

FOURTH ANNUAL BSA AND IDC GLOBAL SOFTWARE

> PIRACY STUDY

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BSA[®]

BUSINESS SOFTWARE ALLIANCE

2006 PIRACY STUDY

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.

Progress was made in 2006 in the fight against software piracy. Of the 102 countries covered in this year's study, the piracy rate dropped in sixty-two countries from 2005 to 2006. The piracy rate increased in thirteen countries. However, because the worldwide personal computer market grew much faster in higher-piracy countries and regions, the worldwide personal computer (PC) software piracy rate remained at 35% for a third consecutive year. At the same time, because the size of the market grew significantly in 2006, losses from piracy at that rate rose by more than \$5 billion, a 15% increase over 2005.

While the worldwide weighted average piracy rate is 35%, the median piracy rate is 62%, meaning half of the countries studied have a piracy rate of 62% or higher. In just under one-third of the countries, the piracy rate is higher than 75%. Although some high-profile countries — China and Russia — saw significant drops in piracy, they also commanded a higher percent of the worldwide market, and this consequently prevented the worldwide average from dropping.

China's piracy rate dropped four percentage points for the second consecutive year and has dropped ten percentage points in the last three years, from 92% in 2003 to 82% in 2006. By reducing China's piracy rate by ten percentage points over three years, \$864 million in losses was saved, according to IDC. The reduction in the piracy rate and the savings are the result of government efforts to increase the use of legitimate software within its own departments, vendor arrangements with PC suppliers to use legitimate software, and increasing industry and government education and enforcement efforts. The legitimate software market in China grew to nearly \$1.2 billion in 2006, an increase of 88% over 2005. Since 2003, the legitimate software market in China has grown over 358%.

Russia's 3% drop to 80% in 2006 follows a 4% drop in 2005. Russia's piracy rate has dropped seven percentage points since 2003, a result of government and industry efforts to lower piracy and, as with China, more arrangements between software vendors and PC suppliers to increase the use of legitimate software. In addition, the increase in discretionary personal income as a result of Russia's fast-growing, oil-driven economy seems to have had a positive effect on user willingness to buy legitimate software.

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

So it remains in 2006 that for every \$2.00 worth of software purchased legitimately, \$1.00 worth was obtained illegally. In half the countries, however, that ratio was



reversed; for every \$1.00 of software purchased legitimately, nearly \$2.00 worth was obtained illegally. Additionally, in the highest piracy countries — those with piracy rates of more than 80% — for every \$1.00 spent on PC hardware, less than seven cents was spent on legitimate software.

In a year that saw nearly 230 million PCs shipped into a global market that already had 800 million machines installed, software piracy had a widespread impact. Efforts to lower piracy can pay off in incremental ways, but only if they are sustained over time.

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

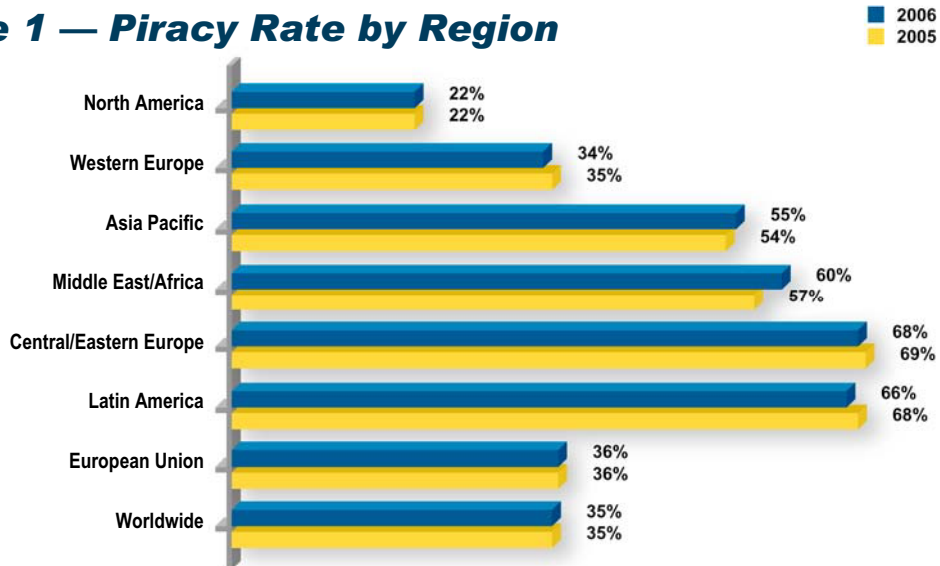
For this study, IDC used proprietary statistics for software and hardware shipments gathered through surveys of vendors, users, and the channel, and enlisted IDC analysts in more than fifty countries to review local market conditions. With ongoing coverage of hardware and software markets in more than seventy-five countries, and with sixty percent of its analyst force outside of the United States, IDC provides a deep and broad information base from which to develop the 2006 piracy rates.



