



FIFTH ANNUAL BSA AND IDC GLOBAL SOFTWARE

> PIRACY STUDY METHODOLOGY



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STUDY METHODOLOGY

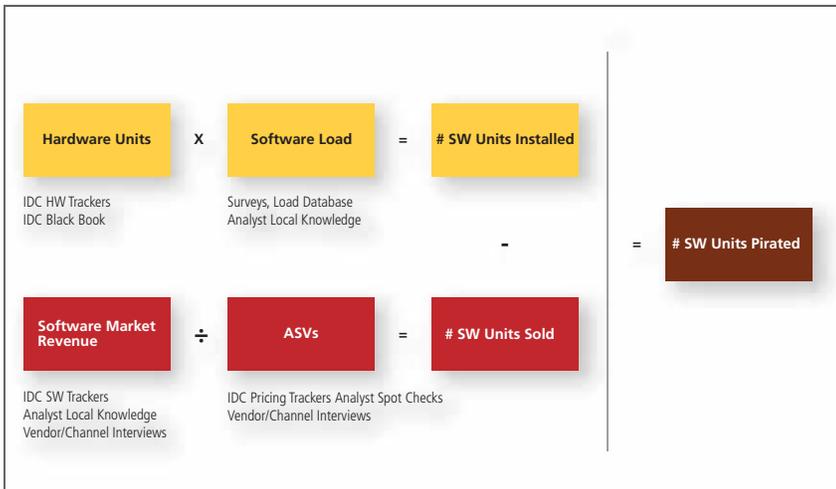
IDC uses the following basic research architecture to measure software piracy rates and losses:

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.

Figure 1. 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 deployed during the year, open source software, freeware, and shareware were considered legitimate software and were not considered pirated. In calculating piracy losses, 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.

THE IMPACT OF LEGALIZATION PROGRAMS

Anti-piracy legalization programs by vendors and governments are excellent ways to lower software piracy. The programs typically entail bulk purchases of licenses for software that may already be deployed in pirated versions. These programs, importantly, create a base of legitimate software on which the market can build.

In the IDC calculation of piracy rates for this study, only software that was deployed in 2007 was counted as *pirated* in the installed base. Thus, there is a gray area when counting legitimate licenses that affect the legal status of software pirated in years prior to 2007.

To be consistent with the historical methodology and results of the global study, IDC treated software made legal through legalization programs as follows:

- New software programs that were *actually installed on a PC* during 2007 as part of a legalization program—e.g., government distribution of software for schools in Egypt and Vietnam—were counted as legitimate software shipments.
- Software licenses sold for software pirated in 2007, but which did not entail a re-install or upgrade, were nevertheless counted as legitimate shipments.
- Software licenses sold for software pirated in years prior to 2007 that did not entail a re-install or upgrade were *not* counted as a 2007 license shipment.

This treatment of pirated software legalized through these types of programs has the effect of accurately portraying the relationship between pirated and non-pirated software in 2007, but it does not account for software pirated in years prior to 2007 that is suddenly made legal. Accounting for it would mean restating prior years every year, an exercise beyond the scope of this annual study.

THE IMPACT OF NEW INFORMATION ON THE PC MARKETS IN CHINA AND VIETNAM

In late 2007, IDC took a closer look at the PC markets in China and Vietnam in response to new inputs on component shipments and additional information received from second- and third-tier cities in these countries. As a result, IDC found a significant number of PCs had been shipped in 2007 by small local assemblers and non-brand name vendors—firms too small to track vendor by vendor—sometimes called "white box" vendors. These firms generally sell to consumers and small businesses, often in smaller cities geographically distant from major urban centers. This new information raised the PC count in the two countries beyond the shipments by brand name vendors, and the new PC market sizes were factored into the model in determining the 2007 piracy rates.

For reference, pro forma rates for 2007 for China and Vietnam, had the additions to the PC markets not been factored in, would be as follows:

Country	Reported 2006 piracy rate	Pro forma 2007 piracy rate	Reported 2007 piracy rate
China	82%	80%	82%
Vietnam	88%	81%	85%

These updates are part of a constant process to ensure the most current and accurate information is available across all countries. Similar assessments may be conducted with IDC's PC market data in Brazil and India this year, and this new information will be incorporated into the 2008 study.

