Third Annual BSA and IDC Global Software

PIRACY STUDY

MAY 2006

BSA®
Business Software Alliance

IDC
Analyze the Future

Third Annual BSA and IDC Global Software Piracy Study, May 2006

The IDC Global Software Piracy Study covers all packaged software that runs on personal computers, including desktops, laptops and ultra-portables. This includes operating systems, systems software such as databases and security packages, business applications and consumer applications such as PC games, personal finance and reference software. The study does not include other types of software such as that which runs on servers or mainframes or software sold as a service.

At first glance it appears there may have been little change in 2005 as a result of global efforts to reduce software piracy. The worldwide personal computer (PC) software piracy rate stayed the same at 35 percent while losses increased by over $1.6 billion.

But look again. Across the 97 countries covered in this year's study, more than half (51) dropped in piracy between 2004 and 2005; only 19 countries increased. While PC unit shipments grew by 16 percent last year, PC software licenses kept pace. Several of the largest high-piracy countries — like China and Russia — dropped considerably in reaction to a combination of vendor licensing efforts, growth in laptop shipments, government enforcement and piracy education efforts.

The growth in losses was simply a function of general market growth — the software market grew seven percent, losses from piracy grew only five percent.

Yet these gains are incremental. The median piracy rate is 64 percent — meaning half the countries studied have a piracy rate of 64 percent or higher. The global rate has remained low because it is still weighted by large developed regions and countries — the United States, Western Europe, Japan and a handful of other Asian countries.

The issues in dealing with PC software piracy in emerging markets remain —from a rapid influx of new PC users in the consumer and small business sectors, to increased availability of pirated software over the Internet and difficult enforcement and education over sometimes sprawling geographies.

So it remained in 2005 that for every two dollars' worth of PC software purchased legitimately, one dollar's worth was obtained illegally.

These are the results of the Business Software Alliance's (BSA) annual study of global trends in PC software piracy, the third conducted by IDC, the IT industry's leading global market research and forecasting firm.

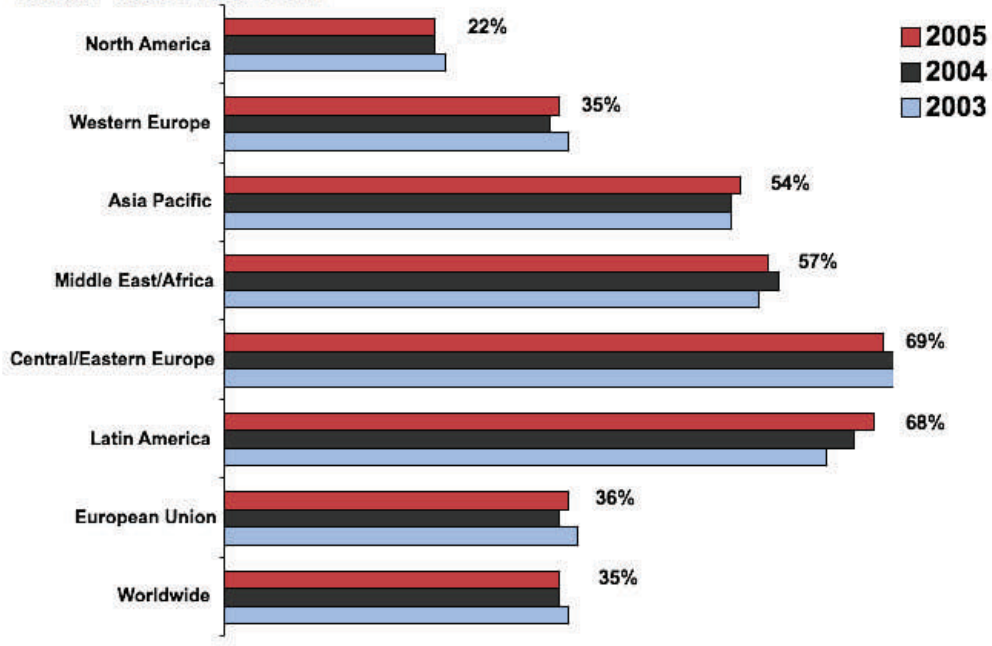
For this study, IDC used proprietary statistics for software and hardware shipments gathered through surveys of vendors, users and the channel, and enlisted IDC analysts in more than 50 countries to review local market conditions. With ongoing coverage of hardware and software markets in more than 75 countries, and with 60 percent of its analyst force outside of the United States, IDC provides a deep and broad information base from which to develop the 2005 piracy rates.

The Global Picture

Figure 1 shows the relative ranking by piracy rate of seven regions, which consist of 97 countries and six subregions as categorized by IDC. Six of these are mutually exclusive territories; the seventh — the European Union — includes countries in both Western and Central/Eastern Europe.

The PC software piracy rate increased in four of the regions, including Western Europe, Asia Pacific, Latin America and the European Union; two regions saw a decrease in their piracy rate, Middle East/Africa and Central/Eastern Europe; and North America stayed the same. Because of weighting, the worldwide average stayed the same.

Figure 1
PIRACY RATE BY REGION



The Asia Pacific region ranks lower in piracy than the other emerging regions[1] despite the fact that four of the five countries with the highest rates of piracy (Vietnam, Indonesia, Pakistan and China) are in the region. The reason for this is that two large countries in this region with relatively low piracy rates — Japan and Australia — bring down the average.