THE GLOBAL PICTURE

Figure 1 shows the relative ranking by piracy rate of seven regions, which consist of 102 countries and six sub-regions as categorized by IDC. Six of the seven regions shown are mutually exclusive; the seventh — the European Union — includes countries from Western Europe, Central/Eastern Europe and the Middle East/Africa.

Figure 1 — Piracy Rate by Region



The PC software piracy rate increased in two regions, Asia Pacific and the Middle East/Africa, while decreasing in three regions, Central/Eastern Europe, Latin America, and Western Europe. The piracy rate in North America, the largest region, remained constant at 22%. The worldwide piracy rate stayed the same, largely due to the increase of the piracy rate in Asia, which more than offset the decreases in other regions.

The Asia Pacific piracy rate went up despite the fact that piracy dropped in eleven out of fifteen countries examined. The reason for this is the shares of China and India in the overall Asia market grew in 2006, and their piracy rates, although lower than 2005, increased the regional average. In the Middle East and Africa, the same phenomenon occurred. The twenty-two countries with piracy above last year's regional rate grew faster than the remaining countries in the region, and this consequently increased the regional average.

A number of factors 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. While efforts to cut piracy in large businesses may be successful, piracy can increase as a result of new users from small businesses entering the market for the first time. Piracy may go down in operating systems and up in business applications.

In the global IT market, it seems that high-piracy geographies are also high market-growth regions, as we see in Asia Pacific and the Middle East/Africa. While countries

like the United States, Japan and the UK are expecting IT spending growth in the mid-single digits for the next five years, countries like India, China, and Russia are expected to grow between thirteen and twenty percent.

The emerging markets in Asia Pacific, Latin America, Eastern Europe, and the Middle East/Africa account for one-third of PC shipments today — with China the second-largest market behind the United States — but only 10% of spending on PC software.

Globally, businesses and consumers will spend \$350 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 this period IDC predicts that more than \$180 billion worth of PC software is expected to be pirated, hence, the interest of vendors and governments in lowering piracy.

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

Table 1 — 2006 PC Software Piracy Rankings

20 Countries with the Highest Piracy Rates					20 Countries with the Lowest Piracy Rates				
COUNTRY	2006	2005	2004	2003	COUNTRY	2006	2005	2004	2003
Armenia	95%	95%	-	-	United States	21%	21%	21%	22%
Moldova	94%	96%	-	-	New Zealand	22%	23%	23%	23%
Azerbaijan	94%	94%	-	-	Japan	25%	28%	28%	29%
Zimbabwe	91%	90%	90%	87%	Denmark	25%	27%	27%	26%
Vietnam	88%	90%	92%	92%	Austria	26%	26%	25%	27%
Venezuela	86%	82%	79%	72%	Switzerland	26%	27%	28%	31%
Pakistan	86%	86%	82%	83%	Sweden	26%	27%	26%	27%
Indonesia	85%	87%	87%	88%	Finland	27%	26%	29%	31%
Ukraine	84%	85%	91%	91%	United Kingdom	27%	27%	27%	29%
Cameroon	84%	84%	84%	81%	Belgium	27%	28%	29%	29%
Algeria	84%	83%	83%	84%	Germany	28%	27%	29%	30%
Montenegro	82%	83%	83%	-	Netherlands	29%	30%	30%	33%
El Salvador	82%	81%	80%	79%	Australia	29%	31%	32%	31%
Zambia	82%	83%	84%	81%	Norway	29%	30%	31%	32%
Bolivia	82%	83%	80%	78%	Israel	32%	32%	33%	35%
Ivory Coast	82%	82%	84%	81%	Canada	34%	33%	36%	35%
China	82%	86%	90%	92%	UAE	35%	34%	34%	34%
Nigeria	82%	82%	84%	84%	South Africa	35%	36%	37%	36%
Paraguay	82%	83%	83%	83%	Ireland	36%	37%	38%	41%
Guatemala	81%	81%	78%	77%	Singapore	39%	40%	42%	43%

This year, three new countries added to the study — Armenia, Azerbaijan, and Moldova — are on the top-20 list of high-piracy countries, as is Montenegro, split now from Serbia. Kazakhstan, Senegal, Russia, and Botswana are no longer on the list. The twenty countries on the list of lowest piracy rates remain unchanged.



