



2007 STATE PIRACY REPORT

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EXECUTIVE SUMMARY

The United States has the lowest PC software piracy rate in the world. Even so, one out of five pieces of PC software put into service in the US is still illegal, and given the size of the US market, software piracy and license misuse continues to be a significant problem. In the eight states included in the study:

- Piracy rates ranged from **18% to 27%** compared to a national rate of **20%**.
- In addition to the nearly **\$15 billion** in economic losses to local business and federal and state coffers in the eight states, estimated losses to software vendors from foregone revenues in the eight states totaled **\$4.2 billion**, which is more than all other individual countries in the world excluding China, and greater than the **\$3.2 billion** of venture money invested in software companies in those states in **2007**.
- Lost revenue to technology companies also puts a strain on their ability to invest in new jobs and new technologies. For example, the **\$11.4 billion** in piracy losses to software vendors and service providers in the eight states would have been enough to fund more than **54,000** tech industry jobs.
- Software piracy also has ripple effects in local communities. For example, the lost tax revenues to state and local governments—an estimated **\$1.7 billion**—would have been enough to build **100** middle schools or **10,831** affordable housing units; hire **24,395** experienced police officers; or purchase **6,335** propane-powered transit buses to reduce greenhouse gas emissions.

The following study sheds more light on the local drivers of software piracy, as well as the economic and social impacts.

INTRODUCTION

In the most recent annual study of PC software piracy around the world, conducted by IDC for the Business Software Alliance (BSA), of 108 countries studied, the United States had the lowest piracy rate in 2007.*

Even so, one out of five pieces of software put into service in the US is still illegal. And because the US is the largest software market in the world, it incurred more revenue losses from piracy than any other country—estimated at more than \$8 billion.

Software piracy is the unauthorized copying or distribution of copyrighted software. This can be done by copying, downloading, sharing, selling, or installing multiple copies of software onto personal or work computers. Piracy can also include software downloaded from a Peer-to-Peer (P2P) site, counterfeit software, even software sold on the street.

What many don't realize or don't think about is that when you purchase software, you are actually purchasing a license to use it, not the actual software. That license is what tells you how many times you can install the software, so it's important to read the license. If you make more copies of the software than the license permits, you are pirating.

Just a check of the news is all it takes to realize piracy is still a serious problem. For example, in the first half of 2008:

- **The BSA announced more than a dozen legal settlements with companies in California, Pennsylvania, Illinois, Missouri, and Colorado for use of unlicensed software.**
- **Early in 2008, Microsoft announced the completion of enforcement actions against an international ring of software counterfeiters that began years ago when containers with \$100 million worth of software destined for US distribution were seized by US customs officials.**
- **In June 2008, BSA filed suit against a Georgia woman who sold more than 1,600 copies of counterfeit software over the course of a year on the popular auction site, eBay. She has consented to a judgment in the amount of \$250,000 and a permanent injunction. In 2007, BSA sent takedown notices to nearly 14,000 auction sites with an estimated SRP value of \$13.3 million.**
- **In a similar vein, in March the BSA announced the resolution of a case that BSA uncovered and referred to the US Justice Department. Two Florida brothers who sold pirated software over websites designed for the purpose received a combined sentence of sixty-six months in prison. While they were operating, the brothers sold pirated copies of software worth more than \$6 million.**

*Fifth Annual BSA and IDC Global Software Piracy Study, www.bsa.org/globalstudy.

To help understand PC software piracy within the US—and its effects on state economies—the BSA requested IDC develop 2007 piracy rates for a number of representative states within the United States. These were:

- Arizona
- California
- Florida
- Illinois
- Nevada
- New York
- Ohio
- Texas

Six of the states were chosen because they are the states from which the BSA receives the most piracy reports from the general public, while two others (Arizona and Nevada) were chosen to round out geographical coverage.

The eight states account for 46% of the combined PC and PC software market, but 52% (\$4.2 billion) of the total piracy losses in the US.

SCOPE OF STUDY

As with the global study, the State Piracy Study covers piracy of all packaged software that runs on personal computers (PCs). This includes operating systems, systems software such as databases and security packages, business applications and consumer applications such as games, personal finance, and reference software. The study also includes software obtained via the Internet.

The study does not include other types of software such as that which runs on servers or mainframes, which is more than half the packaged software sold, or software sold as a service, a rising segment.

Piracy within a state refers to the consumption of the pirated software, not illegal activities by importers or distributors who happen to be in the state. Those who sell pirated software may do so from one particular state, but the piracy is counted in the state where the software is put to use.

