

WHITE PAPER

How to Reduce Software Piracy in the Middle East and Africa: The Case of Kenya

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IN THIS WHITE PAPER

This White Paper reviews the impact that information technology (IT) has upon the Middle East and Africa (MEA) region's economy and society, both from a business perspective and a governmental perspective. IDC identifies software piracy as one of the most significant inhibitors to the healthy development of IT and outlines a generic roadmap to contain and reduce the phenomenon. With the help of two detailed case studies, this white paper explains how the fundamental steps of the roadmap can be implemented in practice and then focuses on the specific example of Kenya. By applying IDC's Piracy Impact Model, the white paper quantifies the economic benefits of lowering software piracy in Kenya in terms of new jobs, additional tax revenues, and GDP contribution.

EXECUTIVE SUMMARY

In today's fast-paced and globally connected society, information technologies play a pivotal role and offer solutions to almost every economic and social challenge of our era – they drive innovation and productivity, increase efficiency at work, and make everyday life easier. In emerging economies – as are the vast majority of countries in MEA – IT also represents a valuable tool to successfully tackle region-specific challenges related to the still developing nature of these economies and societies. In these countries, IT can bring education and healthcare to remote and rural areas, fight the spread of diseases, and support more efficient use of energy resources. IDC believes, however, that the role of IT further translates into more tangible and measurable benefits for today's emerging economies in terms of contribution to GDP, new company formation, more employment in both the IT industry and its overall ecosystem, and increased tax generation for governments.

Nonetheless, several factors continue to hinder the full development of IT markets in a number of countries. The Middle East and Africa as a whole had a software piracy rate of 59% in 2008, and this unauthorized copying, reproduction, transfer, and usage of copyrighted software is among the most significant threats to the IT industry in the region. However critical the phenomenon may be, IDC research shows that, by following a five-step roadmap, governments can combat and reduce software piracy effectively, as demonstrated by the successful examples of Greece and Russia.

With respect to Kenya specifically, IDC estimates that reducing the current 80% software piracy rate (2008) by 10 percentage points over four years (2.5 percentage points per year from 2010–2013) would create an additional 977 IT jobs and contribute \$73.60 million to GDP, representing an increase in total revenue for the local IT industry of \$40.01 million and additional revenue for the government of \$7.18 million in taxation.

SITUATION OVERVIEW

The Impact of IT: Why IT Is Good for Business

"You want to know the difference information technologies make? Try living without them!" While simplistic, this statement, as made by a spokesperson of the International Telecommunications Union in 2006, expresses a well-known adage: The creation and use of IT has a positive impact on a country's economy and society as a whole. However obvious this may sound, further explanation is required in terms of the following:

- ☒ The actual impacts of IT
- ☒ The level at which the impacts are felt, whether macroeconomic or microeconomic
- ☒ The extent of the effects in terms of the private and public sectors at large and the IT industry specifically

IT and the Economy: More Companies and More Jobs

At macro- and microeconomic levels, broad findings from individual country studies and results from a number of international organizations show that IT steadily adds value to the economy in terms of the following:

☒ **Positive Contribution to Company Formation:** IDC's economic impact study of this year forecasts an increase of 1.2% worldwide in the number of IT companies during the 2008–2013 period. In MEA, this is projected to be 2.7%. Is this good for the economy? Yes! The formation of new companies has an obvious positive effect on employment, but it also increases competition, improves market efficiency, and generates additional tax revenues for the government.

☒ **Positive Impact on Employment:** The IT industry provides employment to more than 36 million people worldwide, and its contribution is expected to increase employment by a compound average growth rate (CAGR) of 3.1% over the 2008–2013 period. IDC calculates that the total number of IT employees in MEA was more than 1.5 million in 2008 and projects an increase by a CAGR of 5.6% over the same timeframe. More employment means more private consumption, enhanced internal and foreign demand, and increased tax revenue.

☒ **Productivity Gains and Heightened Innovation:** The application of new technologies operates as a powerful driver for business productivity and innovation. Productivity across all organizational functions – from design to production and from sales and marketing to HR and finance – benefits from IT through the reduction in idle time, increased labor mobility, and enhanced communication. IT usage is also responsible for large quantities of product and process innovations in services and service-related industries and, to a lesser extent, in manufacturing. The effect on business is clear: Innovation-driven enterprises generally have a greater focus on research and development (R&D) activities, develop valuable internal intellectual capital, and attract and retain highly skilled workers, all of which clearly benefit a country's economy.

IT and Society: New Ways of Communicating, Working, and Doing Business

Of course, the effects of IT extend beyond the merely financial. IT is clearly changing people's everyday lives around the world by affecting the ways they work (teleworking), spend their incomes (ecommerce), communicate (IP telephony), spend their time (Web 2.0 and social networks), obtain education and training (elearning), and find information and assistance related to other important areas, such as health (ehealth) and legal support (blogs, wikis, etc.). In addition to the business community and the general public, another stakeholder benefits heavily from the introduction and use of IT – the government.

The Impact of IT: Why IT Is Good for Governments

The positive impact of IT on governments is twofold: The first is the direct positive effects on employment and taxation, and the second is indirect benefits from the widespread application of IT products and services within the framework of government-led IT initiatives.

☒ **Positive Contribution to GDP:** According to a 2009 IDC economic impact study, the revenue generated by the IT industry in the Middle East and Africa accounts for 1.7% of the GDP, and this is projected to rise to 2.2% in 2013. At a worldwide level, the IT industry's contribution to GDP was 2.5% in 2008 and is expected to be 2.8% in 2013. What does this mean in practice for the economy at large? An increase in GDP translates into more private consumption, more gross investments, more public spending, and an improved balance of trade.

☒ **Direct Effect – Tax and Employment Generation:** Evidence from IDC studies shows that the production, sale, and distribution of IT products and services generate a tax stream that represents a considerable source of income for governments. This includes VAT on hardware and software products and IT services, import tariffs on certain products, and corporate tax collected from local subsidiaries of IT vendors and from local distributors and IT services companies. Furthermore, the use of IT has a positive impact on employment rates, particularly within IT-related positions. Not only is this job-creation effect a powerful stabilizing factor for governments, but it also represents an additional source of tax generation through increased income from personal income tax, higher social security payments, and additional income related to employee payroll taxes.

☒ **Direct Effect – IT Ecosystem:** Tax-related and employment generation benefits are not restricted to just the handful of IT vendors and IT companies that might be actively operating in a country. All companies that create, sell, distribute, or service hardware and/or software contribute to the benefits of IT for governments. Similarly, literally thousands of IT professionals and organizations develop applications and services and maintain hardware and software. These entities also contribute to tax generation and create employment opportunities.