Some observations from this year's study:

- China's piracy rate dropped four percentage points for the second consecutive year and has dropped ten percentage points in the last three years, from 92% in 2003 to 82% in 2006. By reducing China's piracy rate by ten percentage points over three years, \$864 million in losses was saved, according to IDC. The reduction in the piracy rate and the savings are the result of government efforts to increase the use of legitimate software within its own departments, vendor arrangements with PC suppliers to use legitimate software, and increasing industry and government education and enforcement efforts.
- The legitimate software market in China grew to nearly \$1.2 billion in 2006, an increase of 88% over 2005. Since 2003, the legitimate software market in China has grown over 358%.
- Russia's 3% drop to 80% in 2006 follows a 4% drop in 2005. Russia's piracy rate has dropped seven percentage points since 2003, a result of government and industry efforts to lower piracy and, as with China, more arrangements between software vendors and PC suppliers to increase the use of legitimate software. In addition, the increase in discretionary personal income as a result of Russia's fast growing oil-driven economy seems to have had a positive effect on user willingness to buy legitimate software.
- India's drop in piracy is encouraging, but the high rate is counter-intuitive, given India's big export market for custom-developed software. The IDC rate, however, measures only PC software and only that consumed domestically. Were the piracy rate lower, it seems clear that India, given its world-class software development skills, could have a much more robust local packaged software market.
- In a number of countries, such as Brazil, China, Russia, India, and Mexico, losses from piracy went up significantly while piracy rates went down. This was the result of rapid growth in both legitimate and pirated software. Losses in 2006 were smaller, but of much bigger markets.
- A number of Middle Eastern and African countries saw piracy drop as a result of government and industry actions and the rapid influx of branded laptops that ship with preloaded legitimate software taking market share from desktop systems supplied by local assemblers that ship without any legitimate software.
- In Western Europe, PC shipments grew much more slowly than in the rest of Europe, the Middle East, and Africa, which led to falling piracy rates and a decrease in losses.

Across the world, the branded vendors shipped 13% more PCs in 2006 than in 2005, while non-branded vendors saw shipments drop 2%. Since PCs from branded vendors more often come with bundled software, this changing dynamic helped to lower piracy. At the same time, however, Internet access and broadband access grew, increasing the supply of pirated software.



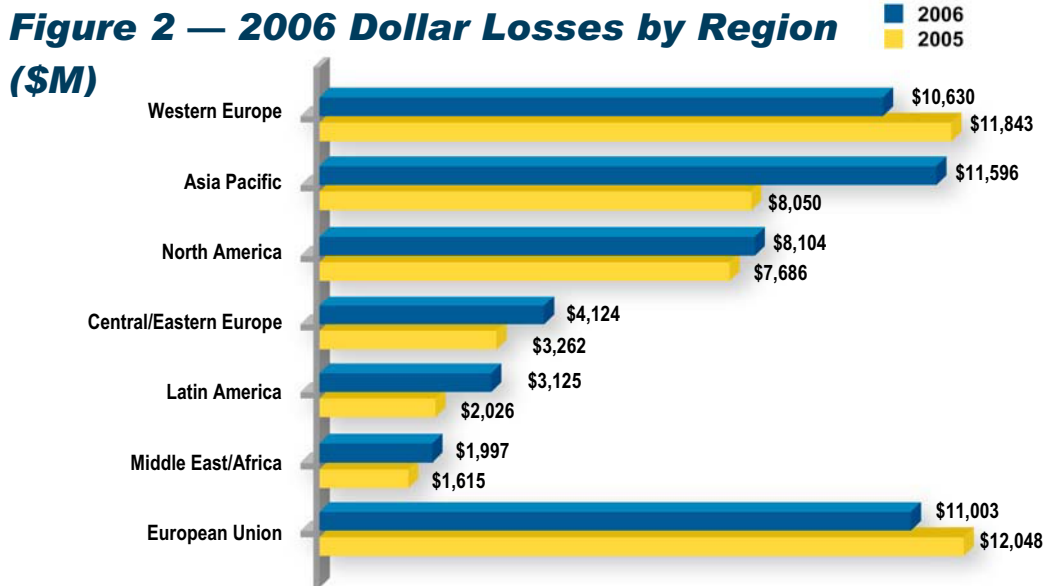
THE IMPACT OF PIRACY

Software piracy has many negative economic consequences, including local software industries crippled by competition with pirated software from abroad, lost tax revenues and jobs from lack of a legitimate market and, decreased business productivity from using unsupported and often “buggy” software.

