Software Asset Management
High Risk, High Reward

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• SAM Trends, Drivers, and Benefits
• Auditing SAM
• Questions
WHAT IS SOFTWARE ASSET MANAGEMENT ("SAM")?
# Software Asset Management ("SAM")

<table>
<thead>
<tr>
<th>Objective</th>
<th>Provide a single, integrated view of installed software in order to allow a one-to-one reconciliation between deployment/usage and purchase/license records.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>SAM is a business practice that involves managing and optimizing the purchase, deployment, maintenance, utilization, and disposal of software assets within an organization. The goals of SAM are to reduce IT costs and limit operational, financial and legal risks related to the ownership and use of software.</td>
</tr>
</tbody>
</table>
Software Asset Management ("SAM")

How does it help?

A broad SAM program helps organizations understand what software they have licensed, deployed, in use, and the deltas between those figures. Further, SAM empowers an organization to better understand the hierarchical ranking of software products from a vendor management perspective, as well as help an organization to make targeted software investments to support their strategic objectives.

Software Asset Tracking versus SAM

Although Asset Tracking and Asset Management are often used synonymously, there is a subtle difference between the two:

- **Asset Tracking**: Deals with the physical characteristics of software in support of planning, deployment, operation, support and service; installation/use data.
- **Asset Management**: Deals with the fiscal (financial and/or contract) details of software as required for financial management, risk management, contract management and vendor management; ownership data.
- Asset tracking is a prerequisite.
Some Key SAM Objectives

SAM involves managing and optimizing the purchase, licensing, deployment, maintenance, utilization, and disposal of software assets within an organization.

The goals of SAM are to optimize IT costs and limit operational, financial, and legal risk related to the ownership and use of software.
Most companies start to think about asset management in response to an audit. There are other elements of risk faced by companies which allow SAM to be introduced in a proactive manner.

**Risk of a Software License Compliance Audit**
- License Compliance Audits are on the rise – Gartner continues to predict an increase in vendor audits
- Software vendors use license compliance audits to decrease squeeze on margins
- Software industry alliance “bounties”

**Limit legal risk**
- Properly implementing SAM limits legal and financial exposure should problems with software licenses arise
- Select industries have regulatory requirements on SAM

**Cost Optimization**
- Organizations may be over-licensed and paying maintenance costs for software licenses not being used
- Software is a significant component of IT spend

**Control of software assets**
- Monitoring and tracking of software in use is difficult
- No “silver bullet” technology solution
- Diverse and complex software licensing models
- Reallocation of software licenses when hardware is moved or decommissioned

**Organizational governance**
- Getting compliant and staying that way also helps eliminate the potential damage to reputation that could arise from a legal dispute
- Compliance with industry standards

**Security**
- Without the ability to inventory and control software installed and allowed to run on their hardware, organizations make their systems more vulnerable to security threats
- Inventory Open Source software to understand what is in use and what could potentially introduce security risks to the organization
SAM Controls TCO

The total cost of ownership of software assets includes the initial acquisition costs (e.g., license fees, administrative overhead) as well as operational costs (e.g., upgrade, maintenance and support costs). In addition, costs related to termination of end-of-life software must also be taken into account. Through SAM, these costs may be reduced by effectively managing software assets throughout their lifecycle.

**Acquisition**

- **Software License Fees**
  - Fees based on licensing model followed and usage forecasts

- **Administrative Overhead**
  - Overhead for contract negotiation, procurement and delivery of assets

**Operational**

- **Upgrade / Maintenance**
  - Identifying software that requires maintenance/upgrades
  - Costly maintenance of “shelf ware”

- **Software Support**
  - Support fees for software on a per-user or volume basis
  - Help desk costs

- **Administrative Overhead**
  - IT training costs
  - Tracking software usage and licensing compliance
### SAM and ROI

#### Cost Efficiency
- 88% of customers audited have unrealized cost savings averaging over 20% of their annual subscription & maintenance spend.
- A mature SAM program can save 3-5% of your total IT spend.

#### Software Licensing Complexity
- Licensing rules and metrics are constantly changing.
- Emerging technologies (virtualization, cloud, BYOD) make tracking software more challenging.

#### Software Audits on the Rise
- **Gartner 2011 Poll:**
- Top software vendors auditing:
  - IBM, Adobe, MSFT, Oracle, SAP

#### Software is a Material Asset
- Software typically represents 8-10% of a total IT budget.
- Common for an organization to have 50+ software vendors and hundreds of contracts.

