KPMG

INFORMATION, COMMUNICATIONS & ENTERTAINMENT

Software Asset Management

Mitigating Risk and Realizing Opportunities

KPMG INTERNATIONAL

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Contents

Foreword

What is software asset management (SAM)? Is it simply an exercise in compliance—a means of reducing budgetary surprises in the event of an audit by a software publisher? Or is there more to be gained by implementing greater sophistication in the control and management of software deployment?

For many companies, both the overall expense of software as well as software's share of overall IT spend are growing by leaps and bounds. This trend provides insight into both questions.

Yes, better compliance often flows from SAM. Higher software spending—coupled with less than optimal licensing management practices—can mean higher potential variances. Companies can ill afford such surprises in their budgets, nor is a state of careless compliance an acceptable form of corporate governance.

The real value of SAM may be its ability to help an organization control software costs and optimize software deployment. Companies are learning that paying greater attention to their licensing environments can reduce total software spend. The savings include reductions in initial purchase expense, as well as lower costs associated with ongoing maintenance. According to my colleague Ron Brill, who is KPMG's global leader for software asset management, "companies are finding numerous strategic benefits, such as enhanced insight into software effectiveness and closer linkage with business strategies".

There are barriers to SAM, however. For example, end-users point to a lack of standards in the marketplace. Software is sold under many models—per user, per server, per concurrent users, per processor or even by processing power. At the same time, software often lacks adequate tagging making it even harder for companies to identify the various applications deployed. Furthermore, as raised by my colleague Brian Bogardus at KPMG in Australia, "if things weren't complex enough already, consider a future of multi-core, virtualized servers as well as fast-emerging software-as-a-service (SaaS) and cloud computing models."

Publishers say the challenges are greater than many end-users realize, and they insist it is up to companies to better police their own software environments. Many companies, meanwhile, maintain that publishers use complex licensing models and weak detection as a way to maximize distribution on corporate networks.

But pointing fingers accomplishes little. Instead, both publishers and end-users can seek common ground, working together to promote and accomplish greater degrees of SAM capability.

While publishers can do more to assist, ultimately, it may be up to end-user corporations to become more proficient in managing their own software assets. And in the process, end-users may discover that gaining control of and optimizing their software estates can lead to an array of immediate cost reductions, efficiency gains, and not to mention, a host of longer-term strategic benefits.

David Eastwood
Partner, Global Leader
Intellectual Property and Contract Governance
KPMG in the U.K.

Executive Summary

Good corporate governance dictates that a company be fully aware of where and how its assets are being used. This is the essence of Software Asset Management, or SAM, which enables an organization to keep better track of the deployment and utilization of software across the enterprise. This study looks at how a comprehensive SAM strategy can help companies reduce their risks, improve their governance and better manage their bottom line.

What is SAM?

Broadly defined, SAM is a business practice designed to reduce IT costs, limit risks related to the ownership and use of software, and increase corporate-wide and IT efficiencies. The enhanced knowledge that comes via SAM can provide a range of benefits, including:

- Better insight into software usage and value
- Reduced over- or under-licensing of software
- More efficient software maintenance
- Better buying decisions and negotiating power
- Improved system security, data integrity and data security
- Lower costs and greater efficiency.

The ROI of SAM

Effectively deployed, SAM can deliver improvements across a range of dimensions. These include:

Better control of the IT footprint: Many companies already apply active management principles to their hardware assets. But when companies add that same level of sophistication to their software assets, they create the potential to save many millions of dollars through more optimal use of all technology assets.

Better purchasing decisions and negotiating leverage: Enhanced visibility into actual software needs means not only can companies procure and deploy the right increments of software in the right areas, but they also can do so more cost effectively through tools such as volume purchase agreements or bundled services.

Enhanced licensing compliance: Companies tend to overestimate their ability to track licensing compliance. SAM helps make sure companies run only authorized software.

Enhanced risk management and governance: A company that doesn't know what software it is running cannot know the risks it is assuming. Data integrity and security, customer privacy and even network vulnerability can all be compromised by the failure to understand and control the software environment.

Intangible benefits: A sound SAM environment can improve responsiveness, flexibility, information flow and a host of related "soft" benefits.

The Challenges to SAM

Despite the benefits companies can attain through SAM, a number of factors conspire to prevent them from implementing SAM capabilities of appropriate caliber:

Low prioritization: When viewed simply as a compliance exercise, SAM can fall behind other, more pressing priorities. Also, many believe that SAM can be achieved with a simple software application. But such tools are wholly ineffective without comparable adjustments to processes and culture.

Complex licensing rules: Software licensing can be so complex and varied that even some providers are not clear how their agreements are structured. This can make it more difficult to track and comply with these requirements.

Disjointed procurement/deployment processes: In many companies, the main groups that SAM can affect—legal, procurement, IT and finance—seldom interact closely with each other, nor share common objectives. As such, focus on overall efficiency or optimization is often sacrificed.

Inadequate historical licensing data: Older licenses, mergers, acquisitions, outsourcing agreements and other issues can make licensing documentation a daunting challenge.

Leading Practices

Enabling SAM effectively requires companies to translate goals into practical attributes and actions. Some leading practices include:

Company-wide buy-in: SAM is not strictly an IT issue but one that can be part of overall governance and strategy. Companies will need to find various champions drawn from a range of disciplines including IT, legal, procurement, finance and other key areas.

Create multidisciplinary teams: Software procurement involves a host of disciplines including legal, procurement, IT and finance. The achievement of SAM will require these groups to understand each other's needs and objectives and to begin using common terminology.

Assign roles and responsibilities: Establishing the governance framework including clear roles and responsibilities is essential.

Change the culture: A significant cultural hurdle is that many businesses have yet to recognize the need to take control of the process and begin more active management of their software assets.

Gain control of the environment: An important step in the drive to SAM is centralizing the deployment of software. IT staff need to be aware of the key requirements of software licenses and deployment.