These costs also reverberate up and down the supply and distribution chains. According to IDC, for every \$1.00 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 another \$1.00 of channel revenue. Most of this additional service or channel revenue goes to local firms.

Thus, the broader economic impact of software piracy is significantly greater than the retail value of pirated software, labeled losses in Figure 2 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.¹

Figure 2 shows the value of pirated software, or losses, by region.



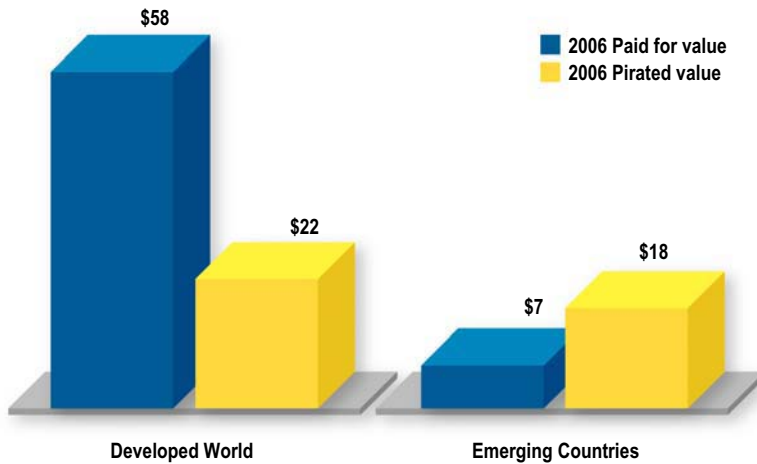
As in past years, the European Union, Western Europe, and North America experienced significant dollar losses, yet had relatively low piracy rates. This is because their markets are so large that even small piracy rates can generate significant losses.

¹ 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.



One way to understand the relationship of piracy losses to the piracy rate is to compare the developed world² to emerging markets. Figure 3 shows the legitimate PC software market compared to the pirated software market. The legitimate market in the developed world is eight times the size of that in emerging markets, yet the losses from software piracy are only slightly larger. The Asia Pacific region has high losses from both developed and emerging countries.

Figure 3 — Legitimate vs. Pirated Market
PC Software Market (\$Billions)



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 — Ranking by 2006 PC Software Piracy Losses
Countries with \$200 Million or More

COUNTRY	\$M	COUNTRY	\$M
United States	\$7,289	Poland	\$484
China	\$5,429	South Korea	\$440
France	\$2,676	Thailand	\$421
Russia	\$2,197	Netherlands	\$419
Japan	\$1,781	Indonesia	\$350
United Kingdom	\$1,670	Ukraine	\$337
Germany	\$1,642	Switzerland	\$324
Italy	\$1,403	Turkey	\$314
India	\$1,275	Sweden	\$313
Brazil	\$1,148	Venezuela	\$307
Spain	\$865	Argentina	\$303
Canada	\$784	Malaysia	\$289
Mexico	\$748	South Africa	\$225
Australia	\$515	Belgium	\$222

² Assumed here to be the United States, Canada, Western Europe, Australia, New Zealand, Japan, Hong Kong, Singapore, South Korea, and Taiwan.

PIRACY TRENDS

This is the fourth year in which IDC has studied global software piracy for 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. IDC also recognizes that culture, institutional effectiveness, and geography have an impact on the ability of countries to lower piracy.

When IDC first started studying software piracy, we often saw low-piracy countries making as much progress in lowering piracy as high-piracy countries. In the last two years, however, IDC studies indicate that some of the high-piracy countries, such as China, Ukraine, Morocco, and Romania, have made significant progress.

Lowering software piracy is a matter of continual work on multiple fronts, and recent advances are the result of efforts begun years ago. A number of the high-piracy countries showing steady decreases in their piracy rate are recent members of the World Trade Organization or European Union. Others aspire to be. This is motivation to turn intentions and promises into more education and better enforcement.

Slower market growth in the developed world since 2000 has heightened awareness about the importance of lowering piracy in emerging economies. This has driven investments that have helped increase anti-piracy education and enforcement and, through partnerships and joint ventures, helped drive local industry revenues. The voices of local industry now join those of multinationals in lobbying government and businesses for stronger IP protection.

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 pushing piracy rates upward.

Already, over 60% of Internet traffic is driven by P2P downloading; 2006 saw 140 million new Internet users, according to IDC. Almost two-thirds of those were from emerging geographies. Between the end of 2006 and the end of 2010, more than a quarter-billion new Internet users will come from Brazil, Russia, India, and China alone.

