1 Executive summary

What does Software Asset Management (SAM) actually mean? Is it merely adhering to the rules set forth by legal regulations and licence contracts, and a means of reducing IT costs? Or can we achieve more significant results by managing the software used by our organisation more efficiently and implementing better controls?

According to a survey recently conducted by market research and consulting firm Gartner, more than half of organisations were subject to licence reviews by at least one software manufacturer in the last year. The figure for Europe exceeds 60%, and it is climbing relentlessly in Hungary too, a fact substantiated by KPMG in Hungary’s experience in 2010 and 2011. In addition to licence agreements that protect the intellectual property rights of software suppliers, the Act on Copyright also governs the licensed use of software programmes. Alongside the licence audits by software publishers, various authorities can also conduct their own audits of software for compliance with licence contracts as well as the law. Besides the legal and financial consequences of penalties and in certain cases the adverse impacts on the reputation of organisations, what can motivate companies to develop more effective software asset management?

SAM is a comprehensive approach that affects business operations as a whole; it helps to lower information technology costs, reduce any legal risks associated with software usage, and increase the efficiency of IT and users.

SAM plays a critical role in the management of the IT environment since if an organisation is not aware of what software assets it has, where they can be found and how they are configured, as well as who they are being used by and how, this can have a serious impact on the effectiveness of business operations. The implementation and operation of countless IT processes – including configuration or change management for example – depend strongly on whether the organisation has precise information on the software assets it uses.

In addition, the speed of innovation and technological developments also represent a major challenge for efficient software asset management; it suffices to think just of the rapid development of hardware technologies, multiple core CPUs, or the rampant spread of virtualisation technologies. Virtualisation probably affects the achievement of effective software asset management far more than the other challenges, since changing the traditional link between hardware and software it creates configurations that are subject to dynamic change; managing these configurations is an extremely complicated task from the perspective of SAM and software licence compliance.

Licence compliance is undeniably one of the main factors of SAM. A mature and well-conceived software asset management strategy helps us to gain the most from our licence agreement conditions, as the related costs constitute an increasing part of IT budgets. Having accurate information on licence conditions is not only useful during licence audits but also when we want to decide exactly which software and how many licences we need with a view to providing effective support to business functions and the targeted profitability.

In this guide you can find out how to ensure efficient software asset management, what benefits this provides, what risks you can manage as a result and how you can significantly reduce your information technology costs.

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1 Gartner polls & surveys show an increase in software license audits”, 31 July 2009

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2 What is SAM?

Efficient software asset management influences the quality of IT services, and therefore business success as well to a large extent. The definition of software asset management provided by most renowned and comprehensive set of guidelines for IT services management, ITIL (see footnote 2) is as follows:

“All of the infrastructure and processes necessary for the effective management, control and protection of the software assets within an organisation throughout all stages of their lifecycle.”

3 SAM in the spotlight: risks and challenges

Besides the definitions, standards and the theory let us take a look at software asset management from a more practical perspective: what risks does SAM manage and what difficulties will we face when establishing the system?

3.1 Alarming facts

Some astonishing facts drawn from KPMG’s experience in 2010 and 2011 in its work in Hungary:

- 70% of companies reviewed have no updated hardware and software inventory.
- Eight out of 10 companies do not actually know who is using their software.
- Only around 10% of the companies surveyed have an employee responsible for SAM.

In addition, according to the Gartner survey there is a roughly 30% discrepancy between the licences purchased and the software actually used.

If we add to this the fact that the number of software licence audits initiated by software manufacturers is steadily rising, then it is obvious we cannot sweep the SAM issue under the carpet.