There are a number of factors that contribute to regional differences in piracy — the strength of intellectual property protection, the availability of pirated software and cultural differences. In addition, piracy is not uniform within a country; it varies from city to city, industry to industry, and demographic to demographic. In China, for instance, the central government has taken strong steps to become compliant in software licensing, yet there is a large, heterogeneous market outside the central government in which piracy is very high.

Of course, high piracy regions are also high market growth regions. While countries like the U.S., Japan, the UK and Germany are expecting growth in the mid-single digits in IT spending for the next five years, countries like India, China and Russia are expected to grow between 15 and 20 percent.

You can see this growth dynamic at work in this year's piracy rates: despite the fact that most countries in Asia Pacific went down in piracy, the overall regional rate went up a percent. This is almost solely because of China. Despite China's decreasing piracy rate, because its overall share of the region increased, the aggregate rate for the region increased with it.

The emerging markets in Asia Pacific, Latin America, Eastern Europe and the Middle East and Africa account for 30 percent of PC shipments today, but only 10 percent of spending on PC software.

Globally, businesses and consumers will spend $300 billion on PC software over the next four years, according to IDC estimates. Given the current market growth by country and current country-level piracy rates, during the same four-year period, we can expect almost $200 billion worth of PC software to be pirated.

Table 1 shows the 20 countries with the highest piracy rates and the 20 countries with the lowest piracy rates.

Table 1

2005 PC SOFTWARE PIRACY RANKINGS

20 Countries with the Highest Piracy Rates				20 Countries with the Lowest Piracy Rates			
Country	**2005**	**2004**	**2003**	**Country**	**2005**	**2004**	**2003**
Vietnam	90%	92%	92%	United States	21%	21%	22%
Zimbabwe	90%	90%	87%	New Zealand	23%	23%	23%
Indonesia	87%	87%	88%	Austria	26%	25%	27%
China	86%	90%	92%	Finland	26%	29%	31%
Pakistan	86%	82%	83%	Denmark	27%	27%	26%
Kazakhstan	85%	85%	85%	Germany	27%	29%	30%
Ukraine	85%	91%	91%	Sweden	27%	26%	27%
Cameroon	84%	84%	81%	Switzerland	27%	28%	31%
Russia	83%	87%	87%	United Kingdom	27%	27%	29%
Bolivia	83%	80%	78%	Japan	28%	28%	29%
Paraguay	83%	83%	83%	Belgium	28%	29%	29%
Algeria	83%	83%	84%	Netherlands	30%	30%	33%
Zambia	83%	84%	81%	Norway	30%	31%	32%
Venezuela	82%	79%	72%	Australia	31%	32%	31%
Botswana	82%	84%	81%	Israel	32%	33%	35%
Ivory Coast	82%	84%	81%	Canada	33%	36%	35%
Nigeria	82%	84%	84%	UAE	34%	34%	34%
Senegal	82%	84%	81%	South Africa	36%	37%	36%
Serbia/Montenegro	81%	81%		Ireland	37%	38%	41%
El Salvador	81%	80%	79%	Singapore	40%	42%	43%

This year, six new countries added to the list in Africa and Eastern Europe made it onto the top 20 list of high-piracy countries, including Kazakhstan, Cameroon, Zambia, Senegal, Ivory Coast and Botswana. Only one country fell off the list, Lebanon, after its software piracy rate dropped two points to 73 percent in 2005. But there was movement within the list: China dropped two places; Russia and Ukraine both dropped four.

There was only one change in the list of 20 countries with the lowest piracy rate: Singapore, with a two percentage point drop in piracy, displaced Portugal on the list. Portugal saw a three percent increase in piracy in 2005.

Some observations from this year's study:

- China's four point drop is encouraging. Visitors to the country can readily find pirated software for consumers, but within the government and business sectors piracy is decreasing. Earlier this year the government mandated that PC manufacturers supplying China ship only PCs with legitimately licensed operating systems, a move which could decrease piracy further.

- Russia's four percentage point drop is the result of government and industry efforts to lower piracy, as well as an increase in the shipments of laptop computers, which are more often from branded original equipment manufacturers (OEMs) than from local assemblers. But resellers also report that more consumers seem willing to buy legitimate software as the standard of living rises along with Russia's economic growth. Similar trends are taking place in Ukraine, where piracy dropped six percentage points.

- India saw a two percentage point drop in piracy, but piracy is still high considering the country's world class skills in software development; the country exports three times as much IT as it consumes. India is large enough and growing fast enough that it would support a strong local software industry if piracy were lower.

- Losses to piracy in Brazil and Mexico grew by over $100 million each while the piracy rate in both countries remained stable. Argentina's software piracy rate went up two points as PC shipments grew over 40 percent, outpacing shipments of legitimate software licenses. As in much of Latin America, over 70 percent of PCs are shipped by small, local assemblers, a fertile environment for illegal software. Laptop shipments still are not large enough to offset this dynamic.

- A number of Middle East and Africa countries saw piracy drop as a result of government and industry actions and the rapid influx of branded laptops taking market share from desktop systems supplied by local assemblers.

- In Western Europe, PC shipments in the south — Italy, Spain, Portugal — outpaced software growth, which translated into a rise in piracy. In these countries and in France, part of the issue is the number of small businesses and consumers in the market, which makes enforcement more difficult.