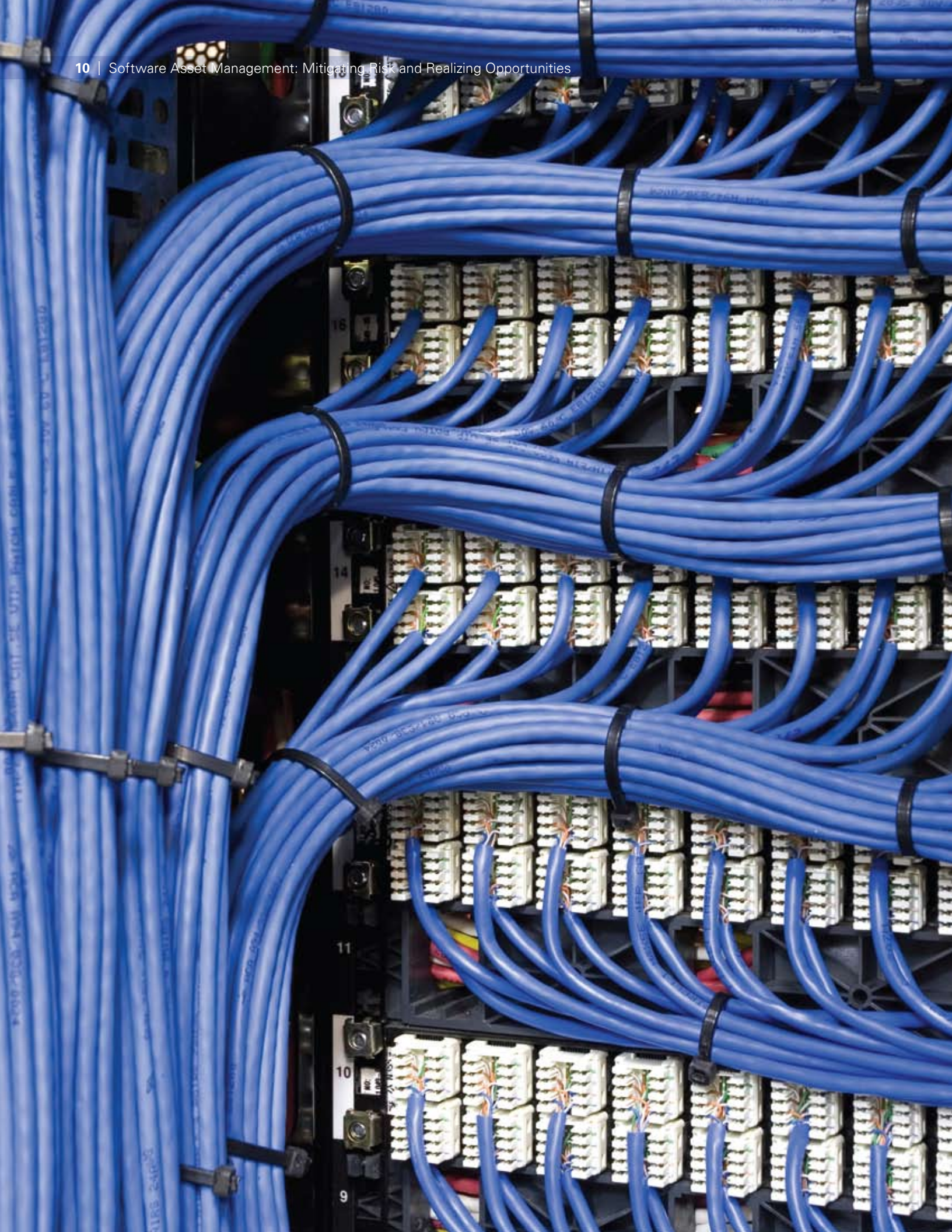
Implement the right tools: Process and culture are critical, but organizations also need to implement a host of technologies to enable the SAM state.

Engage with publishers: SAM is not an "us versus them" framework but rather a roadmap toward greater understanding and visibility between software publishers and end-users.

Conclusion

As more companies begin to realize the value of their software assets—and that this value is being compromised by failing to actively manage these assets—undoubtedly, SAM adoption will grow. It will not be long in fact before companies with limited SAM capabilities will become the exception.

Overall, SAM represents a more proactive approach to the management of a vital strategic asset. The ability to harness the power of software is becoming a key differentiator. Those companies that can do so most efficiently and effectively soonest will gain significant competitive advantage.



Introduction

A shift is taking place within enterprise IT. Tracking assets and expenses once focused on computers, servers, printers and other hardware that made up the lion's share of the IT budget. But today, with software constituting a growing portion of IT costs, executives need to devise a strategy that more actively manages this increasingly integral and valuable asset.

The role of software has changed dramatically over recent decades. In the mainframe era of the 1970s, software was generally customized with code written in Cobol or Fortran to meet each company's specific requirements. In many cases, software was an afterthought to the power of the hardware, and the centralized nature of this scheme made its management easier.

The emergence of the PC in the 1980s saw the explosion of word processing, spreadsheets and other "personal" productivity packages that put greater control of software into the hands of end users.

By the 1990s, client-server networks matured, becoming both more popular and complex. Their arrival began a shift in the nature of software deployment, resulting in more control than could be achieved with individual PCs while at the same time increasing the risk of over deployment on networks themselves. This decade also birthed that minor innovation, the World Wide Web, which was initially accessed at dial-up baud rates, and later at broadband speeds. As for networks themselves, storage once measured in megabytes and gigabytes is now being measured in terabytes and petabytes.

Today software is globalized, virtualized and, in terms of human and commercial endeavors, all encompassing. It controls the production, refinement and delivery of energy. It operates aircraft and trains. It manages equity trades and dispenses cash. It controls farming processes and food distribution.

In terms of business, software executes transactions, controls processes and enables supply chains. In fact, an organization's ability to harness software and related technologies is today a core differentiator.

But as valuable, effective and vital as software may be, one question arises: how are businesses managing this asset class?

Most IT managers are already highly skilled in managing and optimizing their hard assets. But given that software is so fungible, so virtual, so easily copied and transferred, doesn't it follow that managing such an asset would require even more rigor?

Meanwhile, software's evolution continues. New technologies such as multi-core processors and virtualization can add more challenges to the management of software assets. New business models such as software-as-a-service (SaaS), cloud computing and open source can change the way things are done and potentially add layers of complexity.

Thanks to these and many related drivers, the next epoch in IT asset optimization is currently underway. For many, this pursuit is on toward a business model known as software asset management (SAM).