☒ **Indirect Effect – Government-Led IT Initiatives.** The production and commercialization of IT products, together with their greater incorporation into society, enable government initiatives that would not have been possible only a few years ago. Thanks to the increasing use of IT, governments can provide better services to their citizens and use public tax money more efficiently. A few select examples are indicated below:

- ❑ The creation of IT infrastructures across educational institutions supports the emergence of new educational models (distance learning schools, elearning institutions, etc.) that meet government objectives such as the need to extend education to remote areas and create new jobs through upgrades in educational infrastructures.
- ❑ eHealth investments such as digital patient information and telemedicine enhance citizen services, facilitate digital inclusion, support the development of new skills and new jobs, and, consequently, create more consensus for public administrations.
- ❑ IT-based green technologies (intelligent grids, energy efficiency, environmentally sound technologies, etc.) help government agencies focus on long-term solutions that are economically, socially, and ecologically sustainable while meeting cost cutting and budget optimization goals through a focus on energy efficiency.
- ❑ Last but not least, the introduction of new technologies and the increased use of IT is beneficial to governments per se in as much as it enables public administrations to increase productivity and offer improved services to the public – video-surveillance systems can increase security services and help police investigations, word processing and scanning software can reduce paperwork, etc.

The Impact of IT: All That Glitters Is Not Gold

Several factors continue to hinder the full development of IT markets in a number of regions, and thus the full potential of vibrant and healthy IT sectors in such countries continues to be underexploited.

The most significant IT market inhibitors at work in the MEA region can be summarized as follows:

☒ **Brain Drain and Lack of Skills and Appropriate Resources:** The so-called brain drain of skilled people is a characteristic phenomenon of developing economies and emerging markets and, as such, affects most MEA countries. For historic and cultural reasons, skilled IT workers in South Africa and the Maghreb region of North Africa, for example, are lured to more advanced job markets, such as those of the U.S., the U.K., and France. The lack of qualified workers can be compensated for by hiring expatriates from outside of the region (as is the case in many Gulf countries). When this solution is impracticable, however, the rollout of new IT products and technologies can suffer, thus neutralizing the benefits IT can deliver to a country's economy and society.

☒ **Complex Sales Cycles:** Across most MEA countries, IDC finds that IT vendors encounter complex sales cycles because of a widespread lack of transparency in contract-awarding procedures and excessive delays in releasing payments for government-led IT projects. This can lead IT companies to reduce their investments in the region and look elsewhere for business opportunities. In the long term, complex sales cycles can deteriorate a country's overall competitiveness and reduce the positive effects that IT products and services provide governments.

☒ **Lack of Bandwidth, High Costs, Low Levels of Wireless Connectivity, and Other Technical Hindrances:** The uptake of innovative IT products and services (e.g., software-as-a-service, ecommerce, and mobile solutions) can be hampered in countries in which broadband services and wireless connectivity are insufficient and relatively expensive. Success stories of regional IT centers (e.g., Dubai's Internet City project and the more recent SmartCity project in Malta) can only be possible where government incentives (e.g., favorable tax regimes for companies and individuals, travel and communication infrastructures, and satisfactory education levels) are accompanied by an appropriate level of IT services throughout the country.

☒ **Insufficient Legislative Framework and Poor Regulatory Compliance:** When intellectual property laws and their implementing acts are insufficient, or insufficiently enforced, room for distorting market mechanisms is created. In particular, numerous MEA countries – especially in Sub-Saharan Africa – have a high propensity for infringements in the area of intellectual property rights. This in turn deprives the local IT sector of precious financial resources and undermines the country's overall economic environment.

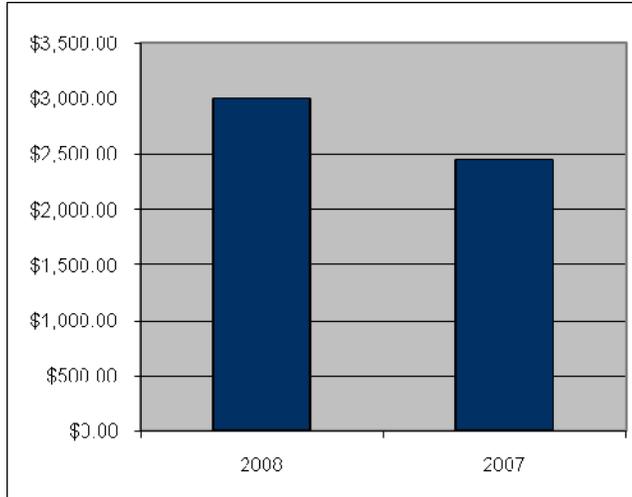
POSITIVE IMPACT OF IT AT RISK – PROTECTION OF INTELLECTUAL PROPERTY RIGHTS

Why Software Piracy Matters

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

FIGURE 1

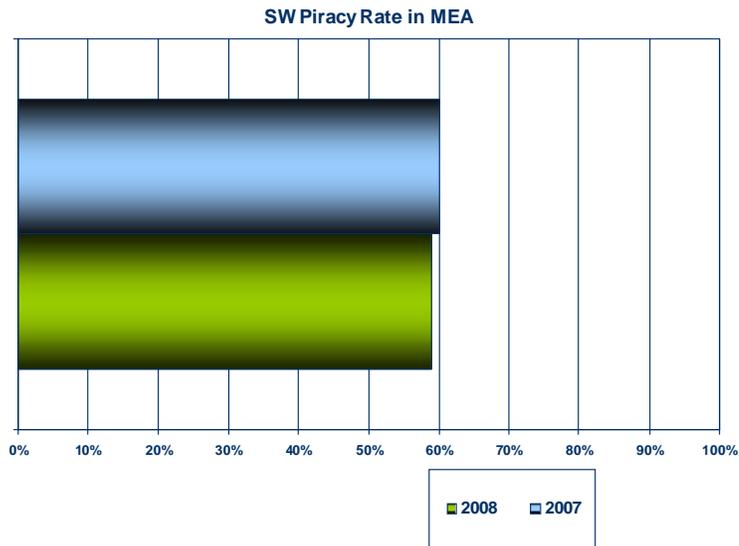
Software Piracy in the Middle East and Africa: Piracy-Related Losses (US\$M), 2008 vs. 2007



Source: IDC, 2009

FIGURE 2

Software Piracy Rate: The Middle East and Africa



Source: IDC, 2009

These prominent levels of piracy translated into an overall economic loss of almost \$3 billion across the region in 2008. Interestingly, the amount of losses attributable to

software piracy in MEA in 2008 actually increased, whereas the piracy level decreased, although moderately. Why is this so? This counterintuitive phenomenon is related to the fact that the vast majority of MEA countries are emerging markets with a much higher growth rate than developed ones. In 2008, for example, PC shipments grew 33 times faster in emerging markets than in mature markets. This rapid growth in PC shipments entailed a similarly robust growth rate in software packages, both legal and illegal – the latter growing less strongly than the former. Because the production and distribution of illegal software increased at a slower rate than that of legal software, the piracy rate in 2008 slightly decreased from that of 2007 (as a percentage of all software), yet the total loss resulting from pirated software actually increased by more than \$500 million.