Not only did Internet access grow, but access to broadband connections also increased. In 2006, fifty million households got broadband access, twenty-five million in high-piracy countries. By 2010, IDC predicts that over 20% of all households in the world, or more than 360 million, will have broadband access to the Internet.

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 economic engine.



In order to unlock the 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

- **Increase Public Education and Awareness**
Reducing software piracy often requires a fundamental shift in the public's attitude toward software piracy, and 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 risks associated with using pirated software and encouraging the use of legitimate products. Some of the most successful efforts stem from comprehensive public education campaigns launched jointly by government and industry.
- **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 1.1 billion people around the globe now have Internet access, 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 their WIPO obligations. Among other things, these measures ensure that protected works are not made available online without the author's permission, and that copy protection tools are not hacked or circumvented.
- **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 protection 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 cooperation among police and other enforcement agencies to improve coordination for law enforcement in multiple countries; and
 - c. Supporting the 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.
- **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 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 —2006 Global PC Software Piracy

COUNTRY	PIRACY RATES				PIRACY LOSSES			
	2006	2005	2004	2003	2006 \$M	2005 \$M	2004 \$M	2003 \$M
Australia	29%	31%	32%	31%	\$515	\$361	\$409	\$341
China	82%	86%	90%	92%	\$5,429	\$3,884	\$3,565	\$3,823
Hong Kong	53%	54%	52%	52%	\$180	\$112	\$116	\$102
India	71%	72%	74%	73%	\$1,275	\$566	\$519	\$367
Indonesia	85%	87%	87%	88%	\$350	\$280	\$183	\$158
Japan	25%	28%	28%	29%	\$1,781	\$1,621	\$1,787	\$1,633
Malaysia	60%	60%	61%	63%	\$289	\$149	\$134	\$129
New Zealand	22%	23%	23%	23%	\$49	\$30	\$25	\$21
Pakistan	86%	86%	82%	83%	\$143	\$48	\$26	\$16
Philippines	71%	71%	71%	72%	\$119	\$76	\$69	\$55
Singapore	39%	40%	42%	43%	\$125	\$86	\$96	\$90
South Korea	45%	46%	46%	48%	\$440	\$400	\$506	\$462
Taiwan	41%	43%	43%	43%	\$182	\$111	\$161	\$139
Thailand	80%	80%	79%	80%	\$421	\$259	\$183	\$141
Vietnam	88%	90%	92%	92%	\$96	\$38	\$55	\$41
Other AP	86%	82%	76%	76%	\$202	\$29	\$63	\$37
TOTAL ASIA	55%	54%	53%	53%	\$11,596	\$8,050	\$7,897	\$7,555
Albania	77%	76%	77%	—	\$11	\$9	\$7	—
Armenia	95%	95%	—	—	\$8	\$7	—	—
Azerbaijan	94%	94%	—	—	\$51	\$40	—	—
Bosnia	68%	69%	70%	—	\$14	\$13	\$12	—
Bulgaria	69%	71%	71%	71%	\$50	\$41	\$33	\$26
Croatia	55%	57%	58%	59%	\$62	\$51	\$50	\$45
Czech Republic	39%	40%	41%	40%	\$147	\$121	\$132	\$106
Estonia	52%	54%	55%	54%	\$16	\$18	\$17	\$14
Hungary	42%	42%	44%	42%	\$111	\$106	\$126	\$96
Kazakhstan	81%	85%	85%	85%	\$85	\$69	\$57	—
Latvia	56%	57%	58%	57%	\$26	\$20	\$19	\$16
Lithuania	57%	57%	58%	—	\$31	\$25	\$21	\$17
Macedonia	69%	70%	72%	—	\$10	\$9	\$8	—
Montenegro	82%	83%	83%	—	\$6	\$9	\$8	—
Moldova	94%	96%	—	—	\$56	\$44	—	—
Poland	57%	58%	59%	58%	\$484	\$388	\$379	\$301
Romania	69%	72%	74%	73%	\$114	\$111	\$62	\$49

PIRACY RATES

COUNTRY	2006	2005	2004	2003
Russia	80%	83%	87%	87%
Serbia	78%	80%	80%	—
Slovakia	45%	47%	48%	50%
Slovenia	48%	50%	51%	52%
Ukraine	84%	85%	91%	91%
Other CIS	96%	96%	90%	91%
Other EE	84%	86%	85%	72%
TOTAL CEE	68%	69%	71%	71%