Meet SAM

IT asset management that focuses exclusively on hardware is going the way of the fax machine—a one-time essential that now seems dated and passé. "Today," says a SAM-focused executive at a major global financial services group, "it's time to begin thinking in terms of the next epoch in overall IT optimization." For this executive, this means that in addition to actively managing its hard IT assets, his company is striving to implement SAM.

Broadly defined, SAM is a business practice designed to reduce IT costs, limit risks related to the ownership and use of software, and increase IT and end-user efficiencies. SAM enables an organization to keep better track of the deployment and utilization of software across the enterprise.

For many companies, SAM often refers to ISO/IEC standard 19770-1 (see sidebar below). This standard not only provides a framework for processes and practices to be designed to assist end-users in managing broader IT assets, but also a mechanism to better manage software licensing agreements. According to a senior IT executive at a major global bank, the ISO standards provide a sound, basic framework for improving practices. But, notes the executive, "there is also a benefit to being able to show financial regulators that you are ISO-compliant. That's particularly important to us as we have over 500 regulators globally."

C-Suite Takeaway
The Key Goals of SAM

- Better insight into software usage and value
- Reduced over- or under-licensing of software
- More efficient software maintenance
- Better buying decisions and negotiating power
- Improved system security, data integrity and data security
- Lower costs and greater efficiency

SAM Standards & Guidance

The International Organization for Standardization (ISO) first weighed in on SAM in 2006 with the release of its ISO 19770-1 standard, which focuses on processes that can demonstrate a company is adequately tracking its software assets for purposes of corporate governance.

Standards in progress include ISO 19770-2 and ISO 19770-3. The former will address data standards for software identification tags and the latter software entitlement tags.

While these initiatives are useful in a SAM context, perceptions in the marketplace are that their focus is, to a large degree, compliance-focused. Moreover, there are practical issues that will not necessarily be addressed through the creation of a standard. For example, even if software tags are developed, there may be little incentive for updating the tags on legacy software.

The Information Technology Infrastructure Library (ITIL) Guide to Software Asset Management covers the governance, management and use of software assets across the organizational boundaries. ITIL helps align the business and IT contexts assisting with the implementation of SAM throughout the asset lifecycle.

To get the most from SAM, organizations should view the standards as important guides, albeit ones that can be built on and surpassed to address their business-specific needs.

The ISO standards may be useful, but the trouble, says the financial services executive, is that "they focus too much on the compliance issue" and miss the most important issues in strategic asset optimization. While the standard is "worthwhile and extremely useful," the executive says, "the real value of managing your software assets doesn't materialize until you begin thinking in terms of the total picture: hardware assets, software assets, business objectives and growth plans."

Steven Heal, a senior manager at KPMG in the U.K., agrees. While the ISO standard "may be very useful", in practice it receives "way too much airplay" leaving many companies with "a relatively limited idea about what SAM is and what they can actually accomplish with SAM." Certainly, "companies need to do a better job of managing their licensing," says Heal. But under Heal's definition of SAM, the initiative encompasses a broader swath of software-focused practices.

This broader view is encapsulated in the ITIL Guide to Software Asset Management. Recently revised to version three, the guide provides essential advice on the risks and business drivers for the adoption of SAM throughout the software asset lifecycle.

As software becomes, or is already, an increasingly significant component of IT spend, the importance and value of implementing SAM increases. Software is a critical enabler, touching virtually every core process in every business—from sales, marketing and customer interactions, to product design, production, control, procurement, supply chain, planning and modeling, to name a few. Given such a vast, often global, software footprint, companies need a clearer understanding of how they in turn "manage, procure, develop, test, release, maintain and retire the software they need to run their business," Heal notes.

As opposed to a licensing focus, he adds, companies should begin thinking of SAM as a way to "optimize all of the infrastructure, tools and processes associated with the procurement and use of software." The real focus, Heal says, "is to achieve more from your software assets." Better licensing compliance, though not the primary objective, "will then just fall into place."

The ROI of SAM

An effectively deployed, more broadly defined SAM program can deliver improvements across a range of dimensions. A solid SAM initiative is not an expense to be justified, but rather an investment that can provide a marked competitive advantage. Companies implementing an integrated SAM program frequently report both significant direct cost savings as well as efficiency gains. Moreover, these benefits are by no means limited to the IT department, but often extend into the broader enterprise.

Better control of the IT footprint

Most companies are already applying active management principles to their hardware assets, often referred to as IT asset management (ITAM). But when companies add that same level of sophistication to their software assets, "when they combine SAM with ITAM," says Ron Brill, KPMG's Global SAM Leader, "they create the potential to save many millions of dollars." By continuously evaluating, updating and adjusting/improving software deployment, companies can achieve an optimization of both software and hardware spending. As Brill explains, "there can be fewer software deployments, translating into less hardware, less data center space and less power consumption." So not only are there "green benefits", says Brill, "but you can get to a more optimal total cost of ownership."

Better management of IT assets also can lead to labor cost savings. A 2008 KPMG study found the greater visibility provided by a SAM program can reduce the number of IT resource hours required to manage the environment, potentially dropping these costs-per-PC by half. (See graph, page 17)

Better purchasing decisions and negotiating leverage

Enhanced visibility into actual software needs and deployment can translate into significant savings. Not only will companies be more likely to procure and deploy software in the right areas in the right increments, they can do so more cost effectively through tools such as volume purchase agreements or bundled services.

For example, the IT executive from a major global bank uses SAM-generated insights to identify opportunities to consolidate relationships with software publishers. The savings, says the banking executive, "are enormous, both initial and ongoing." In addition SAM is enabling the company to weed out or re-harvest unused software licenses. By tracking usage, the firm can tell if the software being purchased is actually being used. "So if someone doesn't use Microsoft Office for 90 days, we'll take back that license, it's placed in a repository, and now, further down the line, that translates into another license we won't have to buy," explains the executive.

For the largest businesses—the bank we interviewed had over 200,000 employees worldwide—the savings from better management of common programs "really adds up," says the executive. But the bank also uses a number of big-ticket programs. As the executive notes, the firm uses software development programs that cost upwards of $65,000 per license. "If we can reduce the number of licenses there, if we save only three or four, that's a quarter of a million dollars," says the executive.

