PwC Advisory
Performance Improvement

2007 Technology Licensing Marketplace Study*

*connectedthinking

PricewaterhouseCoopers

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Overview

Best practices demand that companies address unlicensed technology.

As technology has moved to the heart of most business processes, an increasing number of industries are suffering the effects of licensing non-compliance. PricewaterhouseCoopers initiated its third annual survey of the technology licensing marketplace in order to investigate the issues raised by unlicensed technology's widening impact.

Traditional technology companies, such as computer hardware and software vendors, still generate the majority of revenue and licenses in the global technology licensing marketplace; however, 29 percent of the respondents to this study's survey came from industries outside the technology sector, including financial services, automotive, publishing, logistics and distribution, information retrieval, consumable goods, and professional services.

The broadening technology licensing market, in conjunction with new regulation and enhanced compliance tools, has encouraged increased scrutiny of licensing portfolios. The result is a growing body of evidence about the pervasive use of unlicensed technology and its massive economic impact. In the last year, more than three quarters of all technology licensors suffered revenue leakage due to licensing non-compliance, and this leakage was most serious in lucrative, high-growth economies such as the United States and China. In the software industry alone, the global loss to underreporting, overdeployment, and piracy was estimated at nearly $40 billion.

Despite the available data, the average technology licensor has not yet recognized the significant consequences of licensing violations. Many companies have no plan for recovering the revenue lost to unlicensed technology, and most do not even consider piracy or the black market an important issue.

PricewaterhouseCoopers' analysis of the current technology licensing market suggests that companies must recognize the seriousness of this situation. The impact to earnings and market valuation suffered by companies that do not pursue revenue leakage from unlicensed technology is both significant and quantifiable. Best practices demand that companies implement intellectual property (IP) compliance programs in order to protect and maximize value from IP rights.

Trends

1. Consensus estimates seriously miscalculate the impact of licensing revenue leakage.

The loss of revenue due to the unlicensed use of technology is pervasive in the global licensing marketplace. Seventy-eight percent of technology licensors report revenue leakage from licensing agreements, echoing a recent OECD finding that "counterfeiting and piracy are taking place in virtually all economies."[1] Similarly, the Business Software Alliance estimates that 35 percent of worldwide packaged software programs for personal computers (i.e., desktops, laptops, and ultra-portables) were unlicensed in 2006, representing a loss of $39.6 billion.[2]

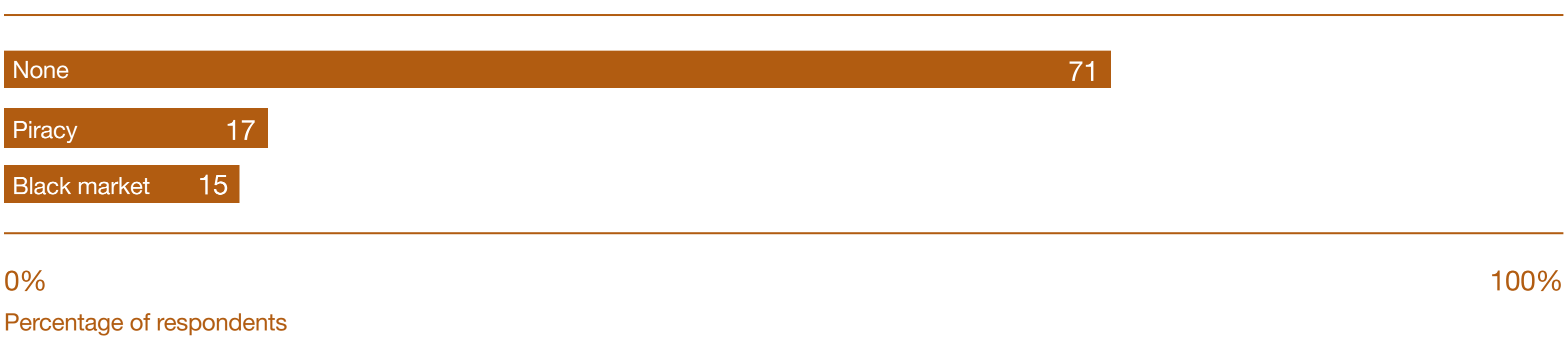
Despite the widespread recognition that licensing leakage is pandemic, companies appear to be relatively unconcerned about its effects. Seventy-two percent of software companies and 71 percent of all technology licensors surveyed by PricewaterhouseCoopers do not consider piracy or the black market an important issue. Almost half (48 percent) also do not have a plan for recovering lost licensing revenue, even though the economic impact of all counterfeit and pirated goods is estimated to be more than $600 billion annually.[3]

1 John Dryden, "Counting the Cost: The Economic Impacts of Counterfeiting and Piracy; Preliminary Findings of the OECD Study," presentation for the Third Global Congress on Combating Counterfeiting and Piracy, International Conference Center, Geneva, Switzerland, January 30–31, 2007. Available online at www.ccapcongress.net/Files/geneva/Dryden.pdf.

2 Business Software Alliance and IDC, *Fourth Annual BSA and IDC Global Software Piracy Study* (May 2007).

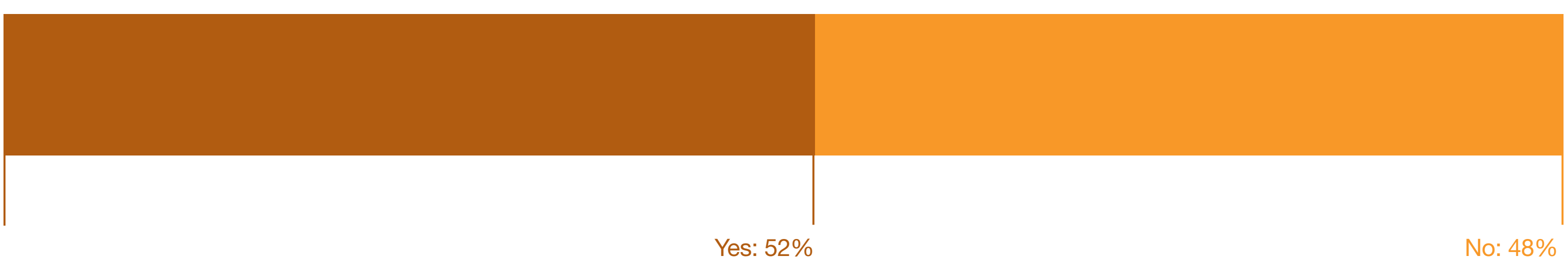
3 International Chamber of Commerce fact sheet, "Business Action to Stop Counterfeiting and Piracy," United States Council for International Business (May 2004). Available online at www.uscib.org/docs/BASCAP_factsheet.pdf.