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SAM TRENDS, DRIVERS, AND BENEFITS
Software License Compliance Audits on the Rise

Staying in Compliance is a Challenge

- Never get into the “Install” versus “Use” argument with a software vendor
- Some software vendors issue new licensing briefs four times a year and SaaS does not mean you don’t have to worry about SAM
- Virtualization technology used to improve efficiency and scalability can cost you millions of dollars
- Most software have no restrictions on over-deployment
- Who and where your users are logging in from could cost you 3-4x more in software cost
- No refund policy but shelfware support cost is where software companies make their money

Gartner Poll: 35% (2007) to 65% (2011) chance of getting audited

Key software vendors are active in the software audit market

Licensing rules/metrics are constantly changing

Emerging technologies (virtualization, cloud) make tracking software more challenging

Typical organization may have 50+ software vendors and hundreds of contracts
# Cloud Computing and Virtualization Licensing

## Service Type
- Business-as-a-Service
- Software-as-a-Service
- Platform-as-a-Service
- Infrastructure-as-a-Service

## Service Source
- Public cloud (External)
- Hybrid Virtual Private Cloud Community
- Private cloud (Internal)

## Virtualization
- Physical versus Instances
- Virtual environments are dynamic
- Mobility rules are complex
- On premise versus Hosting
- Measuring resource usage
- Most sales people for software vendors don’t truly understand virtualization licensing rules
- Different products from the same software vendor will have different rules

## Cloud
- Regular reviews of license contracts and terms
- Security risks with access, data and shared infrastructure
- Is your organization okay with giving up control
- Self-service pricing model can make tracking difficult
- Unclear service level agreements and terms
Some Key Benefits of SAM

Cost Control
- Lowered legal and compliance-related expenses; including software audits
- Better management of operational costs related to maintaining license compliance
- Return on investment: immediate and long-term financial benefits

Optimization
- Cost optimization: Enables license overpayment recovery
- Facilitates preparations for mergers and acquisitions
- Helps make vendor audits more time and resource-efficient and delivers stronger negotiating position through better management of license-related contracts
- Helps IT leaders make better decisions through the use of better information
- Increased confidence by both internal and external stakeholders
- Promotes more efficient IT systems
Some Key Benefits of SAM

- Reduction of contractual risk – optimize negotiating position with vendors, outsourcers, and potential M&A partners
- Reduction of reputational risk – mitigate potential of adverse media coverage and penalties
- Reduction of financial and budgetary risk – more than 50% of clients polled have been audited by at least one software vendor in the last 12 months
- Reduction of information security risk – inadequately licensed software introduces the possibility that clients may have deployed counterfeit and potentially unauthorized software
Operational Efficiency Benefits from SAM

Organizations can benefit from SAM in the physical, financial and contractual realms. The implementation of an effective SAM program has helped organizations reduce the Total Cost of Ownership (“TCO”) of software assets and minimize security and compliance risks.

<table>
<thead>
<tr>
<th>Physical</th>
<th>Contractual</th>
</tr>
</thead>
<tbody>
<tr>
<td>› Maintain software asset inventory at optimum levels</td>
<td>› Standardize means in which software contracts are written from a volume, service level, maintenance, disaster recovery, etc. perspective</td>
</tr>
<tr>
<td>› Re-harvest and reallocate unused software licenses</td>
<td>› Standardize technology products and purchase licenses in larger numbers</td>
</tr>
<tr>
<td>› Identify software upgrade opportunities</td>
<td>› Reduce duplication of asset management efforts</td>
</tr>
<tr>
<td>› Locate missing IT software assets</td>
<td>› Optimize maintenance terms</td>
</tr>
<tr>
<td>› Forecast future software usage</td>
<td>› Proactively identify license compliance issues</td>
</tr>
</tbody>
</table>

Financial

Software Asset Management
SAM Can Help Prepare for the Future

- Avoid surprises – large audit settlements go to the CEO/CFO
- Save on software spend
- Get a true total cost of ownership (TCO) for systems and applications
- Prepare for and enable the cloud – it is driving usage-based licensing and metric changes
- Adjust for virtualization – Virtual Machines (VMs) per server reaching 10:1 and outnumber physical servers 2:1
- Prepare for and make the software license review efficient – almost every software vendor in the market today has some enforcement or audit program

1 Gartner, Inc. | G00230816 -Software Vendor Auditing Trends: What to Watch for and How to Respond Published: 23 May 2012
AUDITING SAM
# Internal Audit’s Role with SAM

## How Internal Audit can help

- **SAM Process Risk Assessment** – Benchmarking against leading industry practices
- **Software License Baselines** – Comparing software deployments against license entitlements
- **Software Security Risk Assessment** – Analysis of non-essential software and security patch deployment

## Other cost optimization opportunities

- **Software Procurement Optimization**
- **Software Vendor Audit Readiness**
- **Software Contract Negotiation Support**
- **Software Portfolio Rationalization**
- **Strategic Vendor Sourcing**
Deloitte’s Software Asset Management Framework

The Software Asset Management framework was created in conjunction with the ITIL SAM guide, ITAM, and the ISO 19770-1 Standards. This will be used to assess current Software Asset Management competencies across 3 areas – Govern, Manage, Operate – to identify gaps and formulate recommendations for the target state.