PIRACY LOSSES

2006 \$M	2005 \$M	2004 \$M	2003 \$M
\$2,197	\$1,625	\$1,362	\$1,104
\$59	\$95	\$85	—
\$47	\$44	\$48	\$40
\$36	\$33	\$37	\$32
\$337	\$239	\$107	\$92
\$62	\$69	\$64	\$112
\$104	\$76	\$48	\$61
\$4,124	\$3,262	\$2,682	\$2,111

Argentina	75%	77%	75%	71%
Bolivia	82%	83%	80%	78%
Brazil	60%	64%	64%	61%
Chile	68%	66%	64%	63%
Colombia	59%	57%	55%	53%
Costa Rica	64%	66%	67%	68%
Dominican Republic	79%	77%	77%	76%
Ecuador	67%	69%	70%	68%
El Salvador	82%	81%	80%	79%
Guatemala	81%	81%	78%	77%
Honduras	75%	75%	75%	73%
Mexico	63%	65%	65%	63%
Nicaragua	80%	80%	80%	79%
Panama	74%	71%	70%	69%
Paraguay	82%	83%	83%	83%
Peru	71%	73%	73%	68%
Uruguay	70%	70%	71%	67%
Venezuela	86%	82%	79%	72%
Other LA	83%	82%	79%	81%
TOTAL LATIN	66%	68%	66%	63%

\$303	\$182	\$108	\$69
\$15	\$10	\$9	\$11
\$1,148	\$766	\$659	\$519
\$163	\$109	\$87	\$68
\$111	\$90	\$81	\$61
\$27	\$19	\$16	\$17
\$19	\$8	\$4	\$5
\$30	\$17	\$13	\$11
\$18	\$8	\$5	\$4
\$26	\$14	\$10	\$9
\$7	\$4	\$3	\$3
\$748	\$525	\$407	\$369
\$4	\$2	\$1	\$1
\$18	\$8	\$4	\$4
\$10	\$10	\$11	\$9
\$59	\$40	\$39	\$31
\$16	\$9	\$12	\$10
\$307	\$173	\$71	\$55
\$96	\$32	\$6	\$7
\$3,125	\$2,026	\$1,546	\$1,263

Algeria	84%	83%	83%	84%
Bahrain	60%	60%	62%	64%
Botswana	81%	82%	84%	81%
Cameroon	84%	84%	84%	81%
Cyprus	52%	52%	53%	55%
Egypt	63%	64%	65%	69%
Israel	32%	32%	33%	35%
Ivory Coast	82%	82%	84%	81%
Jordan	61%	63%	64%	65%
Kenya	80%	81%	83%	80%
Kuwait	64%	66%	68%	68%
Lebanon	73%	73%	75%	74%
Mauritius	59%	60%	60%	61%
Morocco	66%	68%	72%	73%
Nigeria	82%	82%	84%	84%
Oman	62%	63%	64%	65%
Other Africa	85%	84%	84%	81%
Other ME	89%	91%	93%	92%
Qatar	58%	60%	62%	63%
Reunion	40%	40%	40%	39%
Saudi Arabia	52%	52%	52%	54%
Senegal	81%	82%	84%	81%
South Africa	35%	36%	37%	36%
Tunisia	79%	81%	84%	82%
Turkey	64%	65%	66%	66%
UAE	35%	34%	34%	34%
Zambia	82%	83%	84%	81%
Zimbabwe	91%	90%	90%	87%
TOTAL MEA	60%	57%	58%	56%

\$62	\$66	\$67	\$59
\$23	\$22	\$19	\$18
\$12	\$12	—	—
\$5	\$5	—	—
\$12	\$13	\$9	\$8
\$88	\$80	\$50	\$56
\$102	\$84	\$66	\$69
\$16	\$23	—	—
\$19	\$19	\$16	\$15
\$22	\$20	\$16	\$12
\$60	\$65	\$48	\$41
\$39	\$34	\$26	\$22
\$3	\$3	\$4	\$4
\$53	\$55	\$65	\$57
\$100	\$82	\$54	\$47
\$25	\$22	\$13	\$11
\$49	\$63	\$124	\$84
\$423	\$154	\$70	\$51
\$23	\$21	\$16	\$13
\$0	\$1	\$1	\$1
\$195	\$178	\$125	\$120
\$6	\$6	—	—
\$225	\$212	\$196	\$147
\$55	\$54	\$38	\$29
\$314	\$268	\$182	\$127
\$62	\$45	\$34	\$29
\$2	\$2	—	—
\$2	\$6	\$9	\$6
\$1,997	\$1,615	\$1,248	\$1,026