This negative picture is the result of several factors, ranging from economic development models and structures to demographic factors and cultural differences. In particular, the situation in MEA seems to be characterized by some specific trends, which act as powerful piracy catalysts:

- ☒ Users' lack of proper information about software piracy
- ☒ Widespread social acceptance of software piracy and counterfeit products
- ☒ Ineffective IP laws, a lack of enforcement, and weak punitive measures

But why should governments be concerned? After all, is it not the IT industry that suffers from software piracy rather than the public sector? This is definitely not the case!

Governments of countries in which pirated software is actually developed incur both tangible and intangible losses:

- ☒ Producers of genuine, reputable software can be reluctant to develop products where counterfeiting takes place, causing an immediate loss in foreign direct investment (FDI) and a considerable miss-out effect on intellectual capital.
- ☒ Software that is legally produced in countries in which illegal software development is widespread can suffer tarnished reputations as users struggle to decipher legitimate products from counterfeit ones.
- ☒ The presence of illegal software development is a symptom of a legal system that is ill equipped to effectively protect intellectual property rights. This discourages inventiveness and entrepreneurship well beyond the IT industry, since it deters honest producers from investing resources in new products and market development across all industries and segments.

Consumers and society as a whole ultimately pay for software piracy: They end up with an inferior product, as pirated software normally offers much lower value in terms of quality, functionality, assistance, guarantees, scalability, and compatibility than legal software.

In light of the above, it is essential that MEA governments fully understand:

- ☒ The impact of software piracy is real and negatively affects the entire economy and the whole of society – action is needed to protect a country's social and economic system and not just the IT industry alone.

☒ Successful anti-piracy efforts need to be put in place now, since countries in the MEA region will continue to experience sustained economic growth over the next few years. Without immediate and effective measures to combat software piracy and improve the protection of intellectual property rights (IPR) in the region, the benefits of this economic growth could be considerably postponed or lost altogether.

What Governments Can Do Now: IDC's Roadmap to Reducing Software Piracy

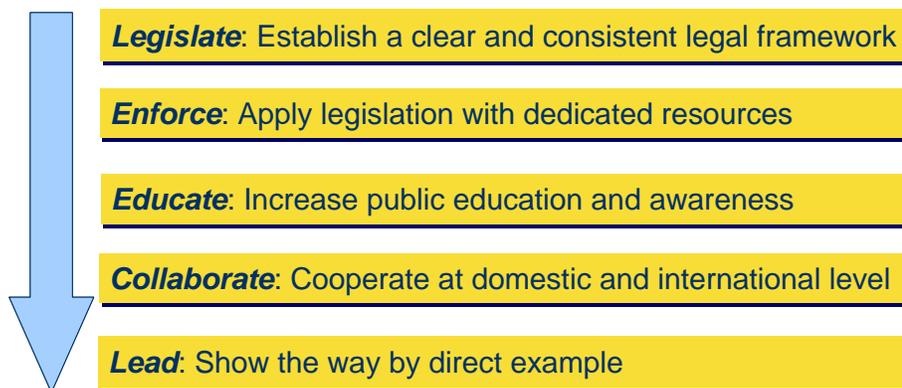
This section presents a structured reference against which governments and other public sector authorities can test their anti-piracy policies and identify possible deficiencies and subsequent corrective actions. The measures outlined below do not represent an exhaustive to-do list for governments and public sector authorities but a general roadmap that should be further adapted to local economic, judicial, political, and cultural realities.

IDC suggests five fundamental pillars to summarize the actions that governments should undertake to implement effective and durable anti-piracy policies:

- ☒ **Legislate:** Establish a clear and consistent legal framework.
- ☒ **Enforce:** Apply legislation with dedicated resources.
- ☒ **Educate:** Increase public education and awareness.
- ☒ **Collaborate:** Cooperate at domestic and international levels.
- ☒ **Lead:** Show the way by direct example.

FIGURE 3

IDC Roadmap to Reduce Software Piracy



Source: IDC, 2009

I. Legislate – Establish a Clear, Enforceable, and Consistent Legal Framework

Anti-piracy laws are not created in a vacuum. They must take into account the broader international context in which they operate and accommodate technology developments. Governments therefore need to:

☒ **Monitor Existing Anti-Piracy Legislation:** Whether in the civil and criminal codes or in specific legislative acts such as copyright laws, the anti-piracy laws need to be able to accommodate technological advances and keep pace with illegal practices, which may require updating specific aspects of particular legislation.

☒ **Establish Clear Liability Lines Stemming from Existing Laws:** Who is held accountable for piracy-oriented behavior? What types of liability are included in existing laws? For example, is the end-user who actually makes unlicensed copies the only liable party, or is the distributor also liable? Is the liability measured in terms of a causal link between the event and the damage, or are other, non-causal, connections taken into consideration? The answers to these questions are of paramount importance in terms of evaluating the efficiency of the laws in force and proposing effective amendments.

☒ **Investigate the Nature and Extent of Penalties:** Are only monetary fines set, or are criminal punitive measures also included? How easy is it to bring civil proceedings against infringers? Such measures must represent an effective deterrent to would-be software pirates.

☒ **Harmonize National Laws with International Legal Frameworks:** International and supranational legislative frameworks – such as the whole set of obligations related to the 1996 Copyright Treaty of the World Intellectual Property Organization (WIPO)¹ – represent a powerful source of inspiration and guidance for governments, even when governments are not formally requested to transpose these international measures into their own national laws.

II. Enforce – Enhance Enforcement Measures with Dedicated Resources

Software pirates should be treated as seriously as other criminal offenders. National governments can therefore improve their enforcement of intellectual property by enhancing and expanding the existing set of enforcement actions by enabling up-to-date and effective anti-piracy measures, such as:

☒ Cease and desist letters

☒ Self-audit letters

☒ Administrative actions

☒ Civil actions

☒ Criminal actions

Among the different sources currently available to conduct efficient legislative enforcement, the Trade-Related Intellectual Property Rights (TRIPS)² agreement,

¹ http://www.wipo.int/treaties/en/ip/wct/trtdocs_wo033.html

² http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm

signed in 1995 by the World Trade Organization, constitutes a cornerstone of the enforcement of intellectual property rights. The TRIPS agreement requires copyright enforcement procedures (including civil and administrative remedies, as well as criminal penalties) to be available, effective, and expeditious, as well as to constitute a powerful deterrent to potential future offenders.

National laws therefore need to devise enforcement procedures that enable all possible remedies, including civil, administrative, and criminal actions, as well as border measures, customs, tax, and communications procedures. Only by including this wide range of remedies can enforcement procedures be effective. Remedies need to be usable in practice and to avoid unnecessary, complicated, costly, and overly burdensome documentary or evidentiary requirements. In other words, they need to be available and expeditious. Remedies must also act as a deterrent, dissuading further infringements.

☒ **Creating Specialized Intellectual Property Enforcement Units:** This can be done at a national and local level, with dedicated resources to investigate and prosecute intellectual property theft. Governments aiming to fight piracy with appropriate resources might look to successful Western European anti-fraud and anti-piracy police, such as France's Brigade Financière, Greece's YPEE, and Italy's Guardia di Finanza.