3.2 Risks managed by SAM

Organisations using software are faced with numerous risks which they can manage with the help of a properly designed SAM approach. Everyone is clear on the fact that SAM helps to avoid violating licence rules, but additionally it is capable of managing many other risks that at first glance do not seem so obvious:

- Software installed without a licence not only violates licence regulations as well as copyrights and in certain cases other laws, but it can also cause incompatibility issues in IT and in more serious cases even bring systems down.
- The ordering, purchasing, installing and use of software programmes as well as the payment of licence fees tends to be carried out by different departments, and therefore lack of communication can result in software being installed – even for test purposes – which is not covered by purchased and paid-for licences.
- For lack of centralised and documented records it often happens that licence contracts and proofs of entitlement are lost, they are not forwarded by the distributor, or they are simply not stored by the right people within the organisation and therefore purchases cannot be optimised. Many do not know that lost proof of entitlement can be replaced in almost every case at a minimal cost.
- Licence rules can also be violated by failing to study or be aware of the often complicated and complex conditions in software licence agreements.
- In addition to software manufacturers, appropriate software use in accordance with licence contracts and legal regulations can also be examined by many authorities in Hungary. Any discrepancies found can have legal and financial consequences along with impacting severely on the company’s reputation and reliability that are so crucial in business life.

The risks listed here can easily be managed with a well-conceived SAM process.

2 ISO/IEC 19770-1 Information technology - Software Asset Management - Part 1: Processes

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3.3 Challenges when establishing an effective SAM system

Why is it difficult to achieve efficient SAM? Is it difficult at all? First of all let us take a look at what challenges need to be faced when designing effective software asset management:

- Countless software products of numerous software suppliers are available in various versions, with different components and in diverse bundles; then we have the complex software licensing and pricing rules, which can be formulated in complex ways and often change. In the absence of proper expertise it is difficult for companies to oversee such a complicated system.
- In many organisations the communication between IT, purchasing, the legal department and the other business departments is inadequate, therefore it is impossible to compare the available licences with the software that is installed and used. In many cases it happens that a given department acquires special software and runs it without the knowledge of IT.
- Senior management is responsible for software from an accounting, tax and even criminal law perspective, but in many cases they still do not control usage properly. On the one hand, no single person is designated as being in charge of software asset management, and so often the various tasks and responsibilities allocated to various people make the situation harder. On the other hand, management at most tends to allocate only human resources to SAM, sacrificing the software support which, although requires a financial investment, tends to be recovered; consequently, accurate and up-to-date inventories that are the cornerstone of SAM cannot always be prepared.
- Decentralisation, organisational changes and international organisations with complex structures only serve to complicate the use of software and their proper handling more.
- Many software products are extremely easy to install, which facilitates the illegal installation of programmes – albeit in good faith – not just by system administrators but also by users.
- Software utilisation is often not measured, thus it is not known whether the use of the given software and the value it creates are commensurate with the licence fee and operating costs.
- Adapting to rapid changes in the business climate requires major effort from IT, and does not necessarily result in optimal use of software.
- Information technology changes and developments, such as virtualisation, software as a service (SaaS) or cloud computing are changing the traditional view we have of software usage.

Have you experienced these challenges as well? These have all been drawn from real-life situations that presented significant challenges for many companies. We believe that the work of software users, software developers and distributors as well as SAM advisers needs to be coordinated for successful SAM, providing a solution to the problems outlined above. Let us take a look at how this can be achieved.
4 Designing SAM in practice

Some organisations have some form of software asset management practice, but this as well as the understanding of IT managers of SAM can be extremely different.

The authoritative standard in this context, ISO/IEC 19770-1 (see footnote 3), along with our experience can help in designing an efficient SAM system; all you need to do is follow the steps briefly laid out below:

4.1 Implementing the SAM control environment

SAM requires a comprehensive and well-regulated control environment, which supports its efficient operation but on a controlled and trackable basis. It is important for SAM to link into the general business management and IT management processes at strategic level. It is also important to ensure links at operational level with relevant IT processes such as configuration management, change management and IT operations, which is why it is useful if SAM is designed as part of a larger framework system, such as ITIL (see footnote 2).

4.1.1 Establishing the SAM corporate governance process

Commitment, support and an undertaking of responsibility from senior management are all required for SAM, which must be set forth in the SAM strategy as well as in related procedures and regulations. The strategy must define the SAM scope, companies and organisational units affected as well as basic rights and authorities. Risks related to the use of software must be assessed (e.g. non-compliance with legal regulations, use of unlicensed software, a greater number of licences or higher operating costs than required, different legal backgrounds in different countries and organisations and different user cultures) and managed.