YEAR-ON-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 2007, the US dollar dropped significantly against the euro, pound, yen, real, ruble, and many other currencies. Recalculating the 2006 piracy losses in 2007 dollars would add more than five billion dollars to the amount, meaning that more than half of the difference between 2006 and 2007 losses is solely the result of exchange rates.

The impact of exchange rates can be seen more starkly in individual countries or regions. Losses that appear to have gone up in many places actually went down in constant dollars.

Country	2007 Losses	2006 Losses	Difference	2006 Losses in 2007 Dollars	New Difference
India	\$2,025	\$1,275	\$750	\$1,386	\$639
Japan	\$1,791	\$1,781	\$10	\$1,881	(\$90)
Russia	\$4,123	\$2,197	\$1,926	\$2,320	\$1,803
Brazil	\$1,617	\$1,148	\$469	\$1,282	\$335
Canada	\$1,071	\$784	\$287	\$828	\$243
Austria	\$157	\$147	\$10	\$160	(\$3)
France	\$2,601	\$2,676	(\$75)	\$2,917	(\$316)
Germany	\$1,937	\$1,642	\$295	\$1,790	\$147
Spain	\$903	\$865	\$38	\$943	(\$40)
Western Europe	\$11,655	\$10,642	\$1,013	\$11,600	\$55

EQUATING THE VALUE OF PIRATED SOFTWARE TO LOSSES

For many years, BSA has equated the value of pirated software to industry "losses." This has 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 will be substituted, some not used—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, as expected, there is a high correlation between piracy rates and that ratio. The higher the piracy rate, the lower the ratio of software spending to hardware spending. Given the definition of piracy, that would seem obvious.

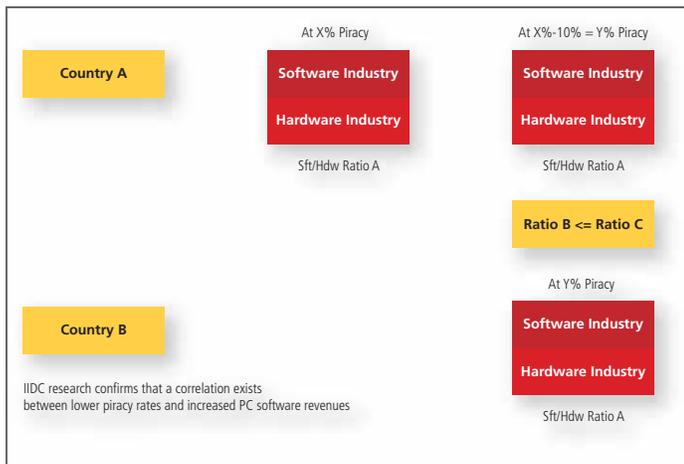
However, IDC also found that calculated software gains from lowering piracy ten points almost always

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 rate by 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 2 illustrates the process of comparing countries used in the economic impact study of lowering piracy.

Figure 2. 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 thirty-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 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. The installed base for 2007 consisted of PCs installed at the end of 2007 minus 2007 PC shipments.

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 are either collected in-country or modeled regionally based on IDC's rest-of-region estimates.

Software shipments (legitimate)

Software shipments are 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 are gathered from IDC's pricing trackers, local research, and interviews with the channel. They include adjustments for OEM and channel-loaded software as well as software from local suppliers.

Software unit shipments are derived by taking revenues and dividing by the average system value, and then cross-checked with data provided by vendors and channel members. 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 and 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, another survey fielded in twenty-one countries in 2006, and one in twenty-two countries in 2007. The surveys are not direct inputs to the piracy model, but are used to develop software load profiles for each country based on a variety of local 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; and
- Software running on Windows and non-Windows OS.

Total software base

The total software base is the 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 2007.

Pirated software

The amount of pirated software is 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 deployed in 2007 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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