Finally, the piracy rate is for all PC software put into use in the state in 2007. This includes software being installed on computers purchased in 2007 as well as software obtained in 2007 for computers purchased prior to 2007, which we refer to as the “installed base.” As a rule, more software is deployed to the installed base than with new computers, and piracy is higher in the installed base.

PIRACY DRIVERS

The eight states selected are a diverse set. California accounts for about 13% of the US PC market, while Nevada is less than 1%. While individual consumers account for nearly 40% of PCs shipped in Illinois, they account for less than one-third of the PCs shipped in Florida. New York’s financial sector share of GSP (gross state product) is twice that of California’s, a state with an economy 70% larger. The states also vary in the amount of

their economy made up by manufacturing, small business, and other sectors. All of these factors affect the states’ piracy rates in different ways.

On a global level, the trends that increase software piracy include growth of PCs in the consumer and small-business sectors; the relative availability of pirated software—on the streets, in markets, on the Internet, or in the

distribution channel—and increasing activity in the installed base (software shipped to older PCs), particularly when major new software releases come into the market, as they did in 2007.

Trends that tend to lower PC software piracy include strong law enforcement, consumer education, advanced digital rights technology, vendor deals with original equipment manufacturers (OEMs) and distributors, special legalization programs, and effective software asset management (SAM) programs. These have proven to be fundamental pillars through which various countries have begun to have a lasting and positive effect toward decreasing overall levels of software piracy.

Within the US, rates tend to vary by state based on subtle differences between their respective PC market dynamics. These include:

- **The percent of the market attributable to individual consumers, who accounted for 39% of PC unit shipments in 2007; that percentage varied from 32% (Florida) to 41% (California) in the states studied.**
- **The ratio of the installed base of older computers to computers shipped in 2007. In the US that ratio is 4.3—meaning the 2007 installed base of older computers is 4.3 times as many units as were shipped in 2007. That ratio varied from 3.5 in New York to 5.4 in Ohio. Piracy tends to be higher for software shipped into the installed base than with software accompanying new computers.**
- **The interplay of these first two factors. While consumers account for 39% of PC shipments, because they keep their computers longer than businesses, they account for 49% of the installed base. Other IDC research indicates that consumer piracy with new computers is lower than business piracy or license misuse, but higher in the installed base.**

- **The percent of PCs and PC software obtained from sources other than brand-name vendors, retail stores, or resellers. Software piracy is higher from these non-brand sources. In the US, about 18% of software comes through these less well-known channels. In surveys supporting this study, the percent ranged from 12% in Nevada to 20% in Illinois.**
- **The conditions for license misuse, a common situation affecting companies with volume licenses. Volume license misuse generally comes as a result of not adhering to the terms of the license, e.g. having a license to distribute twenty-five copies, but fifty copies are actually deployed.**

Indeed, one of the most significant piracy drivers in low-piracy locales is license misuse. While most new business PCs come with operating systems pre-installed, and many come with applications pre-installed, in surveys conducted for this study, 67% of respondents said that a majority of the application software they deployed to older computers was done so under a volume license. Volume licenses may be held by the end user company or in the channel, and the workforce involved is always dynamic. Thus, keeping track of both the terms of the license and the actual count of deployments are paramount. In fact, the software asset management (SAM) market—worth more than \$350 million in the US in 2007—has developed products and services to help companies manage software license compliance and deployment.

On the consumer end, there is a similar problem in the well-intentioned purchase of software that seems legitimate but isn't, such as low-priced software available over retail websites and auction sites such as eBay.

PIRACY RATES AND LOSSES

Table 1 shows the 2007 PC software piracy rates and industry losses (\$4.2 billion) for the eight states studied, along with contextual information from the global study. The state rates ranged from a low of 18% to a high of 27%.

While the study methodology deals with the market as a whole and doesn't allow for breaking the rate into segments—say a piracy rate for small businesses or consumers—IDC believes that, nevertheless, the segment dynamics mentioned above are reflected in the overall piracy rate.

For instance;

- **Arizona's consumers accounted for only 34% of PC shipments, but 55% of the state's installed base of PCs. IDC believes these two factors had the biggest effect on nudging the piracy rate to 21%, above the**

national average. In the surveys, the state also had a higher-than-average use of non-brand-name sources for PCs and software.