Figure 1. Percentage of problems of piracy or the black market (all technology licensors)



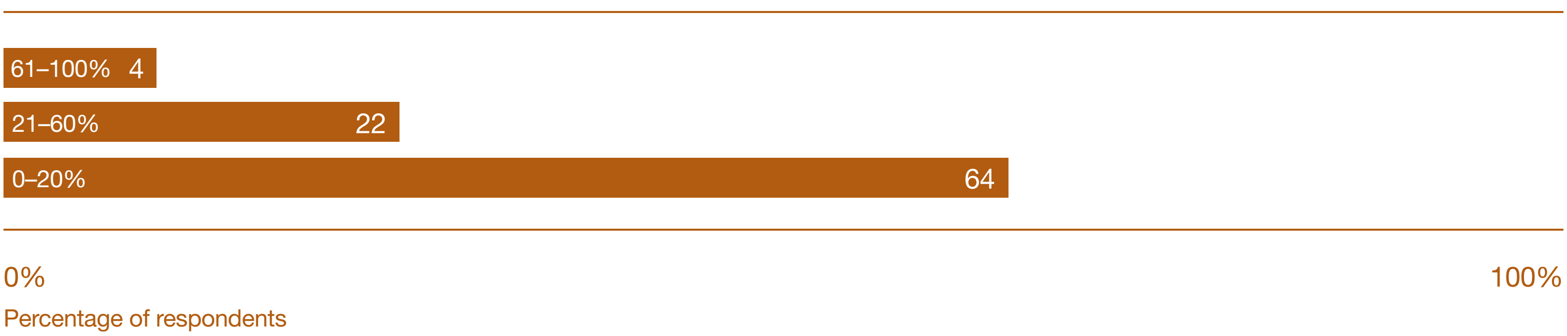
Note: Respondents were asked to check all that apply.

Figure 2. Percentage of revenue leakage recovery procedures in place



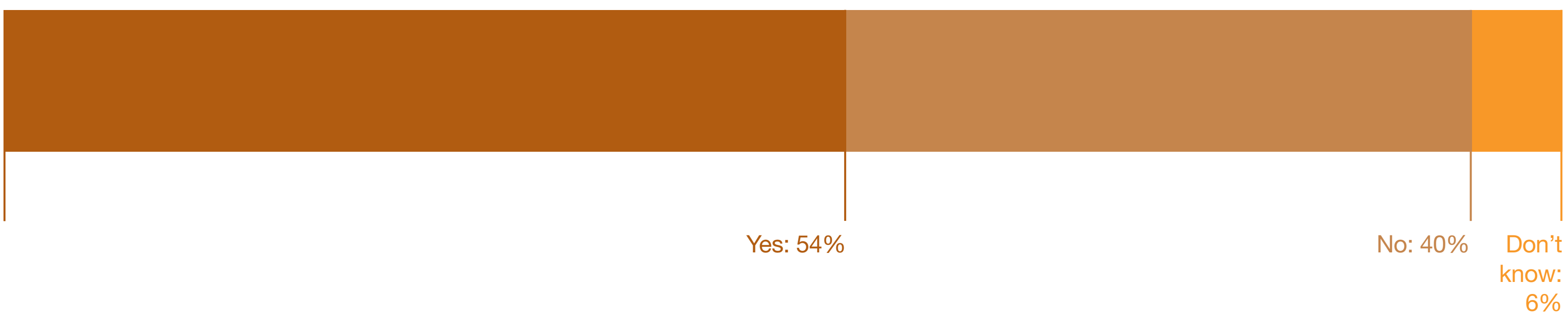
There are several possible reasons why most technology licensors underestimate the economic impact of revenue leakage and fail to address the issue with vigor. First, 40 percent of technology licensors do not conduct any compliance audits, so their estimates may be based on anecdotal evidence rather than actual statistical analysis. Second, almost two thirds of the companies that do conduct audits examine less than 20 percent of their licenses each year. Because licensing revenue leakage is so widespread and because technological change occurs so rapidly, this sample size is simply not large enough to accurately assess compliance. Third, companies rationalize not addressing this risk by believing that revenue loss happens at “other companies.”

Figure 3. Percentage of licensing agreements audited per year



Note: 10% replied "don't know" or chose not to reply.

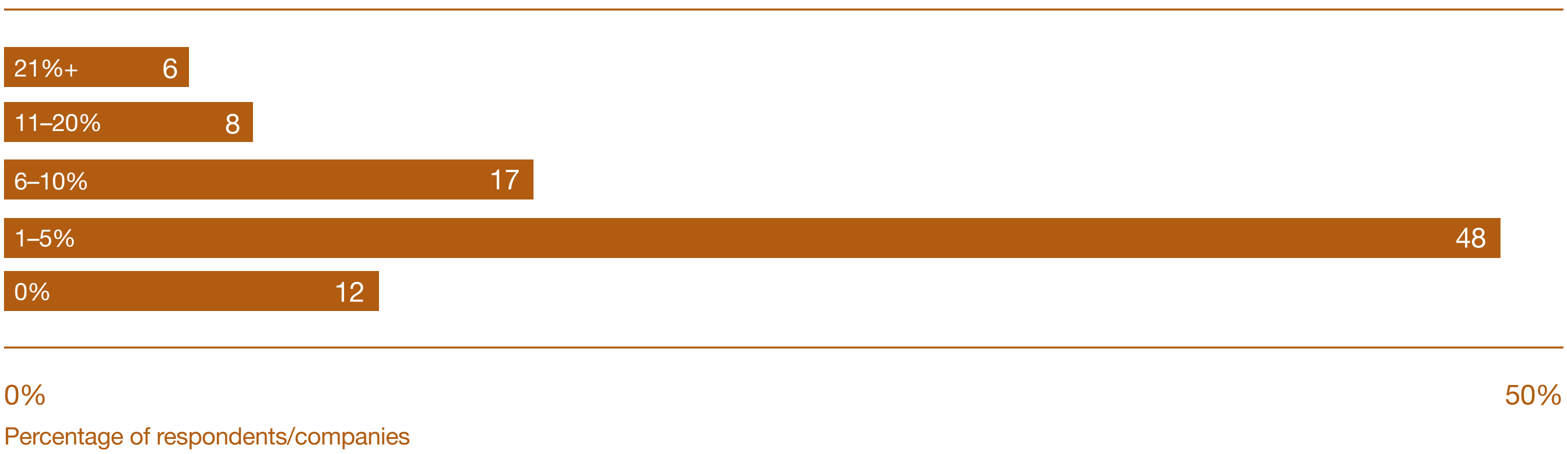
Figure 4. Percentage of respondents who perform compliance audits



Without accurate information on which to base their assessments, technology licensors tend to view leakage as a minor financial issue that does not constitute a material loss. Sixty percent of technology licensors believe leakage accounts for 5 percent or less of total licensing revenue, and only 6 percent report leakage that exceeds 20 percent of revenue.