Next, the global financial services firm uses SAM-generated insight to inform negotiations with major vendors. According to the firm's senior IT executive, its SAM processes include

C-Suite Takeaway
Key Benefits of SAM

- Better deployment: the right software in the right places
- Greater software efficiency and effectiveness
- Less chance of over- or under-licensing deployment
- Stronger negotiating stance
- More robust risk management and governance practices
- Better scenario planning and business continuity
- Faster disaster recovery
- A leaner, greener, IT footprint
- Greater optimization of IT spend
- Greater agility in IT

continuously updating a roadmap of current and expected future usage for critical software. In this way, he says, "we have a clear handle on our needs today and going forward."

So equipped, the company is in a stronger position to evaluate service offerings and negotiate price. In one recent case, the company developed a range of usage scenarios including and excluding a key vendor's upgrades and support. "We said, 'here is our roadmap, this is how much it will cost us with your maintenance—and here is the cost if we postpone upgrades and go it alone," he points out. Ultimately, "we were able to negotiate a 40 percent discount in maintenance over our three-year horizon." Given a contract of significant size, the company saved a few million dollars, "more than enough to cover our salaries and expenses for several years," notes the executive.

Smarter SAM can also lead to systemically lower software costs. At the global bank, for example, the company uses standardized tools wherever possible. This might include "sets of basic software tools for a Unix, Windows or other server or mainframe environment," says the executive. Such standardization, "means that any applications that are developed anywhere can be run globally, which improves compatibility and efficiency and reduces costs."

Enhanced licensing compliance

Another key benefit of SAM—as noted in the sub-heading —is that it can be used to achieve higher degrees of licensing compliance. But the value of SAM is not necessarily about writing fewer checks for over-deployment. Rather, says Brian Bogardus, an advisory partner at KPMG in Australia, "in terms of risk management and governance perspectives, that's where SAM is invaluable." How great are the risks? "That depends," says Bogardus, "on how well you've been keeping up with your licenses." And, in his experience, "very few firms actually have a good handle on their licensing," meaning findings in favor of publishers are often significant.

Companies tend to overestimate their ability to track licensing compliance. For example, "we'll do an audit for a publisher and the company we're visiting will have purchased software to track their licenses," says Bogardus. "And they'll be very confident in telling us they know what they're running where, and that they're in compliance." But invariably, Bogardus and his team find significant differences between what SAM tools report and actual software deployed. It's not unusual, he says, "for a customer at the end of an audit to be in a position where they have to write a big check for under-compliance. That's neither good risk management nor good governance."

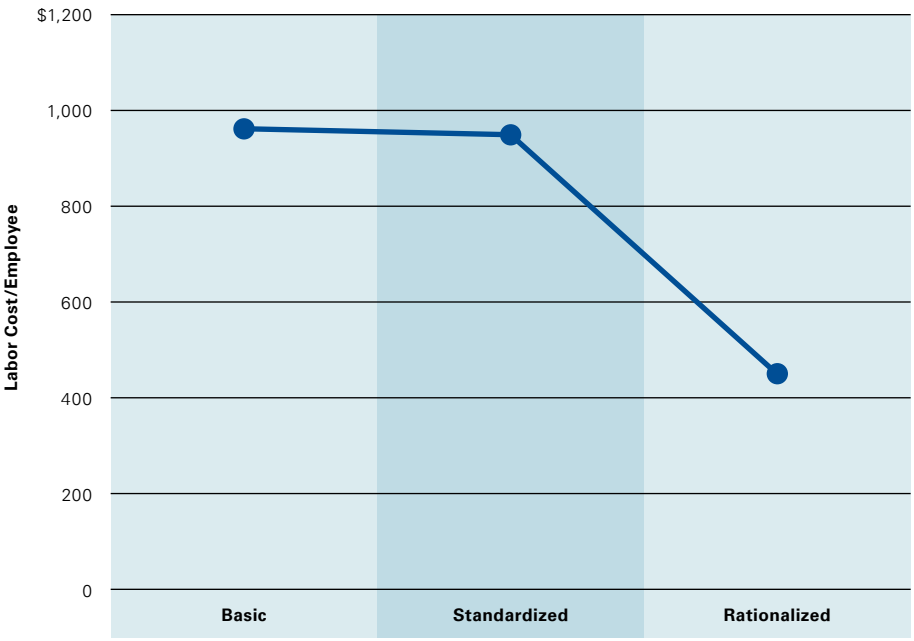
A major software publisher's senior manager for licensing compliance offers similar views. "Customers, in our minds, are incapable of committing software piracy—they're customers." Nonetheless, he says, "there's an awful lot of software that gets placed into use without being paid for, inadvertently." In this regard, "an audit is a hard thing for us too, but companies have to realize, it's our fiduciary responsibility to make sure (the company) is being compensated for the value of its intellectual property."

Clearer understanding of needs, usage and effectiveness

An area of obvious benefit is in terms of optimizing deployment. According to an IT executive from a major international energy company, the ability to monitor software usage can generate not only savings, but also efficiency gains. Say, for example, "we 'light up' some specialized, high-value engineering software for a particular set of users." Then, over a course

Mature SAM Enables Cost Reductions

According to a 2008 KPMG study, as organizations gain control by proactively managing their software assets, they can reduce IT labor costs per PC by as much as 50 percent.



See page 23 for a description of each of these steps

of several weeks or months, "we detect that for some it's becoming one of their regular or favorite tools, but others have no interest."

At this point, the executive says, there are two principal possibilities. "One, we're over-licensed—we've bought more seats than we need." But alternatively, the issue could be one of awareness. "Do the people who aren't using the application recognize its value for their work?" In the latter case, because the company is on top of its software usage, "we're able to dial in to those instances where we might need to do some internal promotion or additional user training," the executive notes. And in either case, "because we're getting better at tracking usage, we're making better decisions relating to software assets."

It may also be worth noting that audits often turn up software that may be running, but that IT managers thought had been taken out long ago or that they are totally unaware existed. Because they may be uncertain of why the software is there or who might be using it, IT managers are often reluctant to de-install. If this sounds familiar, it may be a telltale sign of a software estate that is not under sound control.