- **In California, consumers accounted for the highest percent of PC shipments of the eight states—41%—and 54% of the installed base. On the other hand, California had a small installed base compared to 2007 shipments of new computers, with a ratio of 3.7 to 1. These two factors counterbalance each other. At the same time, the state has the highest portion of the workforce working in small business and has a higher-than-average use of volume licensing, which may lend itself to lax software management if companies fail to keep track of the number of software copies deployed. The interplay of all these dynamics led to a piracy rate of 25%, one of the higher piracy rates of the states studied.**

Table 1

2007 PC Software Piracy By State

	2007 Piracy Rate	2007 Spending Losses* (\$M) in State	2007 PC Software Market Bigger Than	Losses Greater Than Those in	Losses Greater Than # Other Countries
Arizona	21%	\$157	Denmark	Hungary	67
California	25%	\$1,360	France	Canada	98
Florida	19%	\$372	Russia	Malaysia	87
Illinois	22%	\$454	China	Ukraine	89
Nevada	25%	\$86	Turkey	Peru	52
New York	18%	\$673	Canada	Poland	95
Ohio	27%	\$447	Spain	Turkey	89
Texas	20%	\$627	Italy	South Korea	95
Total US	20%	\$8,040			

*Estimated foregone revenues from PC software piracy

- Florida consumers accounted for only 32% of the 2007 PC market, but they still accounted for 52% of the installed base. On the other hand, in the surveys the state had the lowest use of volume licensing and the smallest percent of PCs and software purchased from non-brand-name sources. The result was a piracy rate of 19%, slightly below the national average.
- Illinois has a PC usage profile that closely matches the US as a whole, with a stable consumer PC base and relatively small installed base. However, IDC believes that the Illinois installed base was more active than in most other states in 2007. In the surveys, 61% of consumers said they installed new software on older computers in 2007, compared to a national average of 51%. This helped drive the piracy rate above the national average, to 22%.
- Nevada was in much the same situation as Illinois, with a consumer PC user base that matches the US profile and one of the lowest rates of using non-brand-name sources for PCs or software (12% versus the national average of 19%). On the other hand, it had a higher reliance on volume licensing than the national average and a more active business installed base when it came to deploying software in 2007. IDC believes these latter factors outweighed the former and pulled the piracy rate up to 25%.
- New York had the smallest installed base compared to its 2007 shipments of the eight states, which is one of the reasons for a piracy rate lower than the national average, at 18%. In addition, the large number of financial firms and company headquarters helps hedge against misuse of volume licenses, as these are companies likely to invest in software asset management.
- At 27%, Ohio has the highest piracy rate of the eight states studied. It appears to be mostly the result of its large installed base, which leads the eight states at 5.4 times the number of 2007 PC shipments. The state also had a higher-than-average use of volume licensing, which means license mismanagement may be a bigger factor in the piracy rate than in other states.
- After California, Texas has the highest portion of 2007 PC shipments to consumers—40%—but it also has a small installed base relative to shipments, at a ratio of 4.1 to 1, and that installed base was not particularly active installing new software in 2007. These factors counterbalanced each other and left Texas with a piracy rate at the national average of 20%.

THE IMPACT OF PIRACY

The losses or foregone revenues from software piracy are a function of the piracy rate and the size of the state PC software market. Although piracy rates in the US are low relative to other countries, because the market is so big, the US has the largest overall losses.

If California were a country, it would have the fifth-largest PC software market in the world

after the US itself, Japan, Germany, and the United Kingdom. Its losses are greater than all of Canada's. The smallest state included in the study, Nevada, has a PC software market that is bigger than Turkey's, a country with more than twenty times the population. Nevada's losses to software piracy are greater than Peru's or Morocco's, each with more than ten times the population.

The aggregate losses from the eight states, \$4.2 billion, are bigger than in all the countries in the global study other than China and the US. The losses are also more than all the venture money invested in the software industry in 2007 in these same states (\$3.2 billion).

So, even a small amount of piracy or license misuse has an impact.

In the United States, software piracy means not only lost revenues to software vendors, which is measured in Table 1, but also lost revenues to channel firms and services firms when they find or have to deal with piracy in their client base. IDC research shows that for every dollar of software sold, there is another \$1.25 of services sold involving that software. Then there are additional revenues generated in the channel that distributes the software and some of those services.

Those aggregate lost revenues then mean lost jobs—more specifically lost funding for new jobs. Those revenues and jobs that don't exist because of software piracy also mean depressed tax revenues for the local, state, and federal governments.

Using formulas from a global study of the economic impacts of piracy, which IDC conducted for the BSA and published in early 2008 (see The Economic Benefits of Lowering PC Software Piracy, January 2008, available at www.bsa.org/upload/idc_methodology_final.pdf), IDC found that the missing revenue from software piracy in the eight states equates to \$11.4 billion in losses to in-state software ecosystems, more than 54,000 jobs, and \$3.2 billion in taxes, as shown in Table 2.