☒ **Supporting the Training of Law Enforcement and Judiciary Officials:** This can be achieved by providing theoretical and practical education and technical assistance. As an example, in 2008, Business Software Alliance (BSA) promoted a series of regional law enforcement and training seminars for judges and prosecutors in Russia in cooperation with the relevant Russian authorities and with the participation of government officials from the U.S. and the European Union (EU).

III. Educate – Increase Public Education and Awareness

To reduce software piracy, a fundamental shift in the general public's attitude through public education is critical. Governments can increase public awareness as follows:

☒ **Emphasize License-Compliance Benefits:** Convey the message that license compliance benefits society as a whole and not just the software industry. Where piracy is widely practiced and socially accepted, the link between a copyright-compliant economy and the overall "brand" of the country needs to be stressed. A legal software market produces a more competitive economy, less social costs, and a better image for the country at international level.

☒ **Communicate the Risks of Using Pirated Software:** Inform businesses and the general public about the risks associated with using pirated software and encourage and reward the use of legitimate products. An example in this respect was the 2008 BSA anti-piracy "Three Monkeys" campaign employed in markets as diverse as the Czech Republic, South Africa, Sweden, and Turkey.

☒ **Launch Education Campaigns:** Education campaigns can be created to highlight the benefits of managing software as an asset. Turkey's "Man in Black" campaign represents a clear achievement in this area, as it provided materials to promote software management practices within the growing Turkish business community.

☒ **Target Young People with Educational Initiatives:** Expand initiatives aimed at educating young people in general and the academic world in particular. As

evidenced in a BSA-IDC 2008 piracy study, educational institutions tend to use more pirated software on new computers than do ordinary consumers. This is because these institutions employ more diverse distribution channels with less pre-bundled software and, consequently, with greater chance of including pirated products. Moreover, young people are among those that seem to have more difficulty in realizing the illegal and criminal nature of piracy practices. The launch of educational campaigns and Web sites (e.g., www.piensaantesdecopiar.com in South America) may therefore represent easy and affordable means for governments to combat illegal use of products covered by IPR, particularly among young people.

IV. Collaborate – Reinforce Cooperation at Domestic and International Levels

Software piracy is a pervasive global phenomenon. It requires ever-tighter collaboration between the public and private sectors, as well as between different public enforcement officials across borders.

Public/Private Partnerships (PPPs): These have proven to be an effective means of collaboration at a national level, with governments and industry increasingly involved in compliance programs to defend intellectual property rights and promote anti-piracy technical advances and technology shifts. For example, PPPs are becoming increasingly important in implementing the deployment of digital rights management programs and in promoting the replacement of desktop computers with laptops, which are more likely to come with legitimate pre-installed software. These initiatives are key indirect actions that will help keep illegal practices at bay. PPPs can also enact market and distribution changes – such as the promotion of bundling legitimate software with services (e.g., broadband Internet access) and other products – to diminish the effective use of pirated software.

Cross-Border Cooperation: Enact cross-border cooperation between police forces and other public agencies to improve coordination in multiple countries. In a complex global economy, software pirates are likely to operate from different countries. Bilateral and multilateral governmental agreements promoting collaboration between national police forces and other agencies have become fundamental.

V. Lead – Show the Way by Direct Example

Public persuasion is heavily dependent on governments, as public administrations are the largest users of software in the world. As with educational institutions, the BSA-IDC 2008 piracy study indicates that government entities show a higher rate of software piracy than ordinary consumers due to the variety of procurement sources used in the public sector. Government ministries and agencies should therefore be the first bodies to legalize business software usage in order to send a strong, clear, and credible message to the business community and the general public.

To reach this objective, the public sector needs an effective plan for managing software assets. The plan has to revolve around three basic actions:

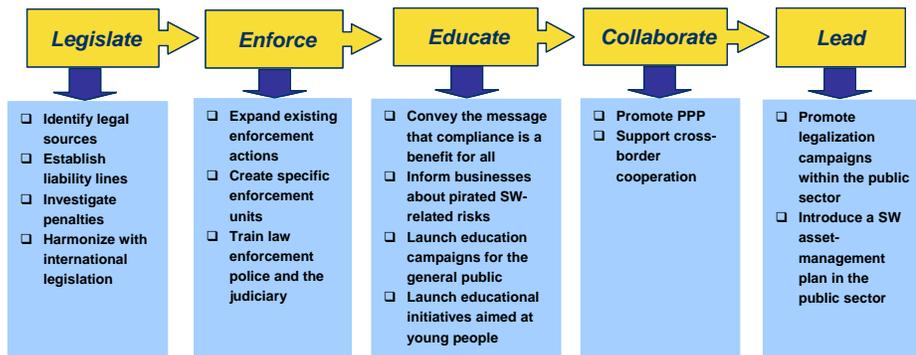
Management-Related Actions:

- The issuance of a strong and clear policy statement
- The designation of a senior official to oversee software compliance
- The performance of a comprehensive baseline inventory

- The subsequent performance of periodic and random inventories
- The maintenance of comprehensive records and periodic compliance reports
- Awareness-Building Actions:**
 - Education initiatives and awareness campaigns aimed at government personnel
 - The establishment of ongoing training programs on software management for government IT personnel
- Procurement-Related Actions:**
 - Uniform guidelines on software procurement to avoid acquisition, reproduction, or transmission of unauthorized software
 - The adoption of preventive measures to avoid the misuse of government funds

FIGURE 4

IDC Roadmap to Reduce Software Piracy – Detailed Path



Source: IDC, 2009

CONCLUSIONS

Among the various illegal practices that weaken the IT sector worldwide, the unauthorized copying, reproduction, transfer, and usage of copyrighted software collectively represent a significant threat to the IT industry in the MEA region. With a 59% piracy rate in 2008, the MEA region is the fourth-largest market for pirated software in the world. In 2008, this negative picture translated into a tangible overall economic loss of \$3 billion across the MEA region as a whole.

Key Messages for Governments in the Middle East and Africa

- ☒ The negative impacts of software piracy are real and affect the entire economy and the whole of society. Action is needed to protect each country's social and economic systems and not just the IT industry alone.
- ☒ Successful anti-piracy initiatives need to be put in place now, since countries in the MEA region will continue to experience sustained economic growth over the next few years. Without immediate and effective measures to combat software piracy, the benefits of this economic growth could be postponed or lost altogether.
- ☒ Based on concrete case studies and successful examples in Greece and Russia (please see below), governments are encouraged to implement a five-step roadmap to reduce software piracy focusing on legislation, enforcement, education, collaboration, and leadership.
- ☒ As demonstrated in the results of IDC's piracy impact study on Kenya (as outlined below), a reduction of 10 percentage points in software piracy can lead to substantial results in terms of new job creation, GDP contribution, increased local IT industry revenues, and increased tax revenues.