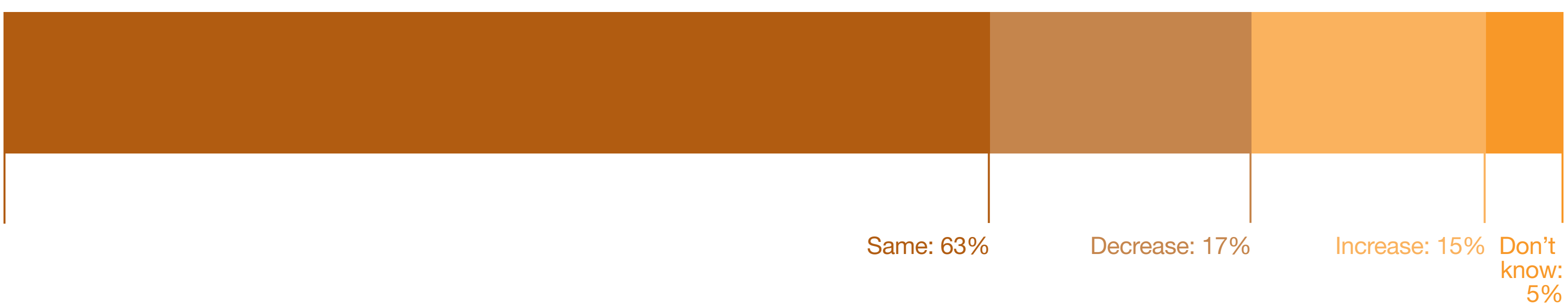
However, data from industry and trade organizations like the BSA and OECD, as well as PricewaterhouseCoopers' own analysis, suggest a serious gap between this perception of leakage and reality. PricewaterhouseCoopers estimates that the actual average leakage at both software providers and other technology licensors is 25 to 35 percent of worldwide licensing revenue—at least five times the estimate given by the majority of survey respondents.

Figure 5. Reported global leakage levels, 2005



Note: 9% replied “don’t know” or chose not to reply.

Figure 6. Anticipated change in licensing revenue leakage between 2006 and 2007



Licensing management: five common misconceptions

Anecdotal (versus statistical) evidence about licensing management and the risks associated with revenue leakage tend to facilitate errors in judgment. For example, many companies wrongly believe the following:

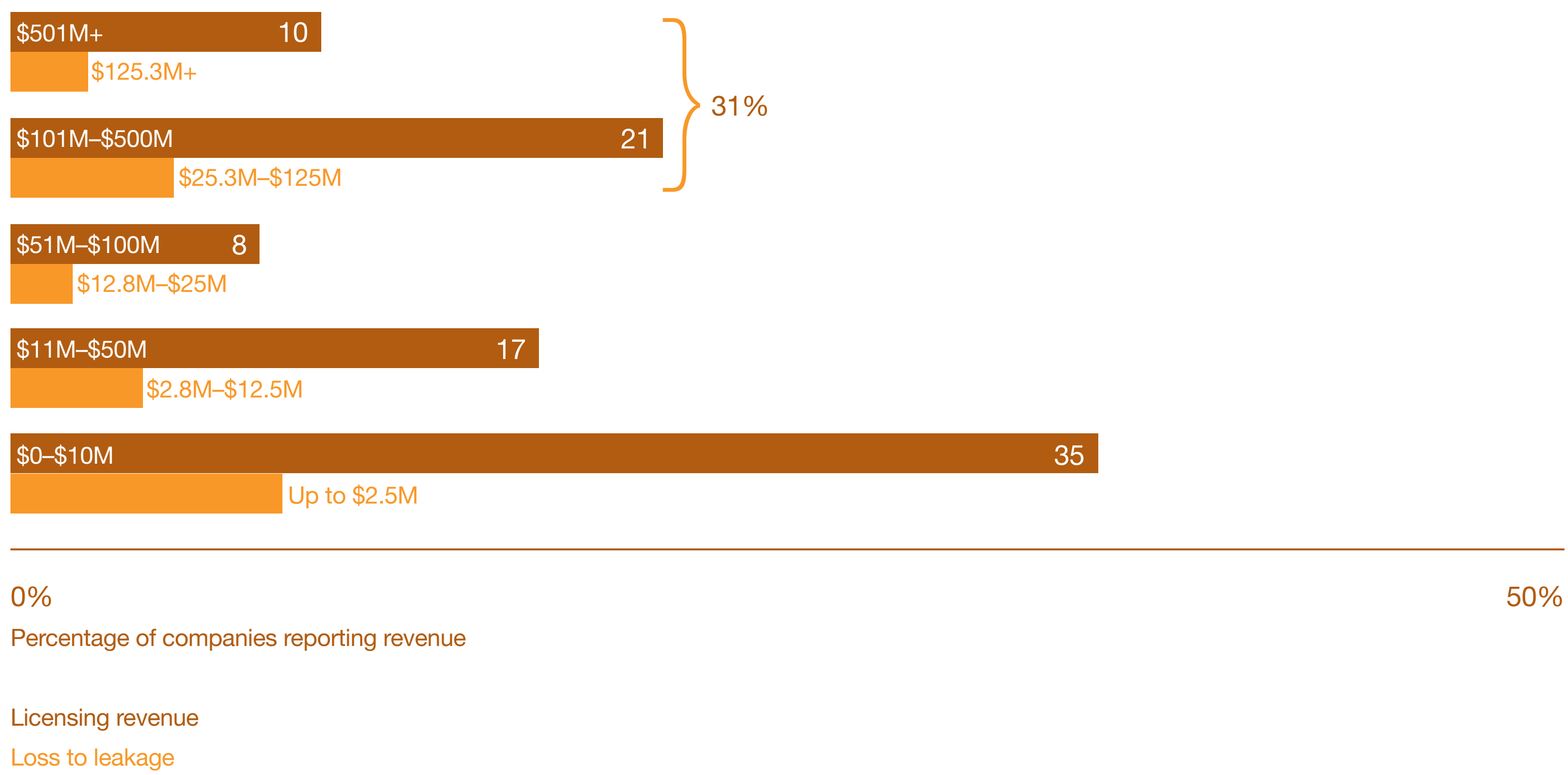
- Annual external financial statement audits are likely to uncover any possible licensing revenue leakage.
- When revenue lost due to leakage reaches significant enough levels, licensors are bound to discover it somehow.
- Revenue leakage is a necessary cost of doing business for technology licensors, particularly those that want to gain market share by distributing their products widely.
- As opposed to other licensees, their licensees are “trustworthy” and unlikely to experience significant leakage.
- Most companies have mature and robust internal controls in place that will properly account for all use and reporting of IP.

2. Licensing leakage represents more than $25 million in lost revenue and $895 million in lost market capitalization for many companies.