Better lifecycle management

Competence in SAM can create advantages along virtually all phases of the software lifecycle. "SAM is key to configuration management," explains Brill, "which later on, is key to technical and end-user support." For example, "the help desk can be a lot more efficient and effective if they know just exactly what's running on the users' machines." Similarly, says Brill, "if there's a system failure, the disaster recovery will be faster because the IT group will already know what was on the servers."

Enhanced risk management and governance

If a company doesn't know what software it's running, there is no way to know the risks it is assuming. Data integrity and security, customer privacy and even network vulnerability can all be compromised by the failure to understand and control the software environment.

Sound risk management and governance dictate that a company knows what to do in the event of a disaster. SAM is a powerful if not essential enabler. "You need to know what you have, what you're running. You have to be very clear on not only the hardware but also the software assets." So if one or more servers fail or if there is some greater disaster, "you understand more clearly the implications for specific applications and business processes." SAM is "essential in terms of risk management, governance and business continuity."

Intangible benefits

A sound SAM environment introduces responsiveness, flexibility, improved information flow and a host of related "soft" benefits.

For example, even as software costs are on the rise, so too are overall IT services costs including planning, design, implementation and operating costs. To the extent SAM can provide information to inform and execute the broader strategies in IT asset management, it will be delivering another set of incremental benefits.

This view is echoed by the financial services IT executive. "Because you're seeing your software and IT environment with greater clarity, you begin noticing ways to collect better data for decision making throughout your business." Not only that, "but now you have greater agility in your IT organization." Which means, "you can respond to change—maybe an acquisition or the desire to rapidly implement a new business strategy—much more quickly and capably." Overall, the difference between a pre-SAM and a post-SAM environment, says the executive, "is like night and day."

Why the Indifference?

Given so many benefits, why are so many organizations so out of sorts with regard to SAM?

A variety of factors conspire to give the processes that enable SAM short shrift. First and foremost, there are numerous and persistent misconceptions regarding the goals of SAM. As Michael Beare, senior director at Microsoft, explains, a few executives equate SAM with various other initiatives intended to police intellectual property and copyrights. "There's a suspicion," says Beare, "that this is in the interest of the software development community and not the end-users."

KPMG's Ron Brill concurs. The perception, he says, is one of "why should we as end users invest in systems and processes to make sure software publishers are getting paid?"

It is true that SAM can make life easier for software publishers. Greater competency among customers can lead to fewer licensing infractions. But at the same time, says a sales manager for a major software vendor, "the most sophisticated customers we have are also the toughest negotiators." To the sales manager's mind, "this could be a case of we should be careful what we wish for."

As for the situation today, says Brill, "The publishers feel they're being more than fair." For example, publishers "bear the costs of (deployment) audits." Still, most publishers believe "that if customers would do their job correctly, there would be no need for such enforcement."

However, as the IT executive from the energy company explains, "in an economic sense, any initiatives that remove costs and uncertainty from a value chain can in principle benefit all members." So to the extent that "software makers are able to worry less about audits and under-compliance, that can reduce costs overall."

Yet another fundamental constraint is a lack of resources. According to the oil company's IT compliance director, there are many other areas such as tax or environmental operations, where the costs of non-compliance may be far greater. So, according to the director, "if your focus is strictly on software compliance, certainly, there are many areas where the risks are more severe." Consider a typical software audit. In the event there is a significant finding against the end-user, the software maker will usually seek the list price and some past maintenance and support costs—only rarely are penalties and audit costs sought. Normally, "the payment is negotiated downwards." As KPMG's Bogardus explains, "no software provider wants to be at war with the customer." Nonetheless, he says, "the findings and the settlement in a software compliance audit can be quite substantial. Multi-million dollar payments are not unusual. If your processes aren't effective, this is a very significant risk."

Moreover, the oil company's IT compliance director notes, "what is the consequence of non-compliance in terms of your company's reputation or brand?" In his opinion, "unless the finding is extraordinary, unless the misuse was widespread and intentional, there's not much reputational risk."

Contrast this to compliance failures in other key aspects of a business. "What about a lapse in Sarbanes-Oxley compliance? Or an environmental finding, corruption or anti-trust?" the oil executive adds. "Where you have a limited number of compliance resources, if that's your view of SAM, strictly a compliance exercise, you're less likely to deploy here than elsewhere."

This highlights, says KPMG's Brill, "the importance of understanding that SAM is about much more than compliance."

Yet another barrier to effective implementation is the belief that SAM can be achieved with a simple software application. According to Heal, "people believe they can buy something off-the-shelf that can catalog all of the software residing on servers and desktops and that in this way, achieve SAM." But in reality, says Heal, there is no single tool, and in fact, even if companies were running a handful of tools, the efforts would still fall short of perfect detection. Overall, says Heal, "without a comprehensive approach that involves not only tools but also a shift in processes and in fact a real culture change," companies will never achieve "even a fraction" of the attainable benefits.

The publishers respond

According to Beare from Microsoft, "more and more, the industry is realizing this is a shared responsibility." But for now, some end-users believe there's much more that publishers can and should be doing. According to the global bank IT executive, "what would really be helpful is if the software industry could come together on a set of standards." Tags that can identify software are a start. But from there, instead of each software publisher selling its own tool for tracking its own software, "create one, software-agnostic tool that can track anything," says the executive.

Still, there is only so much the software publishers can do. A key problem, explains Tim McCrimmon, a program director and product manager for IBM's Tivoli line of SAM tools, is the lack of transparency in permissions. "Discovering the software on a system isn't the challenge," says McCrimmon. Instead, "the challenge is finding the data backing up that licensing—the metadata necessary to see if you're using that according to your terms." Such information, adds McCrimmon, is usually incomplete at best.

Meanwhile, Jonathan Holmes, worldwide compliance at Hewlett Packard (HP), adds that the complexity of the issues doesn't lead to simple solutions. HP, for example, offers wares from four divisions. From there, each division sells dozens of products, with each set sold on different terms to different customer sets. In addition, the various software products use differing key sets. "It's challenging enough for us to manage our own software licensing," says Holmes. "I cannot imagine trying to do something like this across all software lines."