CASE STUDIES

"Eureka!" – Greece and Its Successful Fight Against Software Piracy

The level of piracy in Greece remains relatively high, but it has been steadily declining over the past decade. According to the BSA-IDC 2008 piracy study, Greece's piracy rate shrank from 64% in 2005 to 57% in 2008. This positive result has been widely recognized at regional and international level: The Special 301 Report on the global state of intellectual property rights protection and enforcement, published by the Office of the United States Trade Representative (USTR), removed Greece from the so called Priority Watch List and upgraded the country to the Watch List in 2003. When checked against IDC's Roadmap to reduce software piracy, Greece's success appears to be linked to three fundamental steps: legislate, enforce, and educate.

Legislation: Strong Theoretical Framework with Weaker Implementation Measures

Greece's legislation in the field of the protection of intellectual property rights is structurally sound and complete; it covers the full industry spectrum and accounts for both civil and criminal proceedings. Moreover, Greece was the first EU member state to accomplish the incorporation of the EU directives in its copyright laws, much to the satisfaction of the IT industry. Greece has also fully implemented the EU Enforcement Directive, receiving recognition from the European Commission for doing so.

Notwithstanding its solid legal basis, Greece's Copyright Act – which came into force in 1993 and has since passed through several reforms – presents a series of gaps in terms of practical implementation and everyday execution. For example, the act was amended in January 2007 to give copyright infringers the option of paying an administrative fine in lieu of criminal prosecution. The fine per se was substantial: It provided that end users caught in possession of up to 50 software CDs would be

given the opportunity to pay an administrative fine of EUR 1,000 for each CD. However, only later in 2007 did the ministers of finance and culture lay down the exact administrative procedures for imposing all related sanctions – the destruction of the seized items, oversight of product destruction, and exact methods for collecting the imposed fines. What is more, according to the IIPA 2009 Special 301 Report, most of these procedures have not yet been fully implemented. For these reasons, a further reform of the Copyright Act is currently pending before the Ministry of Culture's Hellenic Copyright Office aiming to include new actions such as the non-suspension of court-imposed fines, the requirement that court-imposed fines must be paid immediately (failing which, the sentenced offender will be held in custody until the monetary penalty has been paid), and the non-suspension of sentences pending appeal.

Whether these measures will be passed and will then contribute positively to an effective enforcement of Greece's Copyright Act remains to be seen. In the meantime, the Greek tax police have conducted a series of successful enforcement actions against business software piracy – one of which we outline below as a useful case study for other public authorities and enforcement units.

Enforcement: From Quasi Inactivity to Tax-Police Initiative

The success of the Greek tax police's anti-piracy initiative can be analyzed through the perspective of IDC's roadmap, as it entails a mixed strategy involving all three fundamental components of the "enforce" step:

- ☒ The creation of specialist enforcement units
- ☒ The expansion of existing enforcement actions
- ☒ The provision of adequate training for enforcement police units and the judiciary

Creation of Specialist Enforcement Units

YPPE, the Greek tax police, was formed during the 2005–2006 period and given additional resources and responsibilities to its predecessor – the Service of Prosecution for Economic Control (SDOE) – including increased economic inspection powers. While SDOE was Greece's police department entrusted with the fight against financial crime, today's YPEE is explicitly assigned new tasks in the field of social and economic audits, with specific reference to the protection of intellectual property rights.

Expansion of Existing Enforcement Actions

Since the beginning of the new century, the Greek tax police have intentionally been in the societal spotlight following the extension of its duties to include the fight against less traditional and more innovative forms of economic crime. In October 2007, the then SDOE issued a circular to all of its regional offices in Greece, instructing their auditors to broaden their daily audits beyond the usual checking of accounts for tax compliance purposes to explicitly include software compliance inspections.

In 2001, tax police activities were pushed a step further through the sending of a direct letter to more than 8,000 companies with more than 50 employees asking for software-related licenses and their associated invoices. In case of no reaction or unsubstantiated replies, the police carried out targeted data-mining activities – based on the number of a given company's employees, its estimated number of PCs and operating systems, and so on – and then proceeded to conduct raids on selected

companies, providing short notice deadlines to restore software license compliance; failure to restore compliance within the deadlines led directly to the opening of legal proceedings as per the Copyright Act of 1993 and its subsequent modifications.

After a temporary pause due to the 2004 general elections (and its consequent reorganization of several public agencies, including the tax police), the action was repeated in 2005 and again in 2008, when several waves of audit letters were sent to small and medium-sized enterprises (SMEs), accompanied by an undisclosed number of raids conducted by YPEE. In particular, during the last wave of audit letters (now sent by registered express mail), new features were included, such as a pre-prepared software inventory list to be confirmed by the company's legal representative in writing, thus providing legally binding evidence should prosecution be necessary.

Train Law Enforcement Police and the Judiciary

The success of these enforcement actions would not have been possible without adequate support provided to the tax police and other public implementation bodies by the Greek central government and the private sector. In particular, since 2000, the ministries of finance, culture, and public order, in collaboration with local counsels representing the Business Software Alliance and other Greek copyright protection agencies, have devised yearly action plans encompassing detailed education and engagement programs for YPEE officials.

In addition to receiving education that utilizes the positive experiences obtained in other countries and the demonstration of the economic and social losses produced by software piracy in Greece, tax police officials have been reassured of the actual feasibility of enforcement actions – as well as of their overall effectiveness – through the scheduling and guaranteeing of new internal financial resources. A series of seminars was organized to provide appropriate training to police inspectors and the judiciary. Several internal training laboratories were set up on YPEE premises to familiarize the interested parties with the practical aspects of software piracy (i.e., how to distinguish a pirated product from a legitimate one, the average price of the genuine product, the difference in price between genuine and pirated software, etc.), and a toll-free helpline was set up for assistance in processing auditors' findings and providing licensing clarifications.

Education and Awareness: Reaching Out to the General Public

The Greek tax police's initiatives were underpinned by a number of accompanying PR and risk awareness campaigns, which were conducted primarily by local IT vendor associations and BSA, but also by the Ministry of Finance. For example, in the wake of the first tax police audit letters initiative, BSA launched a nationwide campaign called "The Tax Police Are Coming: Will You Be Ready?" in order to alert the business community that the consequences of illegal software use would be real. Also, YPEE conducted a public relations campaign in specialized periodicals and via its own Web site conveying the rather intimidating message of "This is just the beginning." Similarly, the 2005 and 2008 tax police initiatives were supported by broad TV and press coverage at a national level, with the aim of going beyond the business sector and informing the wider public about the risks associated with software piracy in general and the direct consequences in terms of civil and criminal actions to be faced at the individual level.

Certainly the level of software piracy in Greece remains high, but the impressive decline over the last few years would not have been achieved without the

improvements introduced in the country's legal framework, the strengthening of the associated enforcement measures, and the organization of the necessary supporting education and awareness activities. Greece has perhaps a long way to go, but it is definitely on the right track.