The Impact of Piracy

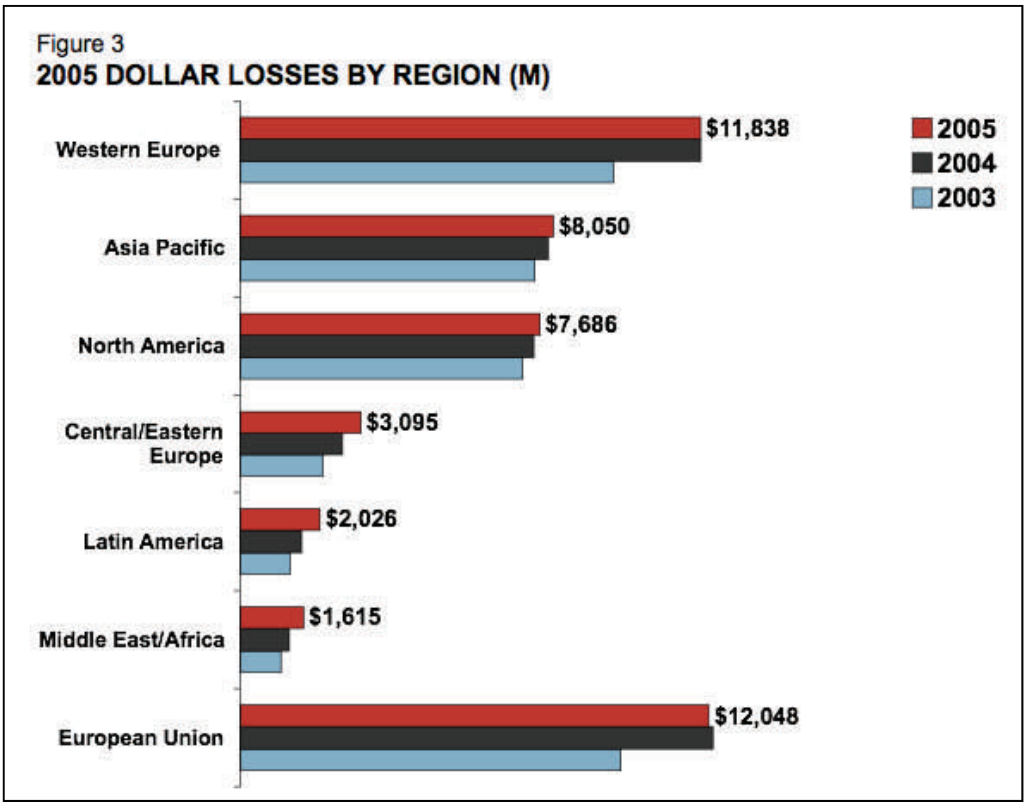
Software piracy has many negative economic consequences: local software industries crippled by competition with pirated software from abroad, and lost tax revenues and jobs from lack of a legitimate market. These costs reverberate up and down the supply and distribution chains.

In December 2005, IDC and the BSA released their second study on the economic benefits of lowering piracy.[2] In the study, IDC concluded that decreasing piracy by 10 percentage points over four years would add more than 2.4 million new jobs and almost $70 billion in tax revenues to local governments worldwide. Most of that new employment and most of an additional $400 billion in GDP would be added to local economies.

This is because, according to IDC, for every $1 in software sold, there is at least another $1.25 in services sold to design, install, customize and support that software. That software and those additional services then drive approximately $1 of channel revenue. Most of the additional services or channels revenue goes to local firms.

This broader economic impact of software piracy is significantly greater than the retail value of pirated software — labeled losses — in Figure 3 and Table 2. Losses to the industry from piracy were calculated using the known size of the legitimate software market in a country or region and using the piracy rate to derive the retail value of software that was not paid for[3]. Figure 3 shows the value of pirated software, or losses, by region.

Figure 3

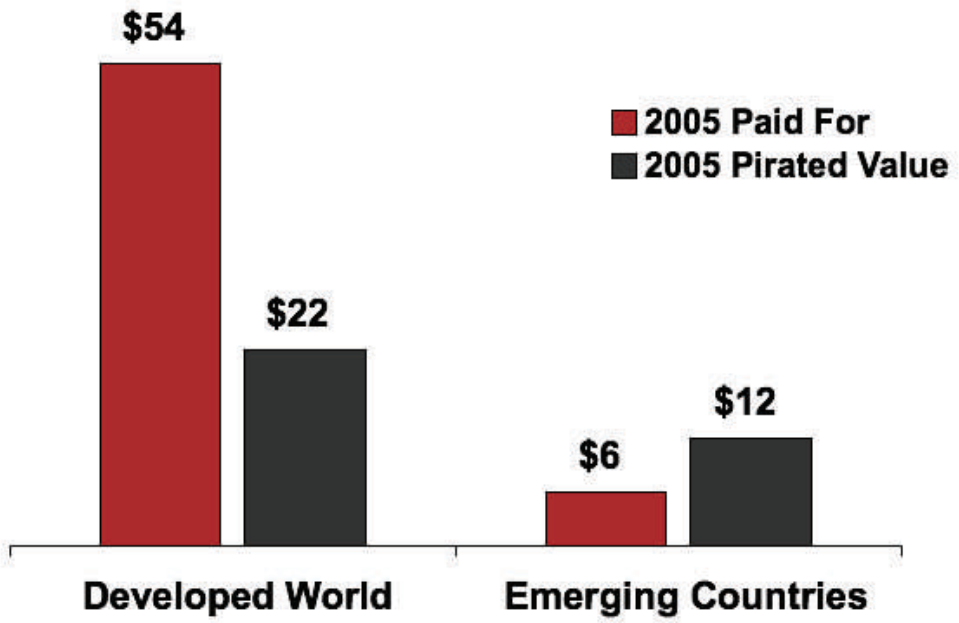


[2]Available at www.bsa.org/idcstudy

The European Union, United States and Canada experienced significant dollar losses, yet had relatively low piracy rates. This is because their markets are so large, and in such enormous markets even small piracy rates can add up to large losses.