PricewaterhouseCoopers estimates that revenue leakage caused between $25 million and more than $125 million in losses for at least 31 percent of technology licensors in 2006.

Based on a worldwide average of 25 percent leakage, PricewaterhouseCoopers believes these figures are more accurate than the lower estimates reported by companies. However, companies' own estimates still suggest losses in the millions. For example, 31 percent of companies reported revenue leakage of more than 6 percent in 2005, and 6 percent reported more than 20 percent leakage. For companies generating $100 million in licensing revenue, these levels represent $6 million to more than $20 million in losses.

Figure 7. Estimated global licensing revenue and loss to leakage (USD), 2006



Note: 9% replied “don’t know” or chose not to reply.

Much lost licensing revenue is incremental revenue that would flow directly to earnings. Using a recent average price-to-earnings ratio for the NASDAQ composite,[1] a loss of $6 million to $25 million in earnings would reduce market capitalization by $215 million to $895 million. Leakage in the $125 million range would impact or reduce a company's market value by approximately $4.5 billion.

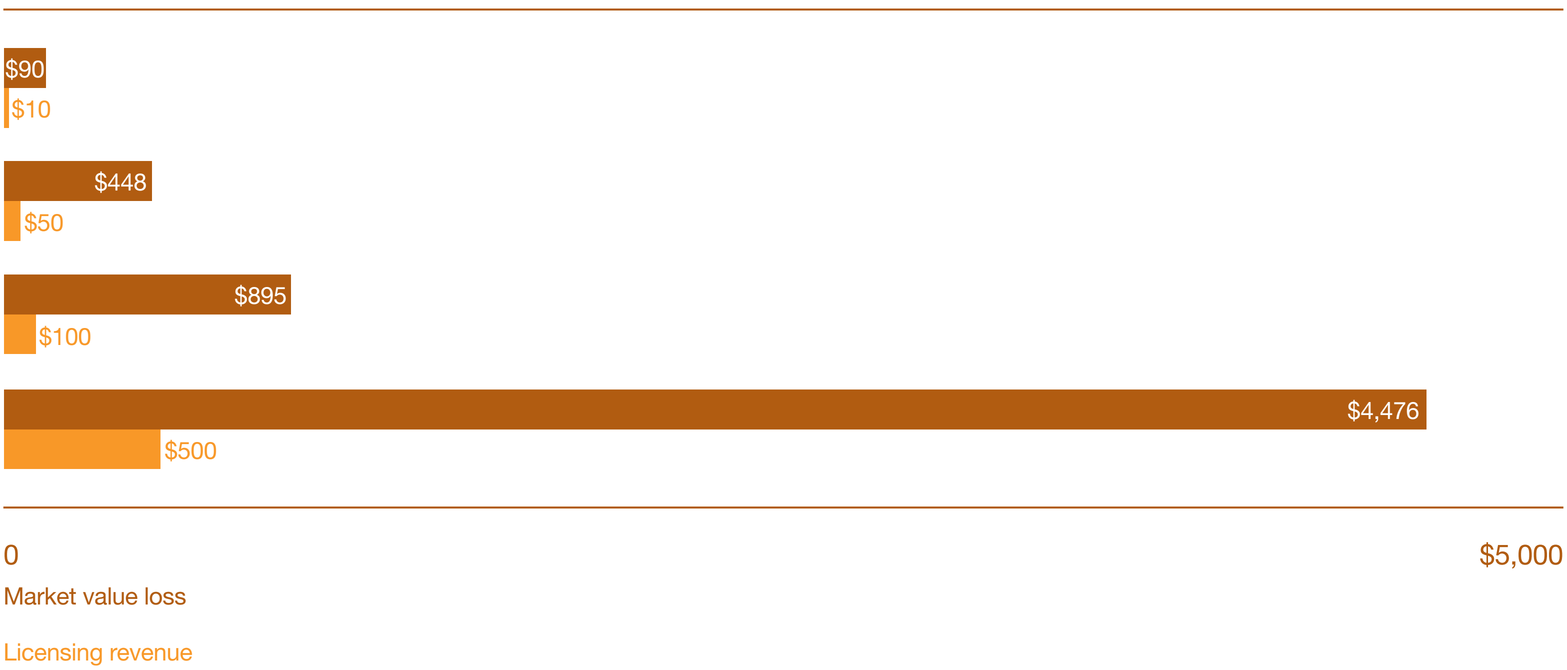
The current state of the technology licensing market magnifies the importance of earnings performance. In recent years, large incumbents have had a growth advantage over small licensors due to a "network effect" in licensing portfolios.[2] Expectations for these incumbents continue to run high. As assets of large, generally public companies, large licensing portfolios are under constant pressure to maintain growth and boost corporate earnings.

Many small licensing portfolios are under a similar amount of pressure because earnings are a critical component in sale value. With a network effect fuelling the growth of large portfolios, the best way to unlock the potential of small portfolios is often through acquisition by a larger player.

1 On April 11, 2007, Bloomberg reported that the average price-to-earnings ratio for the NASDAQ Composite Index was 35.81.

2 The economic implication of the network effect, which was originated by Robert Metcalfe, is that larger networks offer more value to potential customers and therefore attract new users more easily. This effect has a tendency to reduce the number of midsize networks by slowing the growth of smaller players and helping midsize players grow rapidly into large ones. For example, in the technology licensing market, the percentage of companies with less than 501 or more than 1,000 licensing agreements is increasing, but just 4 percent finished 2006 with midsize portfolios (containing between 501 and 1,000 licensing agreements). For more on the operation of Metcalfe's Law in the licensing marketplace, see PricewaterhouseCoopers' *2006 Licensing Competitiveness Study*.

Figure 8. Estimated impact on market capitalization (USD millions)