"From Russia with Success" – How the Russian Government Is Cracking Down on Software Piracy

In absolute terms, Russia's level of software piracy is very high: According to BSA and IDC, out of 100 software units installed in Russia in 2008, 68 were of illegal origin. This statement, however, needs to be qualified:

☒ First, Russia has the most improved piracy rate of any country worldwide over the last four years. In the 2004–2008 period, Russia achieved an impressive 19-percentage-point drop in the piracy rate, from 87% in 2004 to 68% in 2008.

☒ Second, from a regional perspective, Russia's level of piracy is generally in line with the average rate of piracy found in Central and Eastern Europe (CEE) according to BSA and IDC (66% across CEE vs. 68% in Russia).

☒ Third, Russia is a fully fledged emerging market. In this respect, the Russian IT industry continues to grow at a fast pace, thus driving growth in the PC market, which often has the effect of boosting illegal software use. This in turn carries obvious negative effects in terms of the piracy rate and financial losses.

IDC's Roadmap to Reduce Software Piracy can be used to explain the significant decline of the software piracy rate in Russia: From legislation to leadership, the Russian government and a number of rights holders have taken major steps against the production and distribution of illegal software. However, legislation and education appear to carry more significant weight in this successful undertaking. Let us see why:

Legislation: A Comprehensive Legal Structure with an Eye on the International Scene

The Russian Federation has as a multiple array of legal resources available to defend intellectual property rights and combat illegal software-related activities. While still needing considerable improvements in terms of concrete enforcement and implementation, Russia's legal environment has undeniably made significant progress over the last few years with regard to the implementation of penalties for piracy and the harmonization of its legislative framework within the wider international framework.

Establish Clear Liability Lines and Penalties

From civil to criminal sources and from specific federal laws to administrative acts, Russia's anti-piracy legislation offers an encouraging set of legal instruments. In particular, in the 2006–2008 period, the Russian Federation promoted a series of important legal reforms with a view to entrusting authorities with more effective measures to identify potential violators, prosecute them, and make provisions for appropriate penalties.

☒ The Criminal Procedure Code, for example, was amended in 2006 to enable Russian police to refer reports of their raids to police investigators, in addition to

prosecution investigators, with a view to initiating criminal investigations, thus enabling police forces to have alternative investigation jurisdiction for copyright infringement cases.

☒ In 2007, the Criminal Code was modified to increase IPR penalties from a maximum of five years' to six years' imprisonment and to reclassify such crimes as "grave." The latter change enables prosecutors to use more effective investigative measures against large-scale operators that produce, distribute, and sell pirated products covered by IPR. Amendments to the Administrative Code of Misdemeanors were also adopted the same year, with a new article on unfair competition that punishes the introduction of illegal goods to markets, with (administrative) penalties for both individuals and legal entities.

☒ Since January 2008, the Civil Code has enabled the "liquidation of an illegal enterprise" as a remedy for legal infringements. If used effectively against software pirates, this measure could greatly improve anti-piracy enforcement actions. Also, in August of the same year, the Federal Law on Licensing officially recognized software production as an activity subject to licensing in Russia.

Harmonize Legislation with the International Legal Framework

Given Russia's own interests and technical expertise in many international areas, Russian authorities have acknowledged that a fully functioning economy requires attention to IPR at a worldwide level. On November 19, 2006, the governments of Russia and the United States signed a joint IPR agreement to formally enact U.S.-Russia bilateral market access on intellectual property rights. This agreement is seen as a stepping-stone to easing Russia's efforts toward accession to the World Trade Organization (WTO) and enables Russian authorities to obtain precious know-how and expertise in their fight against software piracy.

A significant advancement toward the harmonization of Russia's legal framework with broader international legislation was made in February 2009, when the Russian Federation formally signed to the two WIPO digital treaties and provided the country's anti-piracy legislation with a further instrument to achieve compliance with the obligations set by the WIPO. Clearly, the international responsibilities stemming from the U.S.-Russia IPR agreement and the WIPO digital treaties will take years to be fully incorporated into Russia's legislation. What is important, though, is that the Russian authorities understand that the fight against software piracy cannot be conducted in isolation and at a national level alone.

Enforcement and Education: Russia's Success with Public Authorities and Young People

As outlined in our roadmap, to ensure effectiveness and a long-lasting impact, anti-piracy education and awareness efforts should not target the business community alone, but must also include specific actions for public authorities, young people, and the general public at large. Russian authorities have clearly understood the message, and the following examples are proof thereof.

Train Law Enforcement Police and the Judiciary

The Greek case study demonstrates that public authorities, from both the judiciary (judges and prosecutors) and law enforcement (police), need to be made familiar with the ins and outs of the software piracy phenomenon. Having an all-inclusive and up-to-date legal framework is a necessary, although insufficient, precondition; to apply

and enforce the laws, adequate skills and comprehensive resources are needed. Russian public authorities have therefore worked hand in hand with local IT industry representatives to produce a comprehensive guide on software piracy for the use of the Russian police forces and magistrates. In 2007, the Nonprofit Partnership of Software Suppliers, or NPPPP (Russia's national association of software producers), and the IT Enterprise Association, or APKIT, joined forces with the Department for Economic Security and Department K (responsible for cyber crime) of the Russian Ministry of Internal Affairs to produce an approximate 300-page document titled, "Computer Piracy: The Methods to Combat It". The document, which is updated every year, represents the ultimate body of knowledge in the field of software piracy, and it includes:

- ☒ A comprehensive introduction to the phenomenon of software piracy, with current trends in Russia
- ☒ A full explanation of the basic methods needed to combat piracy
- ☒ A detailed presentation of the existing anti-piracy legal texts in the Russian Federation
- ☒ A clear-cut manual on the principal licensed software products that are currently sold in Russia: This falls directly under the jurisdiction of NPPPP members and constitutes a precious resource (of technical features, functionalities, price lists, etc.) to assist police forces and judges in combating software piracy.

Target Initiatives at Young People

Effective anti-piracy policies cannot rely on laws and enforcement alone. To eradicate the illegal practice of producing and distributing pirated software, a deeper change in mentality is required, and specific work needs to be conducted with current and emerging generations. For these reasons, the Russian Ministry of Education and Science launched the First Aid 0.1 program in 2007 with the aim of supplying all Russian schools with legal software, including OS, office applications, security software, and development tools. To this purpose, a specific software licensing agreement went into force in October 2008 (valid through 2010) and applies to all 65,000 Russian educational institutions (from kindergarten to 12th grade). This major accomplishment of the government of Russia, requiring the purchase and installation, from both Russian and foreign vendors, of literally hundred of thousands of legal software packages throughout the country, represents a huge opportunity not only for the IT industry, but also for the whole of the Russian economy and Russian society at large.

All in all, Russia is still on the priority watch list of the USTR Special 301 Report, but it has been constantly reforming its legislation and has signed the WIPO international treaties, promoting effective educational efforts and making spectacular progress in reducing the software piracy rate. A lot of work remains to be done, but one thing is certain: The Russian authorities understand that the fight against software piracy cannot be won without heavy investment in future generations.