One way to understand the relationship of piracy losses to the piracy rate is to compare the developed world [4] with emerging markets. Figure 4 shows the legitimate PC software market compared to the pirated software market. The legitimate market in the developed world is almost 10 times the size of that in emerging markets, yet the losses from software piracy are merely double.

Figure 4
LEGITIMATE VS. PIRATED MARKET
PC Software Market ($ Billions)



[3]The "retail" value of software that came bundled with a personal computer was considered to be the share of the retail price of the system attributable to software. Software that was legitimately free (such as shareware or some open source software) was not considered pirated.

[4]Assumed here to be the United States, Canada, Western Europe, Australia, New Zealand, Japan, Hong Kong, Singapore, South Korea and Taiwan

In the end, no country is immune from the impact of software piracy. Table 2 shows the countries with the greatest dollar value of pirated software.

Table 2
RANKINGS BY 2005 PC SOFTWARE PIRACY LOSSES

Countries with $150 Million or More

Country	$M	Country	$M
United States	$ 6,895	Switzerland	$ 376
China	$ 3,884	Australia	$ 361
France	$ 3,191	Sweden	$ 340
Germany	$ 1,920	Indonesia	$ 280
United Kingdom	$ 1,802	Turkey	$ 268
Russia	$ 1,625	Thailand	$ 259
Japan	$ 1,621	Belgium	$ 257
Italy	$ 1,564	Ukraine	$ 239
Canada	$ 779	South Africa	$ 212
Brazil	$ 766	Denmark	$ 199
Spain	$ 765	Argentina	$ 182
Netherlands	$ 596	Saudi Arabia	$ 178
India	$ 566	Venezuela	$ 173
Mexico	$ 525	Norway	$ 169
South Korea	$ 400	Greece	$ 157
Poland	$ 388	Finland	$ 156

Piracy Trends

This is the third year in which IDC has studied global software piracy for the BSA using a consistent methodology and encompassing the full PC packaged software market. As such, IDC has begun to see some underlying trends.

Whether piracy goes up or down is the result of a complex equation that includes education and enforcement, new users coming into the market, easier access to pirated software, and external factors such as shifting political conditions. We also see issues such as culture, institutional effectiveness, and even geography having an impact on the ability of countries to decrease piracy.

We also see that often low-piracy countries make the biggest percentage drops in piracy: a three percent drop in countries like Germany, Finland and Ireland is a significant achievement. At the same time, high-piracy countries can often make the biggest absolute drops: China and the Ukraine are down 6 percentage points, Russia is down 4 points.

Yet there are anomalies: India, with its huge software export business and a piracy rate of 72 percent, higher than most countries in the Middle East; and France, a generally low-crime nation yet with a rising piracy rate.

It also seems that lowering software piracy is a matter of continual work on multiple fronts. This means providing more education, improving enforcement, and encouraging better asset management for businesses. The new trend toward delivering service-based software may offer more insulation against piracy.

Unfortunately, the influx of new users in emerging markets — mostly consumers and small businesses — and the increased availability of pirated software, particularly over the Internet and peer-to-peer (P2P) networks is putting upward pressure on piracy rates. Already over 60 percent of Internet traffic is driven by P2P downloading, and 2006 will see 100 million new Internet users come on line according to IDC. By the end of the year the number of Internet users will top one billion. The fastest-growing Internet populations are in emerging markets: between the end of 2005 and the end of 2009, more than 100 million new Internet users will come from China, India and Russia alone.

Online piracy will be facilitated by increases in transmission speeds since faster connections enable users to send and download large files, such as software programs, more quickly. According to IDC estimates, in 2005, 30 million more households worldwide gained broadband access, expanding the total number of broadband households to just fewer than 160 million. IDC predicts that by the end of 2009, over 270 million households will have broadband connections.

How to Reduce Software Piracy

Lowering piracy around the world will take work and investment — but it is work and investment that can pay off for the countries involved. As IDC has shown, a strong local software industry can be an incredible economic engine.

In order to unlock the vast new jobs, business opportunities, revenues and economic growth that the IT sector can produce, tangible steps need to be taken to protect intellectual property and reduce software piracy.

The key to stemming piracy comes from education and proactive, government-led efforts.

Five Concrete Steps for Reducing Software Piracy

- **Implement the WIPO Copyright Treaty**
  In 1996, in direct response to the growing threat of Internet piracy, the World Intellectual Property Organization (WIPO) adopted new copyright treaties to enable better and more effective enforcement against digital and online piracy. An estimated one billion people around the globe will have Internet access by the end of this year — increasing the power and potential of software but also opening new doors for pirates to distribute their wares. In order to ensure protection of copyrighted works in the digital age, countries need to update national copyright laws to implement the obligations of the WIPO copyright treaties. Among other things, these measures make sure that copyrighted software cannot be pirated by ensuring that protected works are not made available online without the author's permission, and that copy protection tools are not hacked or circumvented.

  Many countries have already taken steps to improve and enforce their laws. However, there is still more progress that can be made.