3. Technology licensors are most concerned about licensing revenue leakage in China and the United States.

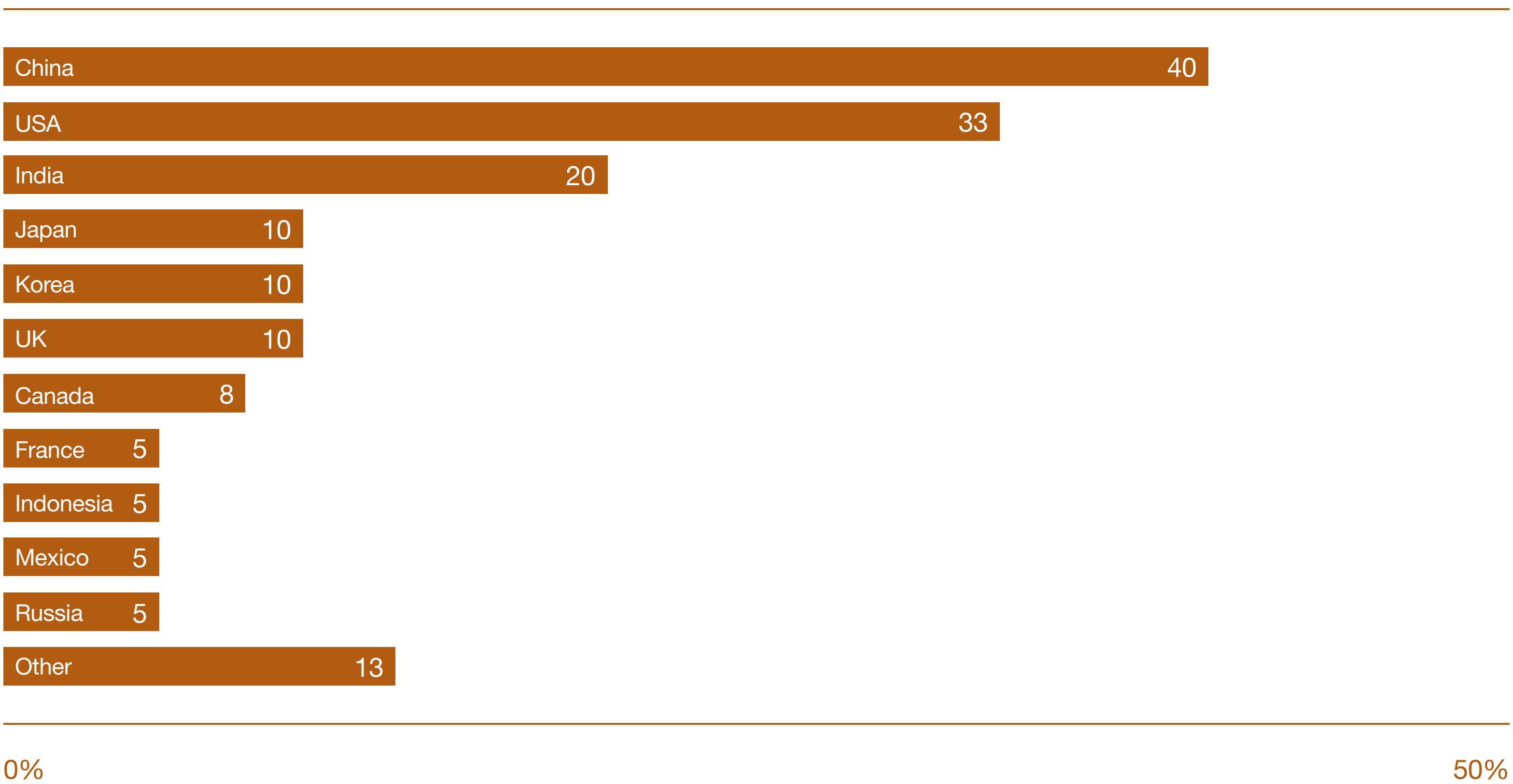
Almost three quarters of technology licensors that report licensing revenue leakage are particularly concerned about China or the United States. The highest proportion of companies (40 percent) rate China as a top region for leakage, and 33 percent consider the US a primary concern.

China is the world's fastest growing licensing market. In recent years, the Chinese government has made significant progress in developing the legal, financial, and regulatory standards necessary to enforce intellectual property rights. Enforcement mechanisms have not yet fully embraced or incorporated these standards, but just as importantly, neither has Chinese consumer culture. Among average Chinese users, a tradition of communal ownership remains strong with respect to less tangible forms of property, such as software code, patents, trade brands, and other forms of intellectual property.

Not surprisingly, when compared to leakage in other global regions (e.g., Europe, South America, and North America), revenue leakage is most widespread in Asia Pacific, where it affects 80 percent of technology licensors. In the coming years, the incidence of leakage is likely to decline as support for IP protection increases. The Asia Pacific region is producing an increasing number of homegrown technologies, leading more local governments, businesses, and inventors to recognize the economic advantages of enforcing international IP rights.

In contrast to China, the United States is the most mature licensing market in the world, and its customers generally have a healthy respect for the limits of fair use, when the market provides viable alternatives to pirated IP. One might therefore expect the incidence of leakage in North America to be far less than in Asia Pacific, but 77 percent of technology licensors report leakage in North America, ranking it second for leakage among the world's major regions.

Figure 9. Top regions for licensing revenue leakage

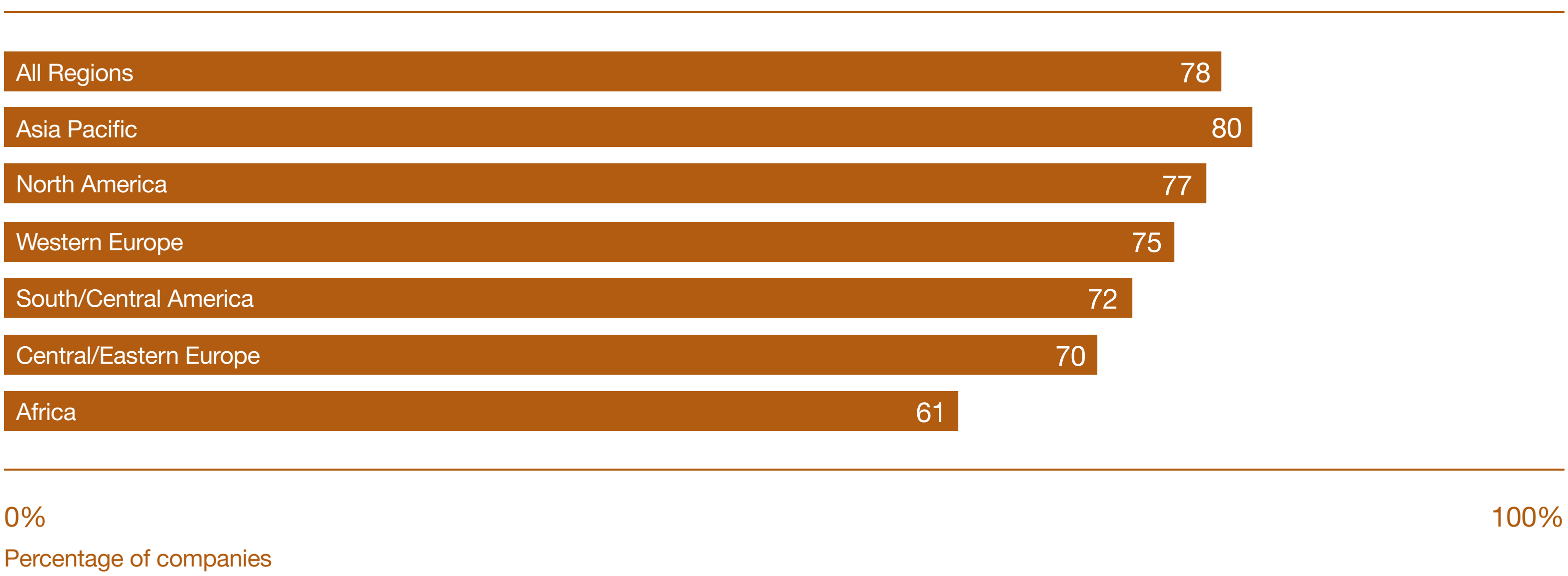


Percentage of respondents that named each region as one of their top three concerns for leakage

The high reported incidence of leakage in the US may result in part from a higher level of transparency. Compliance audits, which are most likely to uncover leakage, are relatively more common in the US. Companies are generally more motivated to investigate leakage in the US because they view lost revenue as potentially much larger and easier to recover as compared to losses in other regions, particularly Asia Pacific.