PIRACY RATES

COUNTRY	2006	2005	2004	2003
Canada	34%	33%	36%	35%
Puerto Rico	45%	47%	46%	46%
United States	21%	21%	21%	22%
TOTAL NA	22%	22%	22%	23%

Austria	26%	26%	25%	27%
Belgium	27%	28%	29%	29%
Denmark	25%	27%	27%	26%
Finland	27%	26%	29%	31%
France	45%	47%	45%	45%
Germany	28%	27%	29%	30%
Greece	61%	64%	62%	63%
Iceland	53%	57%	-	-
Ireland	36%	37%	38%	41%
Italy	51%	53%	50%	49%
Malta	45%	45%	47%	46%
Netherlands	29%	30%	30%	33%
Norway	29%	30%	31%	32%
Portugal	43%	43%	40%	41%
Spain	46%	46%	43%	44%
Sweden	26%	27%	26%	27%
Switzerland	26%	27%	28%	31%
United Kingdom	27%	27%	27%	29%
TOTAL WE	34%	35%	34%	36%

EUROPEAN UNION	36%	36%	35%	37%
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TOTAL WORLDWIDE	35%	35%	35%	36%
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PIRACY LOSSES

2006 \$M	2005 \$M	2004 \$M	2003 \$M
\$784	\$779	\$889	\$736
\$31	\$12	\$15	\$11
\$7,289	\$6,895	\$6,645	\$6,496
\$8,104	\$7,686	\$7,549	\$7,243

\$147	\$131	\$128	\$109
\$222	\$257	\$309	\$240
\$183	\$199	\$226	\$165
\$149	\$156	\$177	\$148
\$2,676	\$3,191	\$2,928	\$2,311
\$1,642	\$1,920	\$2,286	\$1,899
\$165	\$157	\$106	\$87
\$32	\$18	-	-
\$92	\$93	\$89	\$71
\$1,403	\$1,564	\$1,500	\$1,127
\$7	\$5	\$3	\$2
\$419	\$596	\$628	\$577
\$181	\$169	\$184	\$155
\$140	\$104	\$82	\$66
\$865	\$765	\$634	\$512
\$313	\$340	\$304	\$241
\$324	\$376	\$309	\$293
\$1,670	\$1,802	\$1,963	\$1,601
\$10,630	\$11,843	\$11,856	\$9,604

\$11,003	\$12,048	\$12,151	\$9,786
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\$39,576	\$34,482	\$32,778	\$28,803
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STUDY METHODOLOGY

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

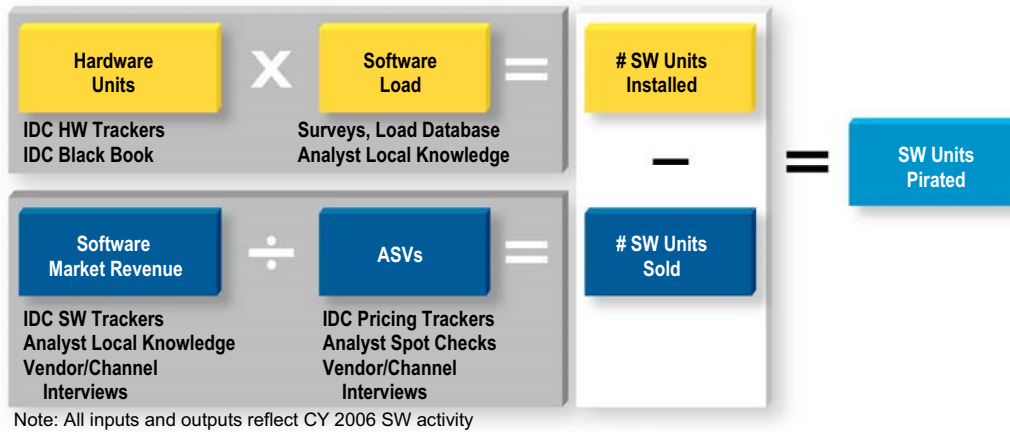
1. Determine how much packaged software was put into use in 2006.
2. Determine how much packaged software was paid for/legally acquired in 2006.
3. Subtract one from the other to get the amount of pirated software.

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 4 shows the general method IDC used to determine how much software was added in 2006 and how much was paid for. The text under each box refers to the sources of the data inputs.

Figure 4 — Methodology-at-a-glance



SOFTWARE CATEGORIES EXAMINED

IDC calculates piracy on all software that runs on personal computers, including desktops, laptops, and ultra-portables. 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. 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. In 2006, however, exchange rates had little overall impact, as the US dollar went up against Japanese yen and down against the Euro and British pound. In individual countries, however, the exchange rate made a difference. This year, losses in Russia, for instance, would be \$100 million lower if stated at the 2005 exchange rate. Losses in Japan would be \$100 million lower, losses in Canada would be \$50 million lower, losses in Brazil would be \$120 million lower, and so on.