- **Create Strong and Workable Enforcement Mechanisms as Required by TRIPS**
  Strong copyright laws are essential, but meaningless without effective mechanisms to enforce them. Governments must fulfill their obligations under the World Trade Organization's (WTO) Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPs) by adopting and implementing laws that meet international norms for IP rights protection and enforcement.

- **Step Up Enforcement With Dedicated Resources**
  Too often, software thieves are not treated as seriously as other criminals, and the punishment is too insignificant to be an effective deterrent. Countries can elevate their enforcement of intellectual property by:

  a) creating specialized intellectual property enforcement units at the national and local levels, and providing dedicated resources to investigate and prosecute intellectual property theft,

  b) increasing cross-border mutual cooperation among police and other enforcement agencies to improve coordination among law enforcement in various countries, and

  c) supporting training of law enforcement and judiciary officials and providing better technical assistance to ensure that the people on the front lines of piracy enforcement are equipped with the tools they need to deal with the changing nature of intellectual property theft.

- **Increase Public Education and Awareness**
  Reducing software piracy often requires a fundamental shift in the public's attitude toward software piracy. Public education is a critical component of any successful effort. Governments can increase public awareness of the importance of respecting creative works by informing the public about the consequences of disobeying the law, expressing their intent to strictly enforce those laws and encouraging the use of legitimate software. Some of the most successful efforts stem from comprehensive public education campaigns launched jointly by government and industry.

- **Lead by Example**
  Because governments are the largest users of software in the world, one of the most effective mechanisms for public persuasion stems from governments themselves sending a strong and clear message that the government will not tolerate piracy, and is actively managing its own software assets. This can be achieved by implementing software management policies to set an example the private sector should follow. For a government to demonstrate its commitment to enforcing intellectual property protections in the private sector, it must demonstrate that it is willing to do so in the public sector as well.

Table 3

2005 GLOBAL PC SOFTWARE PIRACY

	PIRACY RATES			PIRACY LOSSES		
Country	**2005**	**2004**	**2003**	**2005 $M**	**2004 $M**	**2003 $M**
Australia	31%	32%	31%	$ 361	$ 409	$ 341
China	86%	90%	92%	$ 3,884	$ 3,565	$ 3,823
Hong Kong	54%	52%	52%	$ 112	$ 116	$ 102
India	72%	74%	73%	$ 566	$ 519	$ 367
Indonesia	87%	87%	88%	$ 280	$ 183	$ 158
Japan	28%	28%	29%	$ 1,621	$ 1,787	$ 1,633
Malaysia	60%	61%	63%	$ 149	$ 134	$ 129
New Zealand	23%	23%	23%	$ 30	$ 25	$ 21
Pakistan	86%	82%	83%	$ 48	$ 26	$ 16
Philippines	71%	71%	72%	$ 76	$ 69	$ 55
Singapore	40%	42%	43%	$ 86	$ 96	$ 90
South Korea	46%	46%	48%	$ 400	$ 506	$ 462
Taiwan	43%	43%	43%	$ 111	$ 161	$ 139
Thailand	80%	79%	80%	$ 259	$ 183	$ 141
Vietnam	90%	92%	92%	$ 38	$ 55	$ 41
Other AP	82%	76%	76%	$ 29	$ 63	$ 37
TOTAL ASIA	54%	53%	53%	$ 8,050	$ 7,897	$ 7,555
Albania	76%	77%		$ 9	$ 7	
Bosnia	69%	70%		$ 13	$ 12	
Bulgaria	71%	71%	71%	$ 41	$ 33	$ 26
Croatia	57%	58%	59%	$ 51	$ 50	$ 45
Czech Republic	40%	41%	40%	$ 121	$ 132	$ 106
Estonia	54%	55%	54%	$ 18	$ 17	$ 14
Hungary	42%	44%	42%	$ 106	$ 126	$ 96
Kazakhstan	85%	85%	85%	$ 69	$ 57	
Latvia	57%	58%	57%	$ 20	$ 19	$ 16
Lithuania	57%	58%		$ 25	$ 21	$ 17
Macedonia	70%	72%		$ 9	$ 8	
Poland	58%	59%	58%	$ 388	$ 379	$ 301
Romania	72%	74%	73%	$ 111	$ 62	$ 49
Serbia/Montenegro	81%	81%		$ 104	$ 93	
Russia	83%	87%	87%	$ 1,625	$ 1,362	$ 1,104
Slovakia	47%	48%	50%	$ 44	$ 48	$ 40
Slovenia	50%	51%	52%	$ 33	$ 37	$ 32
Ukraine	85%	91%	91%	$ 239	$ 107	$ 92
Other CIS	96%	90%	91%	$ 69	$ 64	$ 112
Other EE			72%	-	-	$ 61
TOTAL CEE	69%	71%	71%	$ 3,095	$ 2,615	$ 2,111
Argentina	77%	75%	71%	$ 182	$ 108	$ 69
Bolivia	83%	80%	78%	$ 10	$ 9	$ 11
Brazil	64%	64%	61%	$ 766	$ 659	$ 519
Chile	66%	64%	63%	$ 109	$ 87	$ 68
Colombia	57%	55%	53%	$ 90	$ 81	$ 61
Costa Rica	66%	67%	68%	$ 19	$ 16	$ 17
Dominican Republic	77%	77%	76%	$ 8	$ 4	$ 5
Ecuador	69%	70%	68%	$ 17	$ 13	$ 11
El Salvador	81%	80%	79%	$ 8	$ 5	$ 4
Guatemala	81%	78%	77%	$ 14	$ 10	$ 9
Honduras	75%	75%	73%	$ 4	$ 3	$ 3
Mexico	65%	65%	63%	$ 525	$ 407	$ 369
Nicaragua	80%	80%	79%	$ 2	$ 1	$ 1
Panama	71%	70%	69%	$ 8	$ 4	$ 4
Paraguay	83%	83%	83%	$ 10	$ 11	$ 9
Peru	73%	73%	68%	$ 40	$ 39	$ 31
Uruguay	70%	71%	67%	$ 9	$ 12	$ 10
Venezuela	82%	79%	72%	$ 173	$ 71	$ 55
Other LA	82%	79%	81%	$ 32	$ 6	$ 7
TOTAL LATAM	68%	66%	63%	$ 2,026	$ 1,546	$ 1,262