The US licensing market also has the highest average number of agreements per company. In 2005 and 2006, more than half of companies reported more than 250 licensing agreements in North America and about one quarter reported 2,500 or more. This contrasts with Asia Pacific, where only 25 percent of companies reported having more than 250 agreements. As the number of license agreements increases, revenue leakage becomes more likely and companies must dedicate more resources to manage compliance.

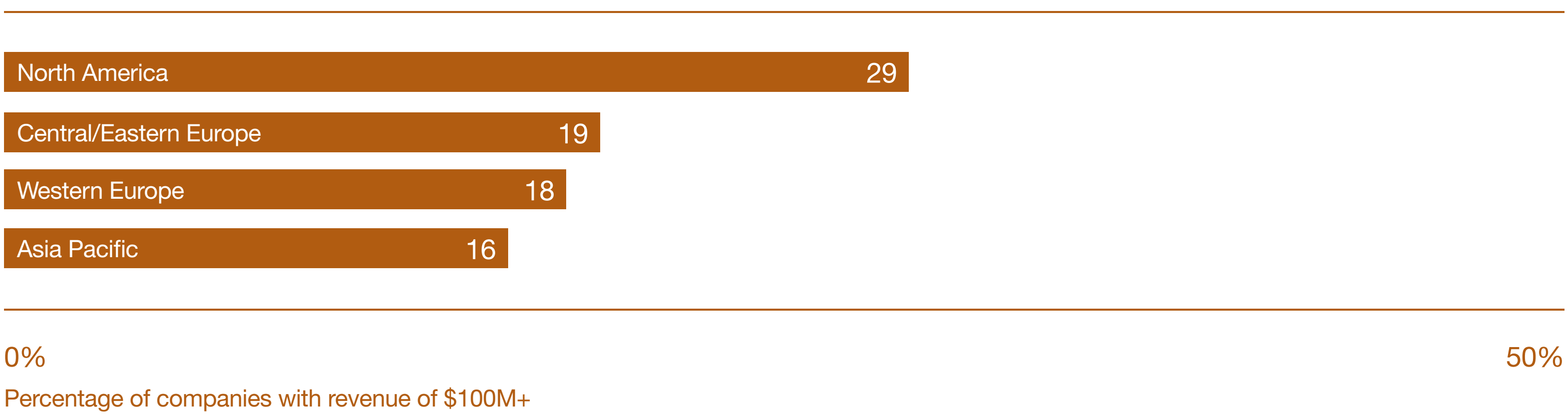
Figure 10. Percentage of companies reporting leakage in regional operations, 2006



Note: Respondents were asked to indicate all that apply.

Overall, the level of concern expressed about leakage in the US market is clearly driven by the market's size. North America generates the most licensing revenue for respondents to the survey, and therefore presents the greatest potential for financial loss. Twenty-nine percent of companies reported licensing revenues of more than $100 million in North America in 2005, versus 19 percent in Central/Eastern Europe, 18 percent in Western Europe, and 16 percent in Asia Pacific. See figure 11.

Figure 11. Total licensing revenue per region



Note: Respondents were asked to report revenue in each region.

4. Regulation (Sarbanes-Oxley), changing attitudes, and new compliance tools are driving increased scrutiny of licensing compliance.

Although almost half of technology licensors still do not exercise their audit rights within their license agreements, the use of audits has risen by more than 20 percent since 2004.[1] In 2004, 31 percent of technology companies reported using audits as part of a licensing compliance program. In 2006, 54 percent of all technology licensors employed compliance audits, a number that increased to 61 percent among companies with more than $1 billion in total revenue. Part of this increase may be due to the Sarbanes-Oxley Act, its Section 404 provisions, and the resulting PCAOB Auditing Standard No. 2. While these regulations do not directly address IP licensing revenues, they do establish a framework of internal controls that both licensors and licensees are applying to licensing revenues and royalties.

As more technology licensors successfully employ licensing compliance programs, attitudes are shifting with respect to monitoring and compliance methods. For example, empirical evidence has greatly reduced the once common fear of impairing customer relationships by auditing. Among companies polled by PricewaterhouseCoopers in 2006, 89 percent believed their customer relationships remained the same (75 percent) or grew stronger (14 percent) after compliance audits. Among software companies running software audits, the percentages were similar. Seventy-four percent reported that software audits had no effect on their relationships with end-users, and 11 percent reported improved relationships.

1 Most licensing agreements include an "audit rights" provision that allows the licensor to review the books and records of the licensee. This is generally the only vehicle that allows the licensor visibility into the use of, and reporting of, the licensed IP rights.

Figure 12. Percentage of change in relationship, post-audit

Figure 13. Percentage of change in relationship, post–software audit

Note: No respondents selected "worsened." Total is 102% due to rounding.

Among software publishers and developers, plans to institute automated compliance tools are also becoming popular. Led by medium-sized companies, 58 percent of software vendors that run software audits plan to incorporate automated compliance into future releases of their products. The growing distribution of software as a service (SaaS) will also provide licensors with a much clearer picture of usage levels at their licensees. Under most licensing arrangements in today's software industry, licensors have little to no visibility into the deployment and use of IP rights. However, PricewaterhouseCoopers believes that by 2010, standard automated licensing tools and changing software distribution models will significantly increase transparency in software licensing.

Improving customer relationships through audits

When handled properly, licensing compliance audits can strengthen the relationship between licensor and licensee. For example, a major technology licensor recently decided to audit a midsize customer. In order to conduct the audit, the licensor's head of compliance worked closely with the licensee's CFO, increasing the level of coordination between the two companies. In the year following the audit, the increased cooperation led the licensee to become a significantly larger customer by expanding its use of the technology into different product lines. Thus, the audit and strengthened business relationship resulted in new revenues that otherwise would not have been generated.