Audits can act as a catalyst for end users. Certainly the audits generate revenue for publishers, but the consensus is that if end-users did a better job of controlling their software assets, there would be no need for the accompanying expense and anxiety. Moreover, publishers say their help is often shunned. As a major software publisher's senior manager for licensing compliance explains, "customers don't want to come out and ask for help because they feel it signals, 'hey, look here, we're underlicensed'."

Impediments to SAM

Even where companies can move beyond the realities of scarce resources, misguided faith in off-the-shelf fixes or a lack of belief in the fundamental SAM value proposition, a number of additional factors hamper effective implementation. According to David Eastwood, the global leader of KPMG's IP and Contract Governance practice, "this isn't easy—or else everyone would already be doing it."

Some of these process challenges include:

The cultural challenges

Protecting intellectual property is not necessarily part of an IT department's priority set. As Bogardus explains, "IT executives love software. They can't wait to get it out of the case to see what it can do. They're more focused on improving their IT environment and keeping things running" as opposed to any dealing with intellectual property liability.

Companies need to devote considerable resources to education. The degree of effort required may vary depending on prior habits as well as location. According to Bogardus, most people understand and accept the basic premise of SAM almost immediately. But in some companies or regions, "it's just accepted practice that you can copy software." In particular, says Bogardus, corporate outposts in "the BRIC countries, Eastern Europe, developing Asia or Latin America may need additional attention."

Complex licensing rules

According to the oil company's IT compliance executive, "every software maker seems to have its own team of lawyers drafting the most complicated documents imaginable." Certainly, the licensing arena is complex. But, notes Microsoft's Beare, "that's an unavoidable consequence of having updated options. Technology changes fast, our customer environments change fast and yet we should be compensated for the value we're creating." Bottom line, says Beare: "Microsoft has made significant strides over the past few years in balancing customer choice with flexibility, including simplifying agreements and reducing the number of programs."

The truth is, says Eastwood, "vendors use licensing offers to segment their markets and create value propositions that appeal to different levels of scale and types of usage." Where this leads is to an arcane assortment of potential usage metrics. "There are per-user licenses, per-CPU licenses—or licenses based on the total number of potential users or the total number of concurrent users."

Still other licenses are hardware dependent. "If you put it on this size and style of box you pay X," says Eastwood, "but if it's one of these, you pay Y." Moreover, the reality can be one of different vendors in the same space using the same terms to describe different circumstances—or different terms to describe identical circumstances. Add to this the variances in the means of billing for upgrades, maintenance or disaster recovery clauses.

This lack of standardization, says Eastwood, greatly hampers "apples-to-apples" pricing comparisons. The net result is that companies are left to wade through an array of detailed proposals and contracts. The complexity is such that even the software providers are not always clear on how their agreements are structured. As the global financial services firm's senior IT executive notes, "we had a case where (the vendor's) technical sales rep gave us

C-Suite Takeaway
SAM's Challenges

- Arcane, vague, and ever-changing pricing rules
- Complex software licensing agreements
- A lack of standard definitions among vendors
- Lack of complete and accurate entitlement data
- Growing use of outsourcing
- Complex fulfillment channels through multiple business partners
- Publisher and end-user M&A
- Lack of executive sponsorship
- The emergence of multi-core servers and virtualization
- The emergence of cloud computing models such as software as a service (SaaS)

the wrong information." After some initial confusion, "we had to get their licensing people to explain to their technical side how the agreement was structured."

But it is precisely for these reasons, says Eastwood, that the pursuit of a SAM environment becomes so valuable. "You can't negotiate what you can't understand. And you can't make good comparisons if you can't plot your own current and future usage." To the extent companies can improve their capabilities in SAM, he adds, "they'll be better equipped to make choices and decisions—and they'll be stronger in negotiation."

Disjointed procurement/deployment processes

Lawyers write the licensing agreements and are judged on enforceability and inherent protections. Purchasing managers negotiate the contracts and are evaluated based on historical costs or the ability to achieve volume discounts. IT executives install the software and make sure everything works and the servers don't crash. In many companies, these three groups neither interact closely with each other, nor do they share common objectives.

'There's just too much disconnect between the people who write the contracts, negotiate the software purchase and those who run it," says Bogardus. A procurement executive might believe he or she has done a good job if a 20 percent volume discount can be negotiated. "But what if you're purchasing 40 percent more software than you actually need?" Meanwhile, an IT executive "is most concerned with keeping the users happy and the system running." In the shuffle, he adds, "the focus on overall efficiency and effectiveness gets lost."

Inadequate historical licensing data

Another impediment to SAM is the difficulty in tracking software licenses. Many of today's licenses are, in fact, new releases of products acquired 5, 10 or even 15 or more years prior. The question is: how much real knowledge do companies have relating to these software entitlements?

As difficult as this challenge may seem, it is further complicated by issues such as mergers, acquisitions and other consolidations. For example, according to Heal, his team was asked to carry out software licensing due diligence on the acquisition of an investment firm. Initially, the findings showed the firm owed a significant amount to its software providers. But then, Heal says, "we looked further back into the historical record" and this more detailed look showed that the company in fact "had more licenses than recorded in its database and so, in reality, they were already compliant."

Additionally, says Heal, "we conducted some operational reporting on actual and future usage and found the group had been overpaying on its maintenance by about 40 percent—because they were no longer using the software."

Overall, though it may be challenging, the payoff can be significant. In this case, Heal adds," the company went from a negative compliance position to a case where they're instead reducing future contract costs."

Recognize as well that software companies themselves are involved in a complex web of mergers, acquisitions, partnerships, reseller agreements and outsourcing.

Enabling SAM

There is no question that an effective SAM state can be difficult to achieve. But the good news is that its realization can be accomplished in stages. The evolving ISO/IEC standards offer one path towards an improved, but still relatively compliance-focused SAM state. An alternative SAM optimization model, developed together with KPMG as part of a Microsoft-sponsored initiative, provides a roadmap towards a broader, more strategic vision.

This model describes a range of steps:

- Basic SAM—A company manages software on a loose, ad-hoc basis with few, if any, comprehensive policies.
- Standardized SAM—Building on the Basic SAM process, the company uses a SAM discovery tool or data repository, although the information may be not be complete or accurate enough for decision making.
- Rationalized SAM—Assets are fully managed, and the company has put in place policies, procedures and tools integrated into the full IT asset lifecycle.
- Dynamic SAM—Assets are optimized, with near real-time alignment with changing business needs. The business is able to use SAM to secure a competitive advantage.