4.1.2 Responsibilities and competencies related to SAM

SAM-related responsibilities must be clearly defined and assigned to someone who reports and is accountable to senior management, but who also oversees the entire process, who can allocate resources for the implementation and operation of SAM, liaise with software manufacturers and suppliers, and who is familiar with legal and licence conditions and has the required expertise, skills and competences.

4.1.3 Establishing SAM rules

In line with the size of the organisation, policies and procedures must be drawn up to support SAM. The procedures must determine responsibilities, basic SAM processes and their links to IT, change management, purchasing and other business processes. Here in particular we emphasise the importance of change management and software purchasing supporting conscious software asset management; processes should have integrated approval mechanisms to prevent unreasonable and costly purchases being made that run counter to the SAM strategy. They also have to support compliance with legal and licensing conditions, restricting personal use and punishing unauthorised software use. Everyone in the organisation must be aware of the procedures, but the person in charge of SAM must check compliance and adherence to the rules.

4.2 Planning, implementing, reviewing and continuous improvement of SAM

During the design and operation of SAM it is worthwhile applying the tried-and-tested PDCA model, which many companies already use successfully in connection with quality control systems. The essence of the PDCA approach (Plan-Do-Check-Act) is that after careful planning and implementation the designed processes and results need to be checked, measured, and improved.

4.2.1 Planning and implementing SAM

The following must be determined at the planning stage of SAM

- SAM purpose, processes and measurable results of objectives, and the risks SAM is designated to manage
- SAM scope, i.e. which organisations and software assets it applies to
- SAM processes, responsibilities and procedures in light of the objectives
- Resources required for operating SAM and regular activities.

Based on the plans senior management must support the creation of a software asset management framework system, which must be linked to existing processes at the organisation; software support tools must be introduced (such as CMDB⁴, inventory-support tools) and those in charge must be briefed on their tasks.

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⁴ CMDB (Configuration Management DataBase) – Structured records and database containing all the data on the organisation’s IT systems and infrastructure.

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4.2.2 Monitoring and continuous improvement of SAM

Those in charge of SAM regularly have to inform the management on the status of SAM processes and objectives, their efficiency, the results of regular checks and the status of risks managed by SAM, with particular regard to licence compliance. If such revisions reveal any shortcomings then improvement measures must be drawn up and implemented by a reasonable deadline. In addition to this it is worth laying down a rolling SAM strategy which, based on an assessment of the organisation’s current situation and the outlooks and plans for the next 3-5 years, determines a mid-term software asset management plan that can help to ensure economies of scale, optimal usage, the selection of ideal licence schemes and therefore optimised investments and costs as a result.

4.3 Software registration and inventory

4.3.1 Rules for registering software

The primary objective behind recording the data related to software programmes is that the organisation can store all relevant information in a standard and secure manner in one place. Software records should contain the following data:

- Name of licensed software, ID information, version, persons in charge, status and type
- Locations of definitive master versions, distribution copies and installation kits
- Software licence records:
  - Location and expiry of licence documents, agreements and contracts
  - Up-to-date description of licence conditions
- Record of installed software, containing:
  - Name, version and release of software deployed
  - Location of software deployed (with the name of the server, workstation)
  - Aggregate number of software programmes deployed and number of users

Those designated in advance as being in charge must keep accurate and up-to-date software records based on documented and controlled processes to ensure the confidentiality and integrity of the stored data is maintained. It is advisable to introduce a software and licence records programme that is also capable of carrying out automated procedures. At the same time it is also advisable to link software records with hardware records since data from the latter (e.g. type of hardware, platform, environment, CPU type and number) provides useful information to assess licence compliance.

It is advisable to build a database from the information gathered, which can link in to the configuration management database (CMDB) and software accounting records, and can be used during risk assessments related to software and other IT assets as well. We would like to emphasise the significance of consistency between the IT and accounting records for software, which is often neglected by many organisations and thus carries a severe legal and licence compliance risk.