Companies that hope to improve their licensee relationships through audits should keep a few best practices in mind:

- The audit approach must be professional and transparent at all times, and there should be one "owner" at the licensor responsible for all aspects of the program. A single point of contact is critical for both parties and will expedite the process.
- The licensor's sales team should not be directly involved in the audit, but should be kept abreast of significant developments. Most importantly, licensors must provide incentives that encourage their salespeople to facilitate licensing audits, including the payment of commissions on settlements with licensees.
- Once an audit is complete and any findings settled, the licensor should communicate with the licensee about how they might improve their controls and processes, and how best to resolve future issues between the parties (e.g., through a new license agreement that addresses unclear language).

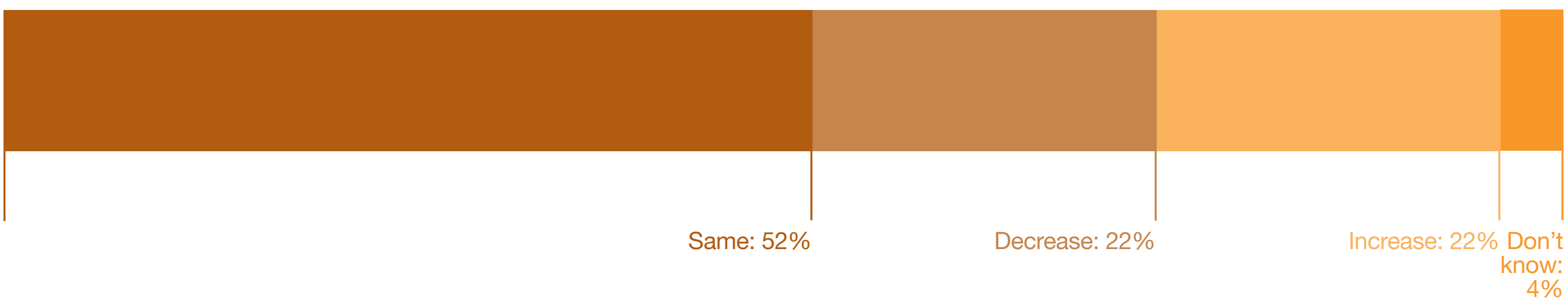
5. Best practices could significantly improve the effectiveness of many licensing compliance programs in recovering lost revenue and strengthening customer relationships.

The amount of revenue leakage should decrease over time as licensing markets mature, users become more sophisticated, and IP owners become more focused on maximizing revenue. Seventy-eight percent of all technology licensors, however, expect levels of revenue leakage to remain the same or increase in the near term. Even among those with procedures in place to recover leakage, 74 percent expect leakage to stay the same or increase in the future.

Licensors may not have faith in their abilities to reduce leakage because of limited past success in instituting licensing compliance programs. Executives that support increased compliance monitoring and revenue recovery often face a catch-22. The absence of a licensing audit or the use of small samples for an existing compliance program is likely to underestimate the value of revenue leakage. Without accurate leakage valuations, a licensing compliance function cannot properly estimate its true return on investment (ROI). The cost of increased vigilance, then, has difficulty competing with other budget priorities. For example, 28 percent of companies without revenue-recovery procedures cite resources and cost as major obstacles.

The leakage estimates discussed above suggest that revenue-recovery programs are very likely to pay for themselves and, in many cases, also add to the bottom line. PricewaterhouseCoopers estimates that more than 80 percent of licensing audits produce an economic finding. Similarly, PricewaterhouseCoopers' *2005 Technology Licensing Marketplace Study* found that a majority of technology companies with compliance programs in place experienced some increase in licensing revenue as a result. In PricewaterhouseCoopers' experience, a well-conducted licensing management and compliance program generates an effective ROI of 8 to 12 times its cost.

Figure 14. Anticipated change in licensing revenue leakage between 2006 and 2007 (among firms with procedures in place to recover revenue leakage)



Licensing compliance programs can also improve their effectiveness by reducing the likelihood of contract disputes. One quarter of technology licensors see differences over contract interpretation as a primary cause of licensing non-compliance. Because licensing intersects technology, finance, and law, contracts must employ language that carefully considers implications in all three areas. Companies should consider designating an "owner" to consult with legal, accounting, and technology experts in order to develop internal standards that can head off the most common areas of disagreement with licensees.

Unfortunately, companies generally cannot exert direct control over the reporting or use of technology by licensees. For example, 38 percent of technology licensors believe that a lack of internal controls among licensees is the main cause of non-compliance. However, through audits and properly structured contracts, companies can provide incentives for good behavior. One common contract requirement is known colloquially as a "5 percent clause." It stipulates that when an audit discovers underreporting or overuse adding up to more than 5 percent of the amounts paid by the licensee, the licensee must cover the cost of the audit.

Figure 15. Main reason causing "out of compliance" issues

Note: Total is 101% due to rounding.

Sector focus: software providers

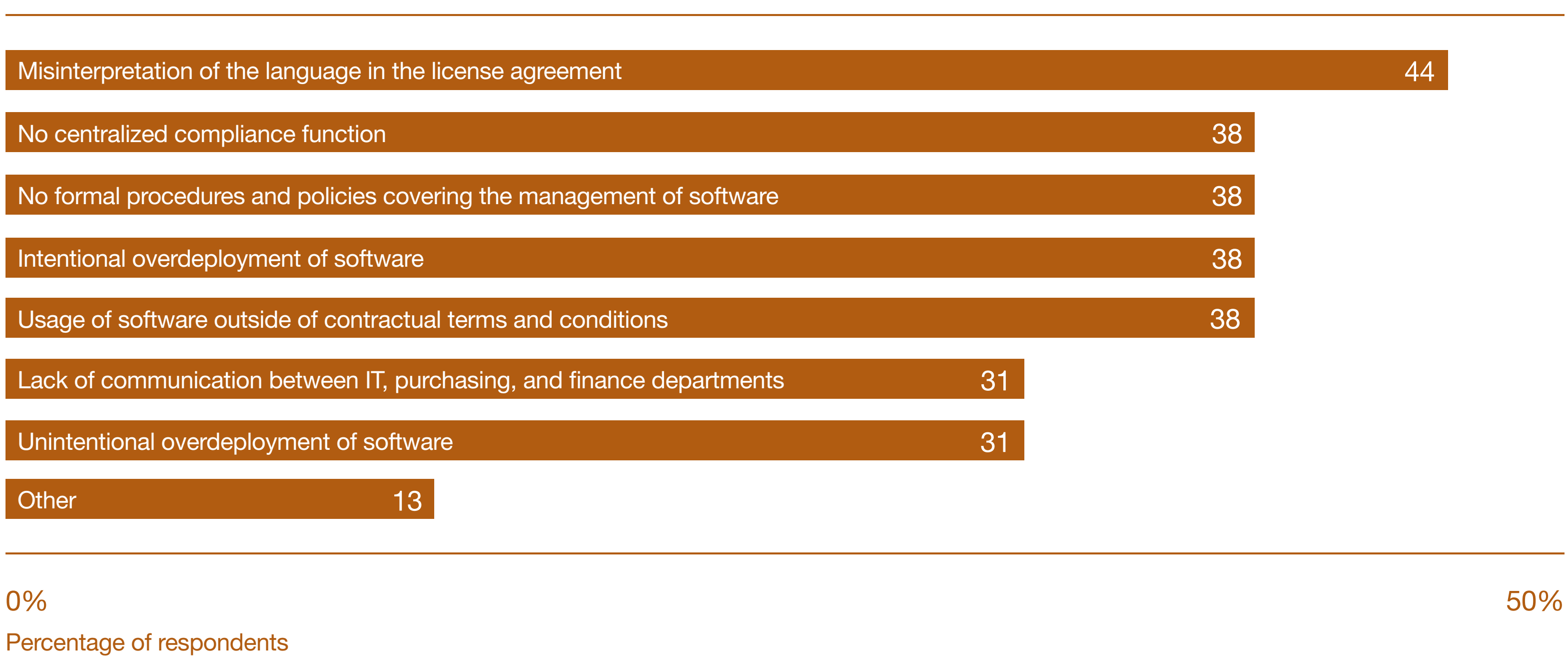
Eighty-four percent of software providers use licensing audits at some level, which often reveal non-compliance—in fact, two thirds of software providers report non-compliance issues with service agreements. The most common cause of non-compliance is misinterpretation of the language in license agreements. Other common causes include the lack of a centralized compliance function, no formal procedures and policies for the management of software, intentional overdeployment of software, and the use of software outside of contractual terms and conditions.