Individual Country/Sub-Region Case Study: Kenya

Introduction: Kenya's IT Environment

Kenyan GDP expanded at a compound annual growth rate (CAGR) of 7.5% during the 2002–2007 period and is expected to expand at a CAGR of 8.2% over the 2008–2013 period.

The services sector, led by tourism and telecommunications, is one of the main growth drivers. Poverty, however, remains widespread in the country, despite the government's cautious fiscal policy and a series of privatizations. Moreover, rising food and fuel prices, coupled with disruptions in supply as a result of election-related civil unrest in early 2008, have pushed up inflation and may cause political and social instability in the short term.

The Kenyan IT market was worth \$293 million in 2008, up almost 6% year on year. IDC expects the growth to continue, with Kenyan IT spending expanding at a CAGR of 5.6% over the 2008–2013 period to \$505 million. Hardware will continue to account for the bulk of the IT market, capturing some 75% of total spending in 2013, with software and services likely to represent approximately 10% and 14%, respectively, that year. The potential of the Kenyan IT market is supported by several factors:

- ☒ **A Strong and Dynamic Telecommunications Industry:** Mobile telephony currently dominates Kenya's telecommunications market and serves as a flywheel for the entire IT industry. The recently privatized Telkom Kenya has been granted a mobile license and, in combination with public and private entities, has invested substantially in infrastructure development and maintenance.
- ☒ **Rapid Bandwidth Expansion:** The Kenyan government continued to implement its Fiber Optic National Network (FONN) and The East African Marine Systems (TEAMS) projects. This commitment to national and international fiber networks is expected to result in affordable bandwidth, which will drive the expansion of the IT industry in the country and enhance the positive effects of ICT on the economy. In February 2009, the long-awaited SEACOM fiber-optic cable arrived at Mombasa, signaling the onset of a whole new era in the telecommunications industry in Kenya and in the East African region, especially with regard to data services. The biggest impact will likely be in international bandwidth pricing, which is expected to drop gradually after operators start to recoup their investments and competition intensifies between cable projects. Currently, one megabit of bandwidth via satellite costs about \$3,000, while in two to three years, operators anticipate offering a megabit for as little as \$500. Such dramatic rate drops will boost adoption and usage levels among Kenyan businesses, government organizations, and households, which are presently constrained by high costs for relatively low speeds.
- ☒ **High Potential in Business Process Outsourcing:** Together with South Africa, Botswana, and Uganda, Kenya is among the countries that have a nascent business process outsourcing (BPO) industry, offering plenty of untapped potential. Currently, however, contact centers and other BPO services are hampered by high communication costs, which offset the initial savings on labor costs. The arrival of subsea fiber connectivity will be a big boost to existing businesses and will also attract fresh investment.

- ☒ **Increased Broadband Penetration:** Presently, most broadband connections in Kenya are in business premises; there is very little home broadband penetration due to high connection costs and recurring costs of present offerings (VSAT, CDMA, and ADSL). IDC research reveals that, on average, a 256Kbps connection costs \$650 in East Africa. Increased connections can be expected in the domestic segment, which will, in turn, stimulate local content, especially multimedia.
- ☒ **IT Market Stimulation:** The surge in broadband will drive a spike in sales of IT equipment and services over the next few years. Faster bandwidth and increased penetration will open up new spheres for content development and advanced service offerings. The benefits will go well beyond the IT industry: Through government and private partnerships, there are already initiatives to connect education institutions, both private and public, to enable elearning and enhanced research capabilities. Increased bandwidth and lower costs will enable more universities and high schools to be connected, which will provide them with more diverse tools and content for education.
- ☒ **A Relatively Stable Macroeconomic Environment:** Most sectors of Kenya's economy are expected to expand over the next few years thanks to a stable macro-economic environment; a resilient, resourceful, and increasingly confident private sector; and a rebound in the global economy. Kenya continues to be the communications and financial hub of East Africa. It enjoys the region's best transportation links, relatively advanced IT infrastructure, and relatively well-trained personnel.

The Kenyan IT sector – and the economy in general – must deal with potential short to mid-term social and political instability. The main threat is the return of civil unrest on the scale witnessed after the disputed elections in December 2007. That crisis was resolved through the creation of a coalition government, but, to ensure that no similar (or worse) crisis occurs, long-term grievances over land and the constitution must be settled and the culture of impunity must be brought to an end. In addition, and similarly to other MEA countries, Kenya needs to watch out for a number of inhibiting factors, among which the brain drain phenomenon and the difficulty of doing business stand out:

- ☒ **The Brain Drain:** As with other developing countries in the region, the effects of brain drain are particularly visible in Kenya. The absence of skilled workers negatively affects the country's capacity to build domestic institutions, which is increasingly recognized as a critical variable for long-lasting development. The brain drain thus results in increased fiscal losses and diminished economies of scale and, ultimately, leads to reduction in competitiveness. The Center for Global Development – an independent nonprofit policy research organization dedicated to reducing global poverty and inequality – estimated that Kenya's percentage of nationals with university education living abroad in the year 2000 was between 25% and 50%: Only Cape Verde, Gambia, the Seychelles, and Somalia had higher emigration rates for tertiary educated civilians in Africa. Indeed, Kenya is losing skilled IT resources in particular to South Africa, the Gulf countries, and, in some cases, the U.S. and the U.K. owing to salary disparities in the region. There is a very high turnover of staff in the Kenyan IT industry, particular on the supply side and across end-user segments (in-house IT personnel); in some instances, this churn compels systems integrators and vendors to ship in certain skills from other countries, typically for the implementation of large projects.

- ☒ **The Difficulty of Doing Business:** Out of a list of 183 countries, Kenya's economy is ranked 95th for ease of doing business according to the Doing Business 2010 report, published by the World Bank and covering the period June 2008 through May 2009. In line with most MEA countries, the complexity of sales cycles in Kenya accounts for most of this disappointing performance, as it affects the ability of vendors to manage inventory, sometimes compelling them to stock IT equipment when they receive a purchase order and sometimes causing them to implement dubious practices on stocking parts and spares, which negatively affects brand image owing to poor support.