Clearly, the ad hoc approach presents numerous risks, adds to costs and is likely unsustainable. Nonetheless, how far and how fast each company progresses along the continuum may depend on their current state as well as on the unique elements of their business model. For most companies, the pursuit of SAM will be an evolutionary, not revolutionary process.

SAM Optimization Model

Basic SAM	Standardized SAM	Rationalized SAM	Dynamic SAM
Ad Hoc	**Tracking Assets**	**Active Management**	**Optimized**
Little control over what IT assets are being used and where. Lacks policies, procedures, resources, and tools.	SAM processes exist as well as tool/data repository. Information may not be complete and accurate and typically not used for decision making.	Vision, policies, procedures, and tools are used to manage IT software asset life cycle. Reliable information used to manage the assets to business targets.	Near real-time alignment with changing business needs. SAM is a strategic asset to overall business objectives.
Basic	**Standarized**	**Rationalized**	**Dynamic**

Source: Microsoft Corporation

Leading Practices

While the above model provides a useful roadmap, companies may still need to translate these ideas into practical attributes and actions. In this regard, some of the evolving enablers and best practices include:

Get senior management buy-in

It may sound cliché, "but it's true," says Eastwood. "You're not going to make much progress unless this attracts senior management support." Closely related, adds Heal, "you need to find champions, people interested in taking up the reins."

Assign roles and responsibilities

A key challenge for SAM is bridging the divide between the need for centralized IT control and decentralized freedom to acquire, install and run software. According to KPMG director Nav Bahl, "IT budgets are increasingly migrating into business units, making it increasingly difficult to coordinate software consumption across the organization." Many companies, he says, fail to improve because they haven't figured out "where to put SAM" in the organization. Typically, organizations take a middle of the road approach, for example, simply implementing a software discovery tool, only to see SAM wither and fail. "My advice," says Bahl, "is to get the governance structure right—assign clear roles and responsibilities."

C-Suite Takeaway
Beginning the Journey

- Start at the top: gain senior management buy-in
- Assign clear roles and responsibilities
- Create multi-disciplinary teams (IT, legal, procurement, finance, etc.)
- Take inventory—map the software footprint
- Engage with publishers
- Look closely at external software (customers, partners, suppliers, service providers)

Culture Change in the Developing World

As emerging markets become more important in companies' global expansion plans, new SAM issues can quickly emerge.

According to KPMG in China's Danny Le, the degree of software licensing compliance in the emerging markets "is very low." Software audits in China, he explains, "tend to uncover significant findings." Basically, says Le, "many companies are not set up to handle intellectual property. That applies to IP that is created by them as well as IP used by them."

Similar cases and attitudes still exist in India, Brazil, Russia as well as much of Eastern Europe, Latin America and emerging Asia, he adds.

But matters are changing. For example, Arpinder Singh, Executive Director of Advisory at KPMG in India, says that "companies throughout India are beginning to understand." One of the key drivers is "large advertising campaigns from the big software firms as to the value of genuine software." Another is the prevalence of outsourced back office and other processes to India. Here, says Singh, "the pressure is growing for the outsourcers because their customers are starting to inquire about software compliance."

So companies who respect intellectual property and who care about their corporate reputations, "have been investing additional effort to achieve strong controls over SAM in China and similar emerging markets," says Le. In any subsidiary, branch, joint venture or other presence in such markets, "you need to spend additional time and resources to share with the local team why there is value in investing in controls and efficiencies." Then in addition, "you need to implement these basic controls to gain the efficiencies."

Change the culture

Proper use and management of software needs to be ingrained in the corporate culture. This is not simply a matter of dealing with employees who download their own applications onto their PCs. Rather, the greatest cultural hurdle is that many businesses have yet to recognize the need to take control of the process and begin more active management of their software assets.

At the same time, companies in certain regions need to understand and comply with intellectual property rules. "It is very easy to copy software," says Danny Le, an advisory partner at KPMG in China. Consequently, SAM cannot take root "until you change the culture to understand that software, even though it is easily copied, is no different from any other product or service. Therefore it needs to be paid for."

Gain control of the environment

An important step in the drive to SAM is controlling the deployment of software. The easiest way to roll out a new server is often to copy an existing software image that's known to be effective. But infrastructure teams all too often forget they need to acquire additional licenses for the extra deployments. Servers can run high-ticket software, and can be used to deploy, inadvertently, hundreds or even thousands of unlicensed copies. So gaining control of what gets placed on servers becomes a critical step in the road to SAM.

It will also be important to do more to police individual users. As the major oil company's compliance director explains, "PCs and laptops can be locked down; people then know that if they need software, they have to obtain it from the IT department." Of course, any sophisticated user can overcome most installation barriers, but "we can't prevent such intentional acts," the executive says.

Use appropriate delivery

For high cost-per-user software, such as sophisticated modeling, design or scientific packages, "it is important to package it such that when it is run, it asks for a license key," says the oil company IT compliance director. Such keys are held centrally "so that deployment cannot exceed license entitlement. Moreover, the actual usage can be tracked."

Less costly per-user software or packages acquired under broader licenses can be more readily accessed. Still, he says, "it's better to have one copy on the host, not many copies."

Essentially, the oil executive recommends two primary means of control. For high-value or mission-critical software, "you need very close control." Then for the "long tails" of lower value, more commonly deployed packages, "you rely on process control." That is, "you rely more on the business culture you create and processes to ensure compliance."

Implement the right tools

Process and culture is critical, but organizations also need to implement a host of technologies to enable the SAM state. In addition to software discovery tools—programs that identify software on servers or discrete PCs/laptops—firms can also use software metering (to track usage), controlled access, patch management and software deployment applications. Still, executives need to recognize the limitations of such tools. For example, "a discovery tool will

only get you so far," says Bogardus. Real detection "requires creativity, persistence and a forensic mindset."

Create multidisciplinary teams

Software procurement involves a host of disciplines including legal, procurement, IT and finance. The achievement of SAM, says Brill, "requires participants to go through an education campaign." Each must understand the other's needs and objectives and begin using common terminology. In this way, a company can achieve a better outcome overall.