These causes of non-compliance indicate that many software licenses are complex and contain legal language that is difficult to implement. Most contracts mandate that the licensee maintain the required systems, policies, and procedures for self-reporting, but licensors have great difficulty obtaining an accurate account of usage for several reasons:

- Users often do not understand the terms and conditions of software use.
- Legal language cannot keep pace with technological change. Licensing agreements often have difficulty anticipating how technology might be deployed in a little as one to two years.
- The internal controls needed to track and report on IP use are usually not top priority—this cost is not necessarily "in the budget."

An effective way for software users to support compliance is to develop a software assessment management (SAM) program. SAM programs actively manage software like any other asset, attempting to maximize its benefit to the company. A key component of SAM is tracking and understanding the deployment of software as it relates to license agreements and allowed usage. SAM generally employs a number of tools, including internal controls, management review, business processes, tracking and management technologies, and corporate policies.

Figure 16. Primary reasons for non-compliance with software agreements



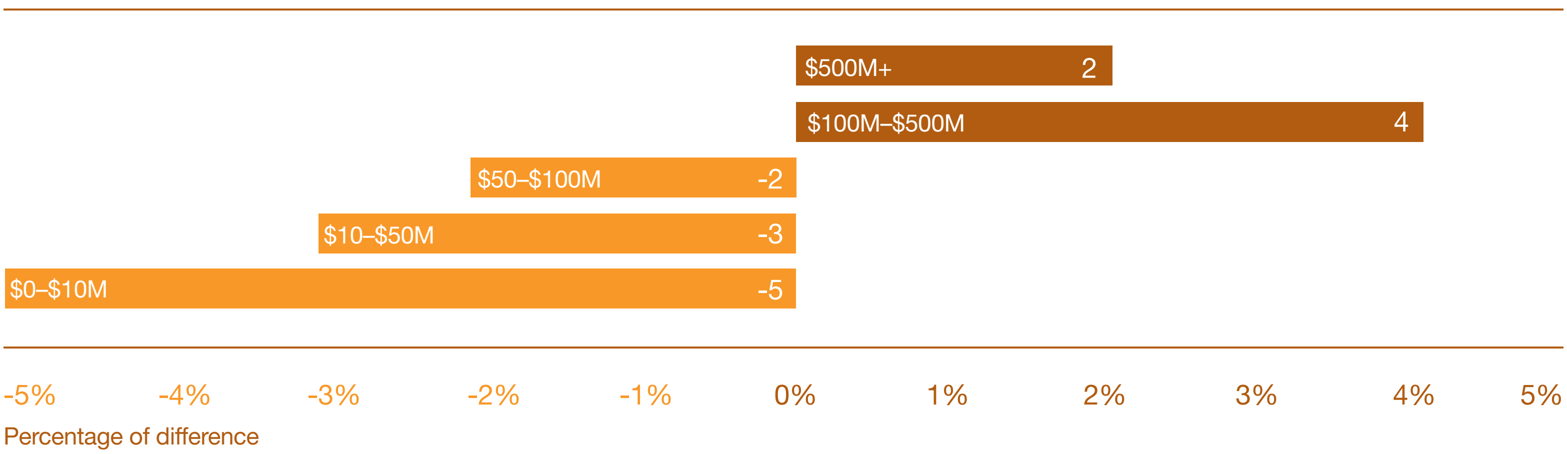
Note: Respondents were asked to indicate all that apply.

Conclusion

Average revenue is rising in the global technology licensing market. PricewaterhouseCoopers estimates that the number of technology licensors generating $100 million or more in revenue increased 6 percent from 2005 to 2006. This growth puts even more companies at risk of losing millions in earnings and potentially billions in market capitalization to unlicensed technology.

The current lack of awareness regarding this risk springs from a combination of underestimation, rationalization, and incomplete licensing compliance practices. But attitudes are changing. Guided by the precedents in Sarbanes-Oxley, aided by new tools, and driven by increasing revenues, the licensing marketplace is becoming more transparent and mature. As best practices for revenue tracking and compliance become standard practice, so will respect for, protection of, and appropriate economic compensation for intellectual property.

Figure 17. Expected difference in licensing revenues (USD), 2005 to 2006



Methodology

PricewaterhouseCoopers *2007 Technology Licensing Marketplace Study* is based on interviews with CFOs and CIOs at companies in the United States and Canada with annual revenue of $250 million or more and operations involving licensing agreements. These companies were identified by SIC codes that traditionally fall within the technology sector, but 29 percent of respondents classified their companies in industries outside the technology sector, including professional services, financial services, distribution and logistics, publishing, automotive, consumables, and research. Fifty-two interviews were conducted between September 21, 2006 and December 20, 2006, by Harris Interactive. Analysis was provided by PricewaterhouseCoopers' San Francisco–based Licensing Management practice.

For more information, please contact:

David L. Marston
415.498.6585
david.l.marston@us.pwc.com

Geoffrey Osborne
267.330.3040
geoffrey.h.osborne@us.pwc.com

Mary Shelton Rose
213.217.3169
mary.shelton.rose@us.pwc.com

Michael Yachnik
646.471.8314
michael.j.yachnik@us.pwc.com

Or visit:

www.pwc.com/us/licensing

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