1. Govern
   - Defining the scope and objectives and outlining the activities and initiatives necessary to achieve the vision and goals
   - Roles and responsibilities to govern, manage, and execute SAM processes
   - Policies and guidelines defining SAM methodology, standards, and practices

2. Manage
   - Facilitate standardized SAM process including design, management and reporting on software (to enable stakeholders) and driving training & awareness
   - On demand access to software inventory, and internal compliance activities for license compliance reconciliation

3. Operate
   - Evaluation, implementation, and management of SAM tool solutions
   - Integration of the SAM lifecycle - Forecast & Request; Analyze & Procure; Install & Maintain; Monitor & Track; Decommission & Reuse
### An Effective SAM Program

Effective SAM programs exhibit the following characteristics:

#### People
- Executive support and buy-in
- A central, dedicated SAM function with relevant accountabilities (as process owner or process influencer), including license tracking and management
- Functional area accountability, with consequences for non-performance

#### Process
- Standardized, enterprise-wide integrated functions
- Standardized asset lifecycle processes
- Invoice verification (more than Purchase Order validation)
- IT & SAM toolkit: Contract checklists, templates (e.g., business case), procedure/policy manual
- Usage monitoring and analysis to avoid over/under buying
- Product rationalization and replacement strategies

#### Technology
- A central IT asset repository (logical or physical) for IT asset and related data: contract, license, costs/payments, vendor
- Automation of operational tasks (e.g., deployment, discovery) and asset lifecycle workflow
Many organizations are at different stages of maturity in their SAM implementation. In our experience, the majority of organizations are in the Level 2 to Level 3 ranges.

<table>
<thead>
<tr>
<th>Maturity Level</th>
<th>Level of Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chaotic</td>
<td>Minimal process maturity</td>
</tr>
<tr>
<td></td>
<td>Limited knowledge of what assets are owned</td>
</tr>
<tr>
<td></td>
<td>Processes are mature to a reactive state where the focus is on counting assets and involves annual physical inventory</td>
</tr>
<tr>
<td>2. Reactive</td>
<td>Processes are mature to a reactive state where the focus is on counting assets and involves annual physical inventory</td>
</tr>
<tr>
<td></td>
<td>Install, move, add, change (IMAC) processes are not consistently followed</td>
</tr>
<tr>
<td>3. Proactive</td>
<td>Processes are implemented to manage assets throughout the entire lifecycle, they are well defined, adhered to, reviewed and reengineered where necessary</td>
</tr>
<tr>
<td></td>
<td>Metrics are in place to measure value and service levels have been created to meet business or IT goals</td>
</tr>
<tr>
<td>4. Optimizing</td>
<td>Audits conducted to review the efficiency and effectiveness of established business processes across all assets of the enterprise</td>
</tr>
<tr>
<td>5. Transforming</td>
<td>Centralized procurement with integration to IT Asset Management/SAM tools</td>
</tr>
<tr>
<td></td>
<td>Standardized vendors and contracts</td>
</tr>
<tr>
<td></td>
<td>Implementation of three key tools – repository, auto-discovery and software usage – with integration to strategic systems</td>
</tr>
<tr>
<td></td>
<td>Sophisticated reporting, identifying current usage levels</td>
</tr>
</tbody>
</table>

Level of Automation:
- Minimal process maturity
- Limited knowledge of what assets are owned
- Processes are mature to a reactive state where the focus is on counting assets and involves annual physical inventory
- Install, move, add, change (IMAC) processes are not consistently followed
- Little or no data sharing with purchasing and procurement
- Centralized procurement
- Asset repository and auto-discovery tools are integrated with the IT service desk
- Inventory data is linked to financial and contractual data to create a centralized view
- Assets stored in a common repository
- Asset Management system is fully integrated back-end systems
- Reports are run frequently, and opportunities for cost savings identified and communicated
- Implementation of three key tools – repository, auto-discovery and software usage – with integration to strategic systems
- Sophisticated reporting, identifying current usage levels
**Target State – Execution of the Roadmap**

Upon completion of the current state analysis, SAM competencies can be mapped to one of six area to upgrade the current state of each competency. The competencies are grouped across these area given the similarities of risk and the nature of the effort necessary to improve SAM maturity levels.

