Intention, and Behaviour: An Introduction to Theory and Research. Reading, MA. Addison-Wesley.

Fitzberg, N. & Cormack, M. (2015). Role of Business in Society – An Agenda for Action.

Glass, R. S. & Wood, W. A. (1996). Situational Determinants of Software Piracy: An Equity Theory Perspective. *Journal of Business Ethics*, Vol. 15: Iss.11, pp. 1189-1198.

Jopling, K. (2005). Director of Market Research, IFPI, quoted in 'Broadband Boosts Music Piracy',*The Australian*.

Kenya Film Classification Board: http://www.kfcb.co.ke/

Kreie, J. & Cronan, P.C. (2000). Making Ethical Decisions: How Companies Might Influence the Choices One Makes. *Communications of the ACM*, Vol. 13: Iss.12, pp. 66 – 71.

Lau, (2006). Factors Motivating People Towards Pirated Software, *Qualitative Market Research: An International Journal*, Vol. 9: Iss.4, pp.404 – 419

Lending, D. & Slaughter S.A. (2001). Research in Progress: The Effects of Ethical Climate on Attitudes and Behaviours toward Digital Piracy, *SIGCPR*, 2001, pp.198-200.

Lobato, R. & Thomas J. (2011). The Business of Antipiracy: New Zones of Enterprise in the Copyright Wars; *International Journal of Communication:* Vol. 6, pp. 606-625.

McDonald, G. & Roberts, C. (1994). Product Piracy: The problems that will not go away. *The Journal of Product and Brand Management*, Vol. 3: Iss.4.

Mulwa, Mutua & Wamwiri (2013). Addressing the Challenges of Computer Software Anti-Piracy in Developing Countries: Copyright Issues in IT Market: *Indian Journal of Research,* Vol. 2 Iss. 8.

Njihia, C. (2010). Introduction to E-business. Coursework in the University of Nairobi.

Omondi, F.L (2014). How Can Kenya Tighten Its Intellectual Property Rights Law to Ensure Maximum Benefit to the Copyright Owners?

Pallant, J. (2005). SPSS Survival Manual: A Step Guide to Data AnalysisUsing SPSS. for Windows (Version 12).New York (2nded.). Open University Press.

Panethière, D. (2005). The Persistence of Piracy: The Consequences for Creativity, for Culture, and for Sustainable Development.

Penn, J. (2015). How is the Internet Fueling Economic Growth in the Developing World? *Journalist Resource.*

Rob Gillo (2016). "Kenya Film Industry Earnings Hit Sh200 Billion Annually," Capital FM.

Steven, A. Taylor, (2012). Implicit Attitudes and Digital Piracy, *Journal of Research in Interactive Marketing*, Vol. 6: Iss.4, pp. 281 – 297.

Sudler, H. (2013). Effectiveness of Anti-piracy Technology: Finding Appropriate Solutions for Evolving Online Piracy, *Business Horizons*, Vol. 56, Iss.2, pp. 149-157.

Triplett, W. (2005). 'Online Pic Pirates Face More Lawsuits', *Daily Variety.*

Wafawarowa, B. (2002). Legislation, Law Enforcement and Education: Copyright Protection in the Developing Regions, *BPN Newsletter*, Iss. 30

Wafula, P. (2011). "Kenya to Market Films Online as Sector Reels from Lack of Exposure," Daily Nation Kenya.

Wall, J. D., Lowry, P. B. & Barlow, J. B. (2016). Organizational Violations of Externally Governed Privacy and Security Rules: Explaining and Predicting Selective Violations under Conditions of Strain and Excess, *Journal of the Association for Information System*, Vol. 17: Iss.1, Article 4.

APPENDICES

APPENDIX I

LETTER TO RESPONDENTS

Dear Respondent,

RE: INTRODUCTION LETTER

I am an MBA student at the University of Nairobi. I am carrying out a study in the area of Management Information Systems: Topic — **Antipiracy Practices and their Effectiveness on Online Firms Performance in Nairobi, Kenya**. This questionnaire is designed to gather information on the application of the concept of Antipiracy practices and their effectiveness in your firm. This study is being carried out in partial fulfillment of the award of Master of Business Administration degree, School of Business in The University of Nairobi.

All information you disclose will be treated in strict confidence and at no instance will your private details be mentioned in any report. The information will be used for academic purpose only. The results and the final report of the study will be availed to you upon request.

Your co-operation will be highly appreciated.

Yours Faithfully,

Jackline Gathigia Murimi

University of Nairobi.

APPENDIX II

<div align="center">

QUESTIONNAIRE

</div>

Please indicate where appropriate by putting a tick in the spaces provided or alternatively please write in the space provided.

SECTION A: General Information

1.How long has the organization been in operation?

  0 – 5 years   ( )

  6 – 10 years   ( )

  11 – 20 years ( )

  Over 20 years ( )

2. Please indicate gender:
  Male ( )   Female ( )

3. Please state your job title.
……………………………………………………………………………………………………

4. How long have you worked for your organization?

  0 – 2 years   ( )

  3 – 5 years   ( )

  6 – 10 years   ( )

  Over 10 years ( )

5.Which product does your firm handle?

  Music   ( )

  Books   ( )

  Software   ( )

  Films   ( )

  Other specify ……………………………………………………………………………….

SECTION B: Extent of Piracy Practices
6. Please indicate the extent to which the firm has experienced each of the following forms of
   piracy. Use the scale of 1-5; (where: 1 - no extent,   2 - small extent,   3- medium extent,
  4 - large extent and   5 - very large extent). Tick as appropriate.