	PIRACY RATES			PIRACY LOSSES		
Country	**2005**	**2004**	**2003**	**2005 $M**	**2004 $M**	**2003 $M**
Algeria	83%	83%	84%	$ 66	$ 67	$ 59
Bahrain	60%	62%	64%	$ 22	$ 19	$ 18
Botswana	82%	84%	81%	$ 12		
Cameroon	84%	84%	81%	$ 5		
Cyprus	52%	53%	55%	$ 13	$ 9	$ 8
Egypt	64%	65%	69%	$ 80	$ 50	$ 56
Israel	32%	33%	35%	$ 84	$ 66	$ 69
Ivory Coast	82%	84%	81%	$ 23		
Jordan	63%	64%	65%	$ 19	$ 16	$ 15
Kenya	81%	83%	80%	$ 20	$ 16	$ 12
Kuwait	66%	68%	68%	$ 65	$ 48	$ 41
Lebanon	73%	75%	74%	$ 34	$ 26	$ 22
Mauritius	60%	60%	61%	$ 3	$ 4	$ 4
Morocco	68%	72%	73%	$ 55	$ 65	$ 57
Nigeria	82%	84%	84%	$ 82	$ 54	$ 47
Oman	63%	64%	65%	$ 22	$ 13	$ 11
Qatar	60%	62%	63%	$ 21	$ 16	$ 13
Reunion	40%	40%	39%	$ 1	$ 1	$ 1
Saudi Arabia	52%	52%	54%	$ 178	$ 125	$ 120
Senegal	82%	84%	81%	$ 6		
South Africa	36%	37%	36%	$ 212	$ 196	$ 147
Tunisia	81%	84%	82%	$ 54	$ 38	$ 29
Turkey	65%	66%	66%	$ 268	$ 182	$ 127
UAE	34%	34%	34%	$ 45	$ 34	$ 29
Zambia	83%	84%	81%	$ 2		
Zimbabwe	90%	90%	87%	$ 6	$ 9	$ 6
Other Africa	84%	84%	81%	$ 63	$ 124	$ 84
Other ME	91%	93%	92%	$ 154	$ 70	$ 51
TOTAL MEA	57%	58%	56%	$ 1,615	$ 1,248	$ 1,026
Canada	33%	36%	35%	$ 779	$ 889	$ 736
Puerto Rico	47%	46%	46%	$ 12	$ 15	$ 11
United States	21%	21%	22%	$ 6,895	$ 6,645	$ 6,496
TOTAL NA	22%	22%	23%	$ 7,686	$ 7,549	$ 7,243
Austria	26%	25%	27%	$ 131	$ 128	$ 109
Belgium	28%	29%	29%	$ 257	$ 309	$ 240
Denmark	27%	27%	26%	$ 199	$ 226	$ 165
Finland	26%	29%	31%	$ 156	$ 177	$ 148
France	47%	45%	45%	$ 3,191	$ 2,928	$ 2,311
Germany	27%	29%	30%	$ 1,920	$ 2,286	$ 1,899
Greece	64%	62%	63%	$ 157	$ 106	$ 87
Ireland	37%	38%	41%	$ 93	$ 89	$ 71
Italy	53%	50%	49%	$ 1,564	$ 1,500	$ 1,127
Malta	45%	47%	46%	$ 5	$ 3	$ 2
Netherlands	30%	30%	33%	$ 596	$ 628	$ 577
Norway	30%	31%	32%	$ 169	$ 184	$ 155
Portugal	43%	40%	41%	$ 104	$ 82	$ 66
Spain	46%	43%	44%	$ 765	$ 634	$ 512
Sweden	27%	26%	27%	$ 340	$ 304	$ 241
Switzerland	27%	28%	31%	$ 376	$ 309	$ 293
United Kingdom	27%	27%	29%	$ 1,802	$ 1,963	$ 1,601
TOTAL WE	35%	34%	36%	$ 11,825	$ 11,856	$ 9,604
European Union	36%	35%	37%	$ 12,048	$ 12,151	$ 9,786
Total WorldWide	35%	35%	36%	$ 34,297	$ 32,711	$ 28,803