Table 2

2007 PC Software Piracy Economic Impact

	2007 Piracy Rate	Lost Services, Channel, and Software Production Revenues in State (\$M)	Lost Jobs	Lost Federal Taxes (\$M)	Lost State & Local Taxes (\$M)
Arizona	21%	\$410	1,826	\$34	\$51
California	25%	\$3,886	15,991	\$440	\$556
Florida	19%	\$966	6,118	\$135	\$154
Illinois	22%	\$1,210	5,646	\$195	\$158
Nevada	25%	\$220	1,006	\$24	\$27
New York	18%	\$1,745	8,571	\$262	\$344
Ohio	27%	\$1,217	5,500	\$135	\$165
Texas	20%	\$1,721	9,233	\$271	\$223
Total	20%	\$11,375	53,892	\$1,496	\$1,679

To put these foregone 2007 tax revenues in context, Table 3 shows what those lost state and local taxes could buy in various categories of interest to state and local governments. These equivalents were chosen based on current social and community relevance.

Table 3

2007 Piracy Losses: Economic Equivalents

	2007 Piracy Rate	Lost State & Local Taxes in 2007 (\$M)	New Middle Schools (1)	Affordable Housing Units (2)	Police Positions (Sergeant) (3)	Propane Powered Transit Buses (4)
Arizona	21%	\$51	4	362	791	193
California	25%	\$556	28	2,884	7,524	2,098
Florida	19%	\$154	11	1,199	2,503	582
Illinois	22%	\$158	11	1,229	2,566	596
Nevada	25%	\$27	2	209	436	101
New York	18%	\$344	25	1,786	3,727	1,299
Ohio	27%	\$165	8	1,430	2,829	624
Texas	20%	\$223	11	1,732	4,018	840
Total	20%	\$1,679	100	10,831	24,395	6,335

1. Using data from National Clearinghouse for Educational Facilities
2. Based on data from www.nationalpriorities.org
3. Based on data from www.salary.com
4. Based on purchases by Brownsville, TX, 30-foot coaches

REDUCING PIRACY

For companies, the first step in avoiding the risks of software piracy is awareness of the problem. Not only can the use of unlicensed software potentially trigger an external audit or even a lawsuit, it can also create security vulnerabilities, productivity breakdowns, and hidden internal support costs.

Companies, government entities, and academic institutions need to pay attention not only to their own software license management, but also the sources of their software. The next step for companies to take is implementing a system of software asset management (SAM), a growing field covering the use of special tools and services to manage software assets, maximize their productivity, and reduce their overall IT costs.

Individual consumers have a simpler task, which starts, again, with ensuring their software was acquired legally. Those who get their computers from local dealers or consultants, or even their friends down the street, need to understand the source of the software that comes with it.

Security is a real issue. In a 2006 study of the prevalence of computer viruses at websites offering pirated software or key generators, IDC found that 25% of such sites attempted to infect test computers with viruses or other unwanted software. These viruses included Trojan horses and key loggers, types of software often associated with identity theft.

Perhaps the other rule of thumb for consumers is the old adage that if the price seems too good to be true, it probably is. As mentioned above, even an established auction site such as eBay is unable to keep its site free of illegitimate software.

Perhaps the best advice for both businesses and consumers is to consider not just the risks and costs of using unlicensed software, but the benefits of using legitimate software. It simply works better than the pirated versions, which are often trial or beta copies; it often comes with free, automatic updates; and can be readily serviced by the vendor and its business partners.

Even in a country as sophisticated as the US, PC software is a bargain.

For every dollar spent on PC hardware, less than sixty-five cents is spent on software. Yet, it is the software that ultimately provides the most valued functionality. Licensed software saves money in the long run.

And the lifetime cost of maintaining and supporting a PC is many times the initial cost of the hardware and software, which means that licensed software saves money in the long run.

In summary, the evidence suggests that even in the United States, enterprises and consumers need to pay attention to software piracy and license misuse—not just because it's the right thing to do, but because it is also the smart thing to do.

If they do, and piracy drops, then the local economy will grow in gross state output, employment, and tax revenues.

STUDY METHODOLOGY

SOFTWARE PIRACY RATES AND LOSSES

IDC uses the following basic research architecture to measure software piracy rates and losses:

1. Determine how much PC packaged software was deployed in 2007.
2. Determine how much PC packaged software was paid for/legally acquired in 2007.
3. Subtract one from the other to get the amount of pirated software.

Once the amount of pirated software is known, the piracy rate can be determined as the percentage of total software installed that was not legally acquired.