EQUATING THE VALUE OF PIRATED SOFTWARE TO LOSSES

For the fourteen 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.

While not every piece of pirated software would be purchased if piracy rates were to go down — some would be substituted, some not used — lower piracy rates yield more economic activity which 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, as expected, there is a high correlation between piracy rates and that ratio. The higher the piracy, the lower the ratio of software spending to hardware spending. Given the definition of piracy, that would seem obvious.

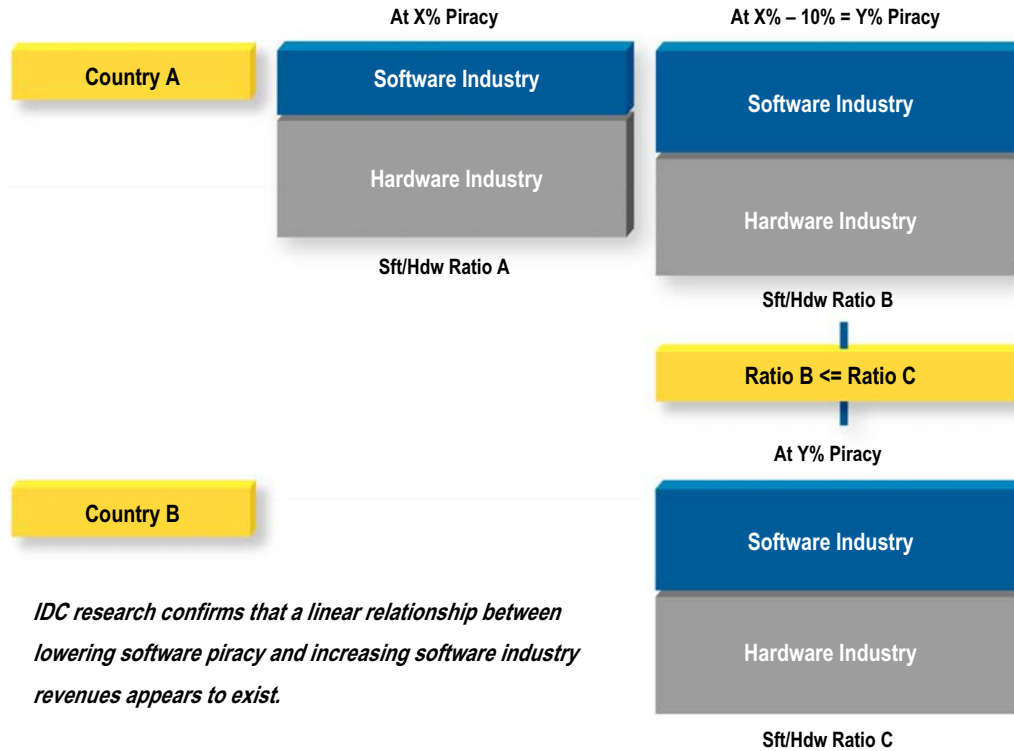
But, IDC also found that adding calculated software gains from lowering piracy ten points almost always led to a software-to-hardware ratio that was still lower than countries with a piracy rate at the new target.

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



Figure 5 illustrates the process of comparing countries that we used in the economic impact study of lowering piracy.

Figure 5 — 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 seventy-five countries. For the additional 25-plus countries and markets, the data is either collected in-country or modeled regionally based on IDC’s rest-of-region estimates. The basic tracking data is 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

Software revenues are captured annually in more than seventy 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)

The software shipments 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

Software load is 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. The number is derived from a model that uses results from surveys in the field, analyst estimates, spot inventories, and other local research. Inputs to the model included surveys in fifteen countries in 2003, local surveys and research in 2004 and 2005, and another survey fielding in twenty-one countries in 2006. The surveys are *not* direct inputs to the piracy model, but are used to develop software load profiles for countries based on a variety of country statistics, including demographics, computer sophistication, and comparisons to like countries.

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

Total software base is 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 2006.

Pirated software

The amount of pirated software is determined by finding the difference between paid-for or legitimate packaged software units and the total software base.

Piracy rate

The piracy rate is the total number of units of pirated software put into use in 2006 divided by the total units of software installed.



Losses

The retail value of pirated software 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 revenues to both international and local in-country software vendors and mark-up to local distributors and retailers.





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