Piracy Practices

	No extent (1)	Small extent (2)	Medium extent (3)	Large extent (4)	Very large extent (5)
Firms products are downloaded illegally					
Firms products are duplicated illegally					
Firms products are sold illegally					
Firms products are distributed illegally					
Firms products are installed illegally					
Firms product is used at the same time by individuals (as a central copy)					

Others (Please specify)

………
………
………

SECTION C: Extent of adoption of Antipiracy Practices

7. Please indicate the extent to which the firm has adopted each of the following Antipiracy
   Practices. Use the scale of 1-5; (where: 1 - no extent,   2 - small extent,   3- medium extent,
   4 - large extent and   5 - very large extent). Tick as appropriate.

Antipiracy Practices

	No extent (1)	Small extent (2)	Medium extent (3)	Large extent (4)	Very large extent (5)
The firm uses publications to educate on piracy					
The firm uses media to educate on piracy					
The firm uses public forums to educate on piracy					
The firm is uses campaigns to launch antipiracy practices					
The firm has set up a restricted licensing system					
The firm uses digital watermarks					
The firm uses encryption within content					
The firm uses digital right management technology					
The firm uses technical controls embedded within content					
The firm uses labels to assist users distinguish unauthorized content					
The firm uses labels to assist users distinguish authorized content					
The firm has collaborated with other firms in the industry on antipiracy efforts					
The firm has partnered with government on antipiracy efforts					
The firm often reviews its antipiracy practices					

Others (Please specify)

……………………………………………………………………………………………………
……………………………………………………………………………………………………

SECTION D: Challenges Faced when Online Firms are undertaking Antipiracy Practices

8. Please indicate the extent to which the firm has faced each of the following challenges related to implementation of antipiracy practices. Use the scale of 1-5; (where: 1 - no extent, 2 - small extent,   3- medium extent,   4 - large extent and   5 - very large extent). Tick as appropriate.

Challenges

	No extent (1)	Small extent (2)	Medium extent (3)	Large extent (4)	Very large extent (5)
Implementation is hindered by the constantly changing technological environment					
Cost of implementing antipiracy in online firms is a high-cost financial investment					
Strong demand for online content due to rapid growth of information technology					
Unethical consumer behaviour that those pirating hold no legal responsibility					
Belief that piracy act as a transfer of knowledge					
Rapid increase of piracy in online firms					
Lack of government support in implementing antipiracy practices					
Lack of collaboration with other firms in the industry when implementing antipiracy practices					
Attractive pricing of pirated products					
Inadequate knowledge on the consequences of piracy					
Inadequate reinforcement of the law					
Consumers sharing firms pirated products					

Others (Please specify)

……………………………………………………………………………………………………
……………………………………………………………………………………………………
……………………………………………………………………………………………………

SECTION E: The extent of effectiveness of Antipiracy Practices experienced by Online Firms

9. Please indicate the extent to which the firm has experienced each of the following benefits due to effectiveness of Antipiracy Practices. Use the scale of 1-5; (where: 1- strongly disagrees,
2- disagree,   3- not sure,   4- agree,   5- strongly agree). Tick as appropriate.

Effectiveness of Antipiracy

	Strongly disagree (1)	Disagree (2)	Undecided (3)	Agree (4)	Strongly agree (5)
Antipiracy has created awareness on the issue of piracy					
Antipiracy has reduced piracy in the firm					
Antipiracy has led to prosecution of content pirates					
Antipiracy has increased firms revenue					
Antipiracy has enabled creation of jobs					
Antipiracy has enabled firms successfully enforce their legal rights					
Antipiracy has led to an environment which the industry can flourish in future					

Others (Please specify)
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………

SECTION F: The extent to which Antipiracy Practices by Online Firms has affected its Performance

10. Please indicate the extent to which antipiracy practices by firms has affected its performance.
Use the scale of 1-5; (where: 1- strongly disagrees,   2- disagree,   3- undecided,
4- agree,   5- strongly agree). Tick as appropriate.

Firms Performance due to Antipiracy Practices

	Strongly disagree (1)	Disagree (2)	Undecided (3)	Agree (4)	Strongly agree (5)
Antipiracy has led to increase of firms sales					
Antipiracy has increased firms profitability levels					
Antipiracy has led to increase of firms market share					

	Strongly disagree (1)	Disagree (2)	Undecided (3)	Agree (4)	Strongly agree (5)
Antipiracy has increased firms revenue					
Antipiracy has helped firms improve products quality					
Antipiracy has enabled firms improve their market ranking					
Antipiracy has improved customer satisfaction of firms consumers					

Others (Please specify)

………
………
………

THANK YOU!

APPENDIX III

List of Online Firms in Kenya

1. Jumia
2. Rupu
3. Naspers
4. Cinemax Media
5. Imax Media
6. Cloudhouse
7. Google Kenya
8. Microsoft MEA
9. Mdundo
10. Kytabu.org
11. University of Nairobi Digital Repository
12. Kenyatta University Institutional Repository
13. JKUAT Institutional Repository
14. WordAlive Publishers Limited
15. Focus Publishers Limited
16. Mvule Africa Publishers
17. Oxl.co.ke
18. Buyandsell.co.ke
19. Cheki.co.ke
20. Enzi Media
21. Storymoja Africa
22. Skiza Tunes
23. Get Mziki
24. Naisoft
25. N-Soko
26. ShopIT
27. E-sokoni
28. Click & Pay
29. New Age Infotech Limited
30. Level Thirty Six Company limited