4.3.1.1 Accounting aspects of software record

In accordance with the provisions of the Act on Accounting, as a general rule companies have to carry out inventories to support all assets recognised in the balance sheet. An inventory does not mean a physical count every year; it is sufficient if the quantitative software records are cross-checked with the annual report for the software assets where the customer receives a final licence at the start or end of the given framework. If the given software is used as part of a subscription scheme, or if the choice is made not to buy it at the end of the framework then the software can be accounted for as cost; in this instance there is no need for an accounting record since the software is not capitalised as an asset (however, standard records duly labelled are recommended). Another typical issue is software purchased together with hardware, where the software usage right is linked to the given hardware, and the software must be depreciated parallel to the hardware. Since the accounting aspects of licence agreements often change, an opinion from an expert with due qualifications and competence should always be requested.
4.3.2 Regular controls of software records, inventory processes

To ensure that software records are up-to-date then alongside continual maintenance various control points should be incorporated into SAM processes; reports should be compiled on the results and any shortcomings identified should be corrected.

- Programmes installed without licences should be identified at least every quarter.
- In the case of bulk licence software the number of software programmes used and installed should be compared at least quarterly with the number of user rights.
- Licences should be reviewed at least every six months, identifying those which are unnecessary.
- Every year the impacts of infrastructure changes should be examined, such as server consolidation and virtualisation projects, changes in PC and user numbers.
- Software utilisation should be reviewed annually with the help of system administrators and users (is software actually used, is the given number of deployments necessary, is the software running on appropriate hardware, etc.). Software-related expense should be compared every six months with the IT budget.
- Software purchasing habits should be examined every year to see whether the discounts derived from centralised purchasing are exploited (members of a group can obtain better licence fees with centralised, combined software purchases), whether the company uses the appropriate licence schemes and whether software is bought from the right suppliers.
- Status of measures taken to manage SAM risks should be reviewed every six months.
- Achievement of SAM objectives should be reviewed annually

In addition to regular controls, it must be ensured at process and system level (with settings) that software cannot be installed without the consent of the person in charge of SAM, thus guaranteeing the licence compliance status of the organisation. This is helped by the introduction and active use of software distribution and deployment applications.

Great emphasis must be placed on controlling and surveying the software actually used by the organisation. It can be determined and measured from the log files how often a piece of installed software is launched by users, how long it is used and whether it is in the background or used actively. Taking an appropriate size of sample and by asking users the actual utilisation of the software can be assessed, and also whether the right number of software assets is installed to meet actual demand. This survey can be enhanced with questions like what would happen if a given software could no longer be used, or if a given server was disconnected? Are there alternative solutions (based on business continuity planning and disaster recovery plans for example) and is the damage derived from the downtime comparable with operating and licence costs.
4.4 Other operations management tasks related to software

4.4.1 Management of supplier and customer relations

Software manufacturers and suppliers providing a quality and reliable service on a sustained basis can make a significant contribution to the successful operations of organisations. It is important that the organisation constantly measures and regularly evaluates their performance and the standard of service they provide, and compares them with the service levels (if any) stated in the relevant contract. The contracts must be reviewed at least six months prior to expiry so that IT can make sure the best supplier is in fact being worked with, but at the same time the best contract is being signed.

4.4.2 Financial management of software

As mentioned, managing software records consistently from an IT and accounting perspective is crucial. The value of the software, the investments to facilitate their use (e.g. software licences, hardware, developments, etc.) and incurred costs (e.g. labour, operation, support, maintenance, etc.) must be allocated accurately to the given software, for which information is required from accounting, IT and users. This must then be compared with the planned budget and the value produced by the software so that accurate information can be given to the management for decisions to be made on the usage of software.

4.4.3 Security management of software

The security of software is an extremely complex issue, covering the logical security of applications (e.g. user rights, password management), the separation of functions and tasks, database protection and logging issues, but here we are only focusing on specific areas of software asset management security. The software installation media must be protected from unlawful access as organisations can easily become under-licensed. Illegally downloaded and installed software can have the same result. Access to software records should be on a needs-only basis, as the content and integrity of this data is of crucial importance since it influences both investments and other IT decision-making processes.

4.4.4 SAM links to IT development and operational processes

SAM must become an integral part of IT processes. During the development and purchasing of software it must be assessed what quantity is required, whether the development can be covered with existing or better-priced software, and whether the new software fits in to the IT environment and SAM strategy. During operation great emphasis should be placed on faults with the software and reported incidents – problems with operational security can cause financial damage, which must be taken into account when evaluating the software.