Study Methodology

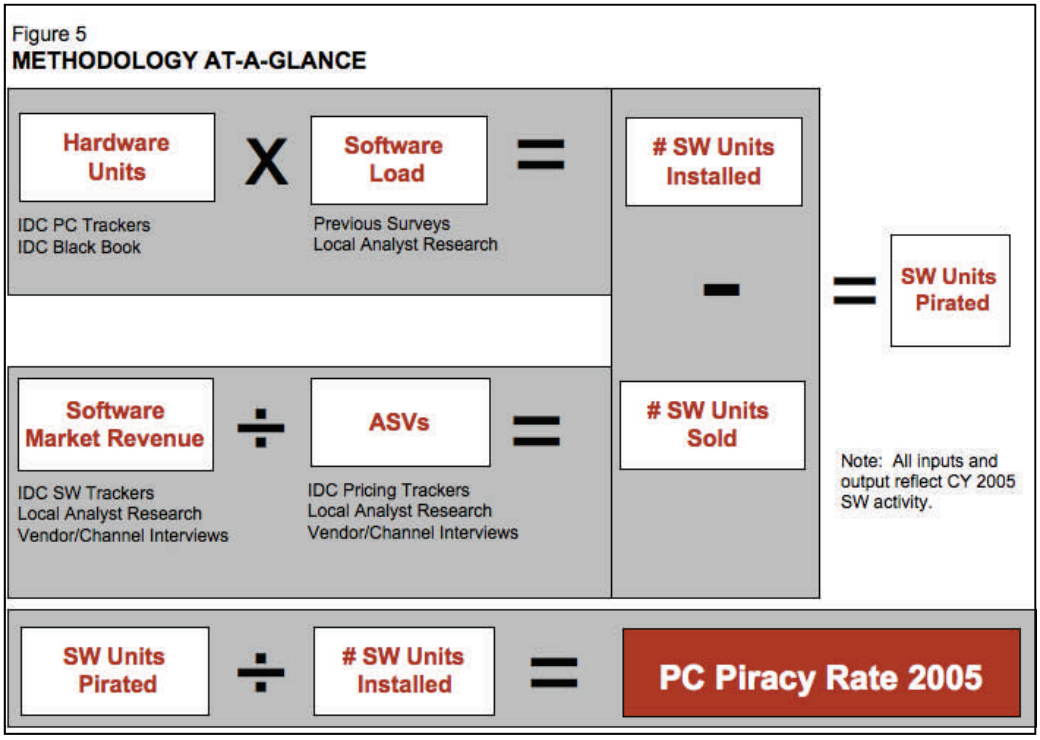
IDC used the following basic research architecture to measure piracy rates and dollar losses.

1. Determine how much packaged software was put into use in 2005.
2. Determine how much packaged software has been paid for/legally acquired in 2005.
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 5 shows the general method IDC used to determine how much software was added in 2005 and how much was paid for. The text under each box refers to the sources of the data inputs.

Figure 5
METHODOLOGY AT-A-GLANCE



Software Categories Examined

In the 2003, 2004 and 2005 software piracy studies, IDC calculated piracy on all software that runs on personal computers, including desktops, laptops and ultraportables. The categories include operating systems, systems software such as databases and security packages, and applications software such as office automation packages, finance and tax packages, PC computer games and industry-specific applications. IDC excludes routine device drivers and free downloadable utilities, such as screen savers.

In its calculations of the total software put into use during the year, free open source software, freeware and shareware were considered legitimate software and were not considered pirated. Hence, in calculating piracy, IDC counted this as paid-for software with a price of $0. Any open source software that is paid for would automatically show up as legitimate software based on IDC's methodology of taking market-spending figures to compute units of legitimate software put into use in the year.

Year-to-Year Comparisons and Exchange Rates

All dollar figures for a year are in constant dollars from the year before, so exchange rates can impact direct comparisons of dollar losses year by year. For instance, in the 2005 study we published 2004 losses of $32.7 billion, almost $4 billion more than the losses in 2003. Yet because the dollar fell against most major currencies that year, approximately half of that difference could be explained by exchange rate fluctuations. In 2005, exchange rates fluctuations were not so pronounced.

Equating the Value of Pirated Software To Losses

For the 12 years that the Business Software Alliance has been publishing PC software piracy rates, it has equated the value of pirated software to industry "losses." This has often led to questions as to whether these losses are real or not.

While not every piece of pirated software would be purchased if piracy rates were to go down — some will be substituted, some not used — at the same time, lower piracy rates yield more economic activity that stimulates more software production and purchases.