Engage with publishers

SAM is not an "us versus them" framework but rather a roadmap toward greater understanding and visibility between software publishers and end-users. Certainly, compliance audits are a means of protecting the interests of a software publisher. But at the same time, end-users should recognize that they too must live up to their obligations. In the end, companies should embrace publisher-funded activities and resources such as compliance audits as a means of improving SAM processes. In this way, end-users can better understand the challenges facing publishers and publishers the challenges facing end-users. The way forward is collaborative, not combative.

Recognize, however, that as SAM becomes more sophisticated, it will have an impact on software markets. If SAM in fact generates significant cost savings through tougher negotiations and more controlled purchasing for end-users, publishers may react by adjusting their pricing to recover declining revenues. But here again, by running a sophisticated SAM environment, end-users will be able to detect such moves sooner and more clearly—placing them in a better position to respond. Without SAM, end-users are flying blind. With SAM, the marketplace realities can be more apparent.

Review external deployments

Understanding internal usage isn't enough. To be truly effective, SAM must also evaluate software as it relates to the entire value chain, including partners and service providers. Such a review, says KPMG's Eastwood, can uncover lapses that can range from minor to critical. For example, "the software may not be properly licensed, but, it is still provided to others in the value chain—including customers, partners or suppliers." In addition to creating a licensing compliance issue, such failures can also disrupt such relationships. Or in other cases, says Brill, "we have seen software assets sometimes leak from a company into the hands of their employees, partners or service providers." Companies may even be purchasing software for various tasks when in fact such provision should be the responsibility of a business partner or vendor. In general, says Brill, "effective SAM means you have control of software usage in all its forms, both internal and external."

Have an eye on the end game

Initially it was hardware asset management. Now comes software asset management, the opportunity to optimize total cost of ownership for the whole of the IT footprint. But down the road, greater insight into IT deployment and usage will lead to more and deeper business insights across the whole of the enterprise. As IBM's McCrimmon explains, "SAM will lead to better decisions about the value and role of IT in a business. You'll have clearer insight and you'll be able to leverage technology more effectively."

Emerging Issues in SAM

Organizations hoping to move closer to an advanced state of SAM have at least three additional challenges to consider. Fast-emerging issues include:

Advances in technology

Software is often priced based on the hardware on which it resides and/or the associated connectivity. But with advancements such as multi-core servers and virtualization, a single server can suddenly emulate five, ten or even dozens of servers. According to Brill, "the issue with virtualization is that the end-user expects to pay for a subset of the physical CPUs only." The challenge from the publisher standpoint, he explains, "is that these configurations can easily change and often change dynamically. These conditions, says Brill, "effectively pull the rug out from under CPU-based licensing models—which are the most widely used today."

But end-users wonder which counts for more—the spirit or the letter of the agreement? As the financial services executive explains, "just because it's available to a larger universe of users doesn't mean they're using it." Advancing technology "is indeed a challenge," says the executive, "but software makers need to be reasonable." Bottom line, software publishers and end-users alike will need to become clearer on how fast-evolving delivery technologies impacts potential access and pricing.

Cloud computing

Bit by bit, more companies are outsourcing greater swaths of their IT footprint. Software being used by one organization will often, in fact, be hosted by a second organization. As infrastructure models such as cloud computing including SaaS take hold, companies need to take added steps to ensure compliance. In fact, according to Microsoft's Beare, executives need to realize "that even if it's not hosted on your servers, if you're using it, you're still responsible for confirming the proper licensing." Fortunately, says Beare, managing this risk is relatively straightforward: "Just make sure that the full solution including any licensing of software rights is included in the invoiced price."

Of course, other issues remain. For example, asks Bahl, "what about when clients retain infrastructures alongside outsourced arrangements? Who owns the licenses then—or can the licenses be transferred between environments?" The answers, says Bahl, "are not always immediately clear."

Software tagging

Pressure is building for software makers to develop standards for tagging their wares—so they'll be easier to identify. But there are challenges. In particular, notes Heal, "what is going to be the incentive for publishers to go back and tag their legacy products?" There will still be a lot of software "that isn't tagged." So while tagging may at some point become helpful, even if such initiatives succeed, "it will take some time to become truly useful."

Conclusion

As more companies begin to realize the value of their software assets—and that this value is being compromised by failing to actively manage these assets—undoubtedly, SAM adoption will grow. It will not be long in fact before companies with limited SAM capabilities will become the exception.

SAM is not the pursuit of software license compliance. While higher degrees of software license compliance undoubtedly flow from an effective SAM implementation, this is almost a by-product of the effort. Similarly, SAM cannot be achieved solely by the implementation of a software tool, no matter how sophisticated that product might be.

Instead, SAM is a disciplined approach to understanding software needs and the ways in which software can contribute to the efficiency and effectiveness of the organization. SAM may require a fundamental cultural shift, essentially hard wiring the value of software to broader business objectives and future planning. But by understanding the role, pricing and deployment of software, SAM can lead to lower costs, reduced risks and an overall greater return on this technology investment.

Overall, SAM represents a more proactive approach to the management of a vital strategic asset. The ability to harness the power of software is becoming a key differentiator. Those companies that can do so most efficiently and effectively soonest will gain significant competitive advantage.

KPMG Can Help

The pace of technology innovation continues to present new challenges for organizations managing software assets throughout their life cycles, and SAM will continue to be a critical part of a successful information technology strategy. As a professional services firm with access to an extensive international network, KPMG understands how much organizations struggle with software asset management and can help them address those challenges.

Our Advisory practice provides a wide array of services related to software asset management and software license compliance. We have helped leading global corporations (including several of the Fortune 50) to address challenges related to SAM with a view toward reducing compliance exposure, optimizing costs, and achieving overall IT maturity.

KPMG has more than 137,000 professionals in KPMG member firms in 144 countries, located in or near the cities where our clients operate. This proximity means that KPMG's professionals know local laws, customs, and business practices so they can effectively provide SAM services, help our clients optimize cost and achieve compliance with license agreements, and recommend practices that can help achieve higher levels of SAM going forward.

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Is unlicensed software usage hurting your bottom line?

Software Asset Management—a key to infrastructure optimization

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