4.5 End of software lifecycle – retirement

The time comes when all software programmes need to be replaced or stopped being used because they are incapable of supporting business operations efficiently, cost-effectively or with the required security. It is important for the organisation to really benefit from the replacement and retirement of the software, so attention must be paid to the expiry of licence and support agreements, the withdrawal from the records and stopping the payment of fees, which again lays emphasis on active communication between IT and finance, but also with purchasing. For lack of active communication between departments it can happen that licences no longer used are ordered again by purchasing, or finance transfers the same amount to the supplier as in the previous year.

4.6 SAM maturity model

Some organisations are at the vanguard of designing and even running efficient software asset management, while others are only just starting to discover the benefits of SAM. The following diagram illustrates the levels we can distinguish between in terms of preparedness and development in accordance with the SAM Maturity Model:

At global level there are few companies with Rationalised or Dynamic SAM, but in Hungary the number of these companies is even lower and well illustrates the early status of software asset management. Most companies do not have any designated person in charge of SAM, the process is not properly regulated, records are not accurate, complete nor up-to-date. This means there is no point in paying attention to keeping licences up to date if, given the lack of clarity surrounding responsibilities and the shortcomings in records, it is not clear how many of which licence is required.
5 Benefits of efficient SAM

Properly designed software asset management operated under appropriate controls provides numerous benefits for organisations both in the private and in the public sector. These benefits can essentially be grouped into the following three categories:

5.1 Cost efficiency and economy

- Centralised licence management enables centralised purchases, which in turn facilitates bulk discounts and makes it easier to plan costs and schedule invoice payments.
- Well-controlled SAM reduces and optimises the repository for and quantity of used software, while workstations can be standardised, thus in addition to licence costs, support and maintenance costs can be lowered too.
- Fewer but more efficiently used software programmes reduce the size of infrastructure required and the number of platforms, which lowers their operating costs too, be it the purchasing and operation of hardware and operating systems, depreciation, maintenance costs, related labour costs, or the smaller office space associated with fewer pieces of hardware, and the lower utility and electricity costs.
- By means of controlled SAM processes and up-to-date records, software audits prove to be less of a burden for companies in terms of labour too, they pass quickly and finish without unforeseen costs or unexpected expenses related to software purchasing.
- Operating costs are also lowered by improving the efficiency of information technology processes, tasks can even be performed with fewer staff, while the optimal software use means that satisfied users report fewer problems to IT.

5.2 Benefits from improved operations

- The introduction of SAM creates accurate, up-to-date and well-structured records, providing a clear picture of the company’s crucial, value-adding assets, and software. With the help of SAM, management can make efficient strategic decisions on IT applications and purchases.
- Well-planned, designed and implemented SAM improves the efficiency of IT processes, communication between organisational units and coordinated work performance.
- Optimal software utilisation increases the satisfaction of users, and provides more efficient support to and acceleration for business processes.
- Software running with fewer errors and more reliably from the perspective of users lowers the number of reported problems and system downtime, which motivates staff.
- Efficient SAM and accurate, up-to-date records facilitate and accelerate negotiations and communication with software suppliers.
- Efficient SAM processes provide effective support and speed up the development of the software pool and the rollout of necessary software, and therefore the company can also react faster to business and market demands.
- Thanks to accurate software and hardware records, software tied to hardware that is part of faulty and rolled-out workstations can also be taken care of in accounting.

5.3 Risk management and ensuring compliance

- Thanks to the accurate and up-to-date records, the scope and number of software assets used and licences available can be determined at any time. This helps to prevent the violation of laws and licence agreements.
- Unauthorised installations resulting in the breach of licence agreements (and even laws) can be prevented with the help of controlled SAM processes, while these can also lead to IT compatibility issues and operational security problems, not to mention system downtime.
- By optimising the scope of software used the risks derived from software vulnerabilities, such as data loss, can be minimised.
- The risk of IT attacks, including malicious codes, viruses and botnet networks, can be reduced by limiting software installations and downloads.

For organisations which attach great importance to operating legally and which would like to reduce costs by means of legally used software and effective IT procedures, a consciously designed and controlled software asset management framework can ensure planning and predictability.
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