Figure 1 shows the general method IDC used to determine how much software was added in 2007

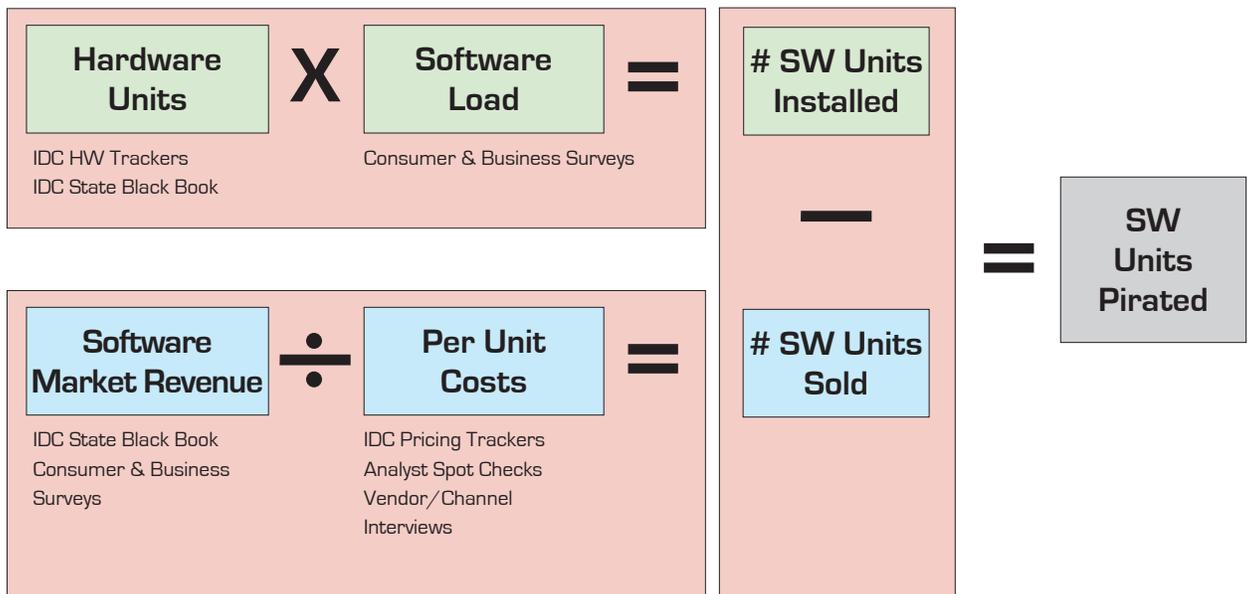
and how much was paid for. The text under each box refers to the sources of the data inputs.

To support the development of software load information, IDC surveyed 100 consumers and 100 businesses in each of the eight states.

In addition to questions about software packages installed, respondents were also asked about software source, PC source, and methods of software activation or registration. These additional questions acted as valuable qualitative inputs to validate the numeral output of the piracy model and help understand the underlying PC market dynamics.

More detailed information can be found in the global study at: http://global.bsa.org/idcglobalstudy2007/studies/methodology_globalstudy07.pdf.

Figure 1
Methodology - At - A - Glance



ECONOMIC IMPACT OF SOFTWARE PIRACY

Understanding the economic impact of piracy begins with understanding the economic impact of information technology (IT). IDC routinely studies the relationship between IT consumption production, job creation, and tax receipts. The latest study was completed as part of the BSA study in the economic impact of piracy released in January 2008 and mentioned earlier. Key inputs to the Piracy Impact Model include:

Key inputs to the study include:

- **IDC forecasts of IT spending by hardware, software, and services by state.**
- **IDC estimates of imports and exports of hardware, software, services modeled using government statistics and local information.**
- **Macroeconomic data on GDP, workforce, population, tax rates, and total government tax receipts obtained from third-party sources, chief among them the US Bureau of Labor Statistics, and US Census Bureau.**
- **IDC estimates of services and distribution channel activity that revolves around software.**
- **Piracy rates by state.**

A full description of the piracy economic impact methodology can be found at: www.bsa.org/upload/idc_methodology_final.pdf.

However, there are some key points that might be helpful:

- **IT employment includes all people employed by industry firms, from management, sales, and finance to marketing, production, sales, and administration.**
- **Taxes include sales tax revenues from the sale of software, or services; business and personal income, social, and consumption taxes. Generally, income and taxes paid by individuals account for more than taxes paid by companies or through sales taxes.**
- **Piracy losses are the same as the retail or if-sold value of the pirated software. A lengthy discussion as to whether these losses are “real” is included in the global BSA study of PC software piracy cited above.**