The Economic Impact of IT in Kenya

To quantify the direct benefits of IT on local economies as the world heads toward recovery, IDC has studied the relationship between hardware, software, and IT services and the economies of 52 countries and has determined that not only does IT drive significant growth in skilled jobs, but also that spending on software creates additional jobs. With regard to Kenya, it is worth focusing on the following specific impacts:

- ☒ **Positive Impact on Employment:** IDC estimates Kenya had 30,700 people employed in IT-related positions in 2008 (7,800 in the software industry alone), and this figure is expected to rise to more than 48,000 (almost 20,000 in the software industry) in 2013. In this respect, the IT sector in Kenya will have a marked impact on the country's employment situation – more so than it will have across the MEA region as a whole. The total number of Kenyan employees in the IT sector will increase at a CAGR of 9.5% over the 2008–2013 period, versus 5.5% in the MEA region as a whole.
- ☒ **Tax-Generation Effect:** According to IDC data, the government of Kenya raised more than \$14 million in taxes from IT-related activities in 2008 and is expected to collect up to \$29 million in 2013, representing expansion at a CAGR of 15.6% over the 2008–2013 period. By way of comparison, IDC estimates IT-related tax revenue for the entire MEA region will total \$14.1 billion in 2013, expanding at a CAGR of 5.2 %.
- ☒ **Active Role in Company Formation:** IDC estimates Kenya had 360 IT companies in 2008, and expects this number to increase to well over 500 by 2013. Interestingly, the vast majority of these companies in 2013 will be IT services providers and channel players, demonstrating that a healthy IT sector does not benefit only the traditional IT hardware and software industries.
- ☒ **Positive Contribution to GDP:** New jobs, new companies, and higher tax revenues will have a positive impact on Kenya's GDP, which will continue to grow in 2010 and is expected to expand at a CAGR of 8.2% over the 2008–2013 period. The IT sector will make a significant contribution to GDP growth throughout this period. Revenue generated by IT activities represented approximately 1% of the country's GDP in 2008, and that is expected to rise to 1.4% in 2013.

TABLE 1

IT Profile and Forecast: Kenya

	2008	2009	2010	2011	2012	2013	CAGR (%)
Spending (US\$M)							
IT Hardware	216.66	230.00	263.83	314.22	388.15	456.42	16.1%
Software	33.99	36.00	40.00	47.30	54.51	63.04	13.2%
IT Services	42.77	45.00	49.04	57.88	69.94	85.34	14.8%
Total IT	293.42	311.00	352.87	419.39	512.61	604.80	15.6%
IT Contribution							
IT/GDP (%)	1.0%	1.0%	1.0%	1.1%	1.3%	1.4%	
IT Tax Revenues (US\$M)	13.85	14.68	16.66	19.80	24.19	28.55	15.6%
Total Number of IT Companies	360	370	390	426	469	514	7.4%
IT Employment							
Total Number of Employees	30,770	31,889	34,178	38,215	43,189	48,500	9.5%
Total Software-Related Employees	7,855	8,237	8,611	9,926	14,276	19,871	20.4%

Source: IDC Economic Impact Study, 2009

The Economic Benefits of Lowering Software Piracy in Kenya

Kenya's 2008 software piracy rate of 80% was one of the highest in an emerging market. The latest BSA-IDC piracy study shows Kenya's piracy rate has hovered at well above 80% for the past five years and fell only 1.0 percentage point from 2007 to 2008. As in most emerging markets, where IT is constantly expanding, Kenya's economic losses from piracy have been rising – reaching \$31 million in 2008, as compared with \$27 million in 2007. IDC estimates suggest a 10-percentage-point reduction in Kenya's piracy rate over the next four years would create 970 jobs, contribute \$74 million to GDP, and generate \$40 million in revenue for the local IT industry and an additional \$7 million in tax revenue for the government (see Table 2 below for details).

Kenya's Copyright Act was enacted in 1966 and amended in 1996 and 2001 to provide protection for computer programs, along with literary, musical, and artistic works. While incorporating the provisions of the TRIPS Agreement and the 1996 WIPO Treaties, the new law also enables the establishment of more-efficient administrative structures and enforcement mechanisms. The more distinctive new features of the new Copyright Act are as follows:

- ☒ The setting up of an administrative body, the Kenya Copyright Board, which in effect takes over the duties of the Copyright Office in the Department of the Registrar General
- ☒ The introduction of anti-piracy security devices on all audio, audio-visual, and digital works to facilitate the identification of legitimate copies
- ☒ The appointment of public prosecutors and inspectors to deal with copyright cases and help the enforcement of the rights protected under the act

Appreciation for the importance of intellectual property, however, remains low, and enforcement continues to be a major challenge. The Kenya Copyright Board, for example, has had limited success fulfilling its mandate due to a chronic lack of funding, staff, and facilities. Few anti-piracy raids were conducted in Kenya in 2008, and those that were carried out were often marred by loss of evidence or an insufficient amount of seized goods. The Act has certainly set out the maximum penalty as KSHS 800,000 (approximately \$10,000), with a maximum custodial sentence of ten years for copyright offenders, but, given the current high levels of copyright infringement, the penalties should be even more punitive and deterrent. When the raids do end up in civil and legal proceedings, court cases tend to drag on indefinitely, and, in some instances, legal issues, such as the presumption of ownership, are interpreted in favor of the defendants.

Nevertheless, against this background, it should be noted that the Kenya Copyright Board, backed by Kenyan IT industry representatives, has embarked on an intensive campaign to raise awareness of piracy-related dangers and damage to the country's economy and society, and, although software piracy remains a problem in Kenya, there have been examples of companies successfully enforcing their legal rights and obtaining full compensation in anti-piracy cases.

When benchmarked against the IDC Roadmap to Reduce Software Piracy, Kenya scores relatively well in legislation, education, and collaboration. IDC believes, however, that greater efforts should be pursued in enforcement actions and in leading by example, with the government becoming a full legal user of software, thus

triggering a virtuous emulation effect. The economic benefits of such improvements would not go unnoticed. For example, according to IDC's piracy impact study, reducing Kenya's current 80% software piracy rate by 10 percentage points over the next four years (2.5 points per year, from 2010 through 2013, inclusive) would create 970 jobs, contribute \$74 million to GDP, and generate \$40 million in revenue for the local IT industry and an additional \$7 million in tax revenue for the government. The benefits would be even more pronounced with a 15-percentage point reduction in the software piracy rate (see Table 2 below).

TABLE 2

Benefits from Reduced Piracy: Kenya

Impact	Cut in Piracy Rate	
	10 Percentage Points	15 Percentage Points
% Per Year, 2010–2013	2.5	1.3
Contribution to GDP (US\$M)	\$73.60	\$111.93
Additional Local IT Industry Revenues (US\$M)	\$40.01	\$60.84
New Jobs	977	1,467
Additional Tax Revenue (US\$M)	\$7.18	\$10.91

Source: IDC Economic Impact Study, 2009

This economic boost to the economy would add highly skilled jobs to the labor force, support the creation of new companies, and fund public services. Because most of the businesses that stand to benefit from such an improvement in the piracy rate are from IT services and the IT distribution channel, most of the revenue generated would remain in the country.

METHODOLOGY

This white paper combines IDC's secondary and primary research on IT market sizes and forecasts, published piracy rates for countries across the MEA region, IDC estimates of the economic footprints of IT on MEA economies, and local IDC analysts' knowledge and expertise. To quantify the potential benefits of lowering software piracy, IDC relies on algorithms that tie gains in the software segment to gains in the distribution and IT services segments.

For more information on the study methodology and a discussion of this issue, see *The Economic Benefits of Lowering PC Software Piracy: Methodology and Definitions*, published in January 2008.

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