<table>
<thead>
<tr>
<th>SAM Competency</th>
<th>SAM Strategy and Organizational Structure Development</th>
<th>SAM Responsibilities, Policies, and Procedures Development</th>
<th>SAM Data Accuracy and Completeness</th>
<th>Software Deployment and Entitlement Baseline</th>
<th>SAM Training and Communication</th>
<th>SAM Monitoring and Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAM Vision and Strategy</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roles and Responsibilities</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skills and Competencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>SAM Policies and Procedures</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAM Technologies</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Inventory and Software License Compliance</td>
<td></td>
<td>✓</td>
<td>¥</td>
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<td></td>
<td></td>
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<tr>
<td>Self Assessment and Conformance Auditing</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Operations Management</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software Acquisitions and License Reconciliation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retirement and License Reclamation</td>
<td>✓</td>
<td></td>
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<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
### SAM Maturity Model

Utilizing the SAM Framework, to assess and benchmark processes against the SAM Maturity Model.

#### SAM Maturity Model

The software industry has developed the SAM Maturity Model based on the ISO 19770-1 Standard by:

1) **Prioritizing outcomes:** The ISO 19770-1 outcomes were prioritized and the most critical were selected in each area.

2) **Creating measurable KPIs:** Outcomes were converted to competencies with individual Key Performance Indicators (KPIs) which could be measured.

3) **Adding maturity levels:** The SAM Maturity Model corresponds and is aligned with the Capability Maturity Model Integration (CMMI) approach and has four levels of maturity. Each competency has corresponding metrics for the four maturity levels.

<table>
<thead>
<tr>
<th>ISO 19770-1 Categories</th>
<th>Key Competencies</th>
<th>KPI</th>
<th>Maturity Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select ISO 19770-1 Categories</td>
<td></td>
<td></td>
<td>Initial Ad Hoc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Defined Tracking Assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Managed Active Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Optimizing Optimized Management</td>
</tr>
</tbody>
</table>

- **Initial Ad Hoc**
  - Little control over what IT and software assets are being used and where

- **Defined Tracking Assets**
  - SAM processes exist as well as tools and installation data

- **Managed Active Management**
  - Vision, policies, procedures, and tools are used to manage software asset life cycles. Reliable information is used to manage the assets to business targets

- **Optimizing Optimized Management**
  - Near real-time alignment with changing business needs. SAM is a strategic asset to overall business objectives.
## ISO 19770-1 Aligned to the SAM Maturity Model

<table>
<thead>
<tr>
<th>ISO 19770-1 Categories</th>
<th>Key Competencies</th>
<th>Competency Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control Environment</strong></td>
<td>1. SAM Vision and Strategy</td>
<td>How have SAM objectives been defined and communicated throughout the organization?</td>
</tr>
<tr>
<td></td>
<td>2. Roles and Responsibilities</td>
<td>Has a dedicated SAM manager been defined, and have roles been communicated to other parts of the organization?</td>
</tr>
<tr>
<td></td>
<td>3. Skills and Competencies</td>
<td>Has the organization developed the necessary skills and competencies to execute the SAM program effectively?</td>
</tr>
<tr>
<td></td>
<td>4. SAM Policies and Procedures</td>
<td>Have SAM policies and procedures been documented, implemented, communicated, and reviewed regularly?</td>
</tr>
<tr>
<td><strong>Inventory</strong></td>
<td>5. SAM Technologies</td>
<td>Are appropriate technologies or tools in place and configured to capture necessary information to meet SAM objectives?</td>
</tr>
<tr>
<td></td>
<td>6. Baseline Inventory and Software License Compliance</td>
<td>Can a baseline inventory of software deployment and entitlement be produced on demand to assess software license compliance for specific vendors?</td>
</tr>
<tr>
<td><strong>Verification and Compliance</strong></td>
<td>7. Self-Assessment and Conformance Auditing</td>
<td>Are self-assessments of software license compliance and SAM operational</td>
</tr>
<tr>
<td><strong>Operations Management</strong></td>
<td>8. Operations Management</td>
<td>Is information gathered through SAM processes shared with and utilized by other</td>
</tr>
<tr>
<td><strong>Primary Life Cycle Process Interfaces</strong></td>
<td>9. Software Acquisitions and Licence Reconciliation</td>
<td>Has software acquisition been centralized with request procedures implemented, and reconciliation of licenses to vendor records?</td>
</tr>
<tr>
<td></td>
<td>10. Retirement and License Reclamation</td>
<td>Is a formalized process to decommission hardware assets in place, and does it facilitate tracking of associated licenses for reuse?</td>
</tr>
<tr>
<td>Area</td>
<td>Key Questions</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
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</tr>
</tbody>
</table>
| **Strategy** | - Can assets support new strategic opportunities?  
               - Are the software assets accurately reflected in the financials?  
               - Is there any risk associated with software license compliance? |
| **Processes** | - Are software and contracts managed in a standardized manner throughout the company?  
                  - Are corporate activities performed for the reconciliation of licenses for all third party software installed?  
                  - Are periodic user reviews performed to identify blocked or removed users? |
| **People** | - Are responsibilities defined at corporate level to coordinate management of third party software?  
                 - Is there staff with expertise and knowledge about the licensing methods who perform periodic reviews to ensure compliance with the terms and conditions of use and deployment of third party software?  
                 - Does this staff actively participate in the process of negotiating contracts for software? |
| **Technology** | - Is there any software inventory tool installed in the company?  
                     - Is there an updated inventory of all third party software licenses acquired by the company?  
                     - Is it possible to identify obsolete or unused software so as to reduce the costs associated with its maintenance? |
| **Data** | - Are there complete and updated inventories of all third party software installed in the company?  
                  - Is there consolidated information of all third party software licenses acquired by the company?  
                  - Have the bundles for the free use of software or the product packages included been identified? |
## Key Success Factors in Software Asset Management