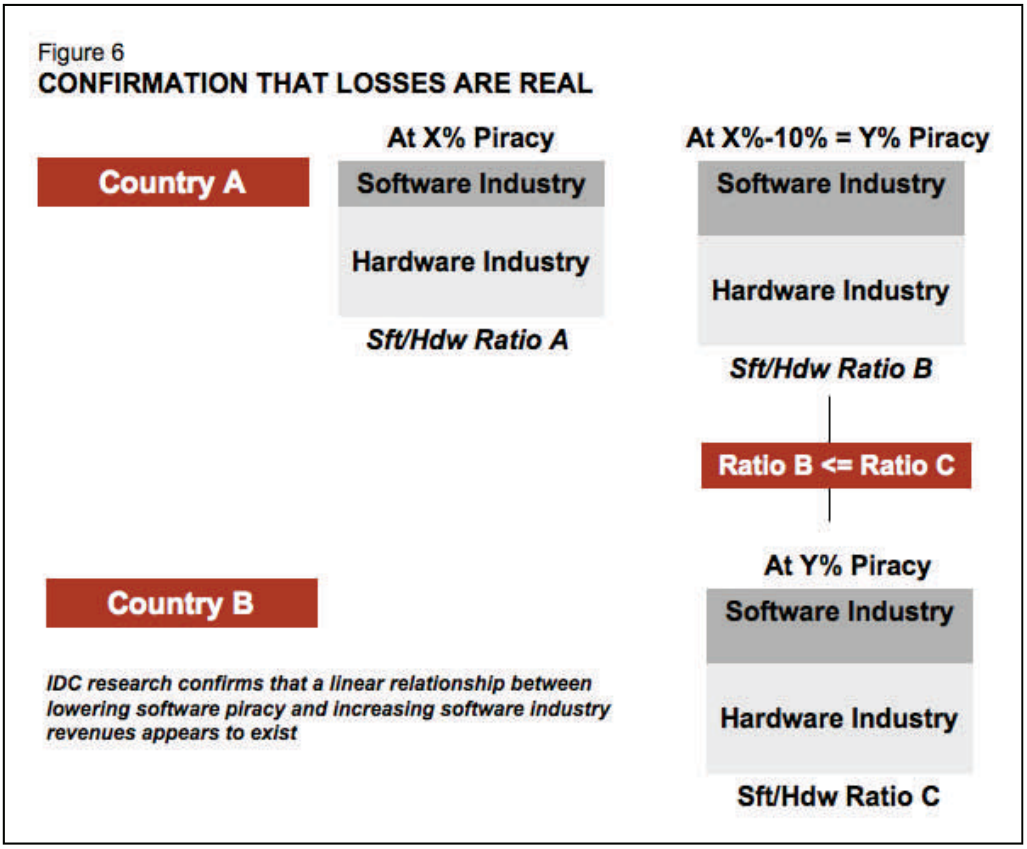
IDC has confirmed this by analyzing the ratio of software spending to hardware spending for the countries in the study, and finds that, in general, countries with higher piracy rates had a lower software-to-hardware ratio. Adding calculated software gains from lowering piracy 10 points almost always led to a software-to-hardware ratio that was still lower than countries with a piracy rate at the new target.

When done by cohort — collections of countries with similar piracy rates — if each cohort were to lower its piracy rate 10 points and grow the software industry by the amount of the software that had previously been pirated, in all cases that cohort had a smaller software industry than the cohort with the next lowest piracy rate average.

This leads us to the conclusion that there is a strong relationship between lowering piracy and raising industry revenues.

Figure 6 illustrates the process of comparing countries that we used in the economic impact study of lowering piracy.

Figure 6
CONFIRMATION THAT LOSSES ARE REAL



The Step-by-Step Process

The following information provides a more detailed description of IDC's methodology process and its definition of terms.

PC shipments
Quarterly, IDC collects detailed PC shipment tracking data on more than 75 countries. For the additional 25-plus countries and markets, the data were either collected in-country or modeled regionally based on IDC's rest-of-region estimates. The basic tracking data are generated from suppliers, including local suppliers. IDC's definition of a PC includes desktops, laptops and tablets, but excludes handhelds and PCs used as servers, either singly or in clusters.

PC installed base
The installed base is captured as part of IDC tracking exercises.

Software revenues
Captured annually in more than 70 countries by IDC software analysts around the world. Revenues are gathered from interviews with in-country suppliers and cross-checked with global numbers and financial statements. For the countries not normally covered by IDC, the data were either collected in-country or modeled regionally based on IDC's rest-of-region estimates.

Software shipments (legitimate)
These were derived using average system values estimated country-by-country and regional analysis for five software categories (*e.g.*, collaboration, office, security, operating systems, other). Prices were gathered from IDC's pricing trackers, local research and interviews with the channel. They included adjustments for OEM and channel-loaded software as well as software from local suppliers. Software unit shipments were derived by taking revenues and dividing by the average system value. These shipments represent the legitimate software installed during the year.

Software load
The number of software units installed and/or pre-installed (OEM) on PCs during the year, both newly shipped PCs and PCs already in the installed base. To obtain the number of software units for each type of hardware platform, as a baseline in 2003, we surveyed consumers and businesses in 15 countries: Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Dominican Republic, Guatemala, Kuwait, Malaysia, Mexico, Romania, Spain, Taiwan and the United States. The results of these surveys were used to populate IDC's input models for the other countries. For 2004 and 2005, IDC updated these models based on additional local country research, interviews with users and the channels, and spot inventories.

Within the software load, IDC accounted for:

- Software running on new computers
- New software running on existing computers
- Software obtained from retired computers
- Software obtained for free as shareware or open source
- Software running on Windows and non-Windows OS

Total software base
The total amount of software, legitimate and pirated, installed during the year. It is obtained by multiplying the number of PCs receiving new software during the year by the average number of software packages per PC that were installed in 2005.

Pirated software
The difference between paid-for or legitimate packaged software units and the total software base.

Piracy rate
Total pirated software. Total software put into use in 2005 minus legitimate software put into use, divided by the total software installed.

Regional piracy rate
The piracy rate for the region based on the amount of pirated software in the region divided by the total amount of software installed in the region during 2005.

Losses
The retail value of pirated software. It is calculated using the size of the legitimate software market and the piracy rate. The actual formula is: Value of Pirated Software = (Legitimate Market)/ (1 - Piracy Rate) – Legitimate Market.

By using this calculation, IDC derived what should be considered the end-user spending value of pirated software. For shrink-wrapped software sold in stores, it is the retail price, and for factory- or channel-loaded software, it is the share of retail system value attributed to that software.

IDC's value of pirated software represents the "losses" to the industry, including both international and local in-country software vendors and local distributors and retailers.

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