<table>
<thead>
<tr>
<th>Area</th>
<th>Key Factors</th>
</tr>
</thead>
</table>
| **Strategy** | - Mitigation of risks associated with inadequate software management: audit, image security  
- Alignment of corporate and technological strategy  
- Exact knowledge of the location, cost, obsolescence… of software assets |
| **Processes** | - Implement corporate processes to manage the software globally in the company  
- Periodic monitoring of the software licenses installed  
- Cost savings associated with user accounts locked or outdated / obsolete software for which there is no need to continue paying maintenance |
| **People** | - Define roles and responsibilities associated with the asset management at all levels, so as to perform activities in a coordinated and centralized way  
- Having staff with knowledge about licensing models and terms and conditions of use and installation of software |
| **Technology** | - Installation or adaptation of tools for the identification of software installed on both user machines and servers, identifying other features that may impact on the licensing model (capacity of the machine, OS version, existence of virtual machines …)  
- Installation of tools that facilitate the management of the licenses reconciliation in a centralized |
| **Data** | - Detailed inventory of the software installed, identifying the owner, license key, custodian  
- Inventory of software license agreements, identifying quantity, type, owner, location of the contract, etc.  
- Details of the software packages, specifying terms and conditions of use and installation of the free versions of products included. |
Industry Standards

Industry standards are being developed to support SAM activities. Current standards in the industry for software asset management include ISO/IEC 19770-1, ISO/IEC 19770-2 and ITIL.

**ISO/IEC 19770-1: SAM Processes**
- Vendor-independent standard for software asset management published in 2006
- Helps to establish a baseline for SAM processes
- Enables the organization to assess its SAM program against a standard that satisfies corporate governance requirements and supports effective IT management.
- Benefits of ISO 19770-1
  - Enables organizations to perform a gap analysis of current state against baseline, resulting in better risk management and cost optimization.
  - Vendor independent framework aligned to ISO/IEC 20000 and ITIL
  - Availability of tools / methodologies based on ISO standards
- The Standard is split into 6 main sections: Control Environment, Planning and Implementation, Inventory, Verification and compliance, Operations Management, and Life Cycle

**ITIL**
- ITIL originated in the United Kingdom in 1989
- Widely accepted approach to IT service management
- Set of preferred practices supported by assessment tools and documents for the implementation of IT service management
- ITIL defines SAM as: "Software Asset Management (SAM) is all of the infrastructure and processes necessary for the effective management, control and protection of the software assets within an organization, throughout all stages of their lifecycle."

**ISO/IEC Standards in Development**
- 19770-0: SAM Overview and Terminology – an overview and marketing document under development
- 19770-3: Software Entitlement Tag – a specification under development for an XML file containing the metadata to manage (sold) entitlements
- 19770-4: Staged SAM – a staged version of 19770-1 under development; may become a revision to 19770-1

**ISO/IEC 19770-2: Software Identification Tag**
- Establishes specifications for tagging software to optimize its identification and management
- A specification for an XML file containing the metadata to manage installed software products
- It does not detail SAM processes required for reconciliation of software entitlements with software identification tags.
Q & A
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