

75% of SAM Projects Fail. Why?

Analysis of the SAM process today.

75% of all Software Asset Management (SAM) projects are over budget and do not meet their business goals, according to a well know IT consultancy. Why is this happening? In this paper we will break down the SAM process and demonstrate where and why so many SAM projects run into major problems that result in low performing and over budget projects.¹

SAM is a Process, but...

You cannot attend a SAM conference anywhere without hearing this phrase many times over. Of course this is true, but left un-said is the fact that today all forward thinking organizations understand the need to automate their processes as much as possible and the SAM process is no exception. Belarc's proposition is that rather than having independent and manual tasks in the SAM process, let's integrate and automate these processes so that SAM can become a repeatable and constantly improving process. This will also allow SAM to make more valuable contributions to the organization as a whole in terms of cyber security and configuration control in addition to IT Asset Management (ITAM) and SAM.

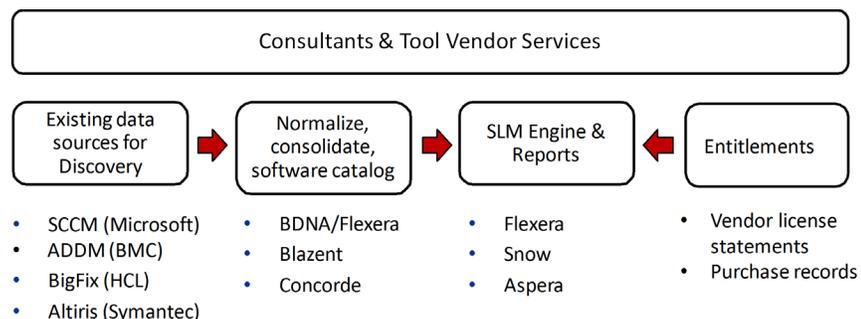
¹ For a video of this topic: <https://youtu.be/fo81TO7362Q>

This is a brief description of the main tasks of a SAM process.² We will discuss how each of these tasks are typically implemented, the reasons why so many SAM projects fail and an approach that will succeed on a repeatable basis.

- **Discovery.** This involves the discovery of two things. First is the installation and usage (they are not the same thing) of software on host systems such as desktops, tablets, mobiles, and physical and virtual servers; and second is the discovery of the entitlements or purchase and rights to this software.
- **Normalization.** This means creating consistent names or identification for the discovery data, both the installed or used data and the entitlement or purchase rights data.
- **License position.** This involves calculating the licenses required based on the installed or usage data and the software publisher’s licensing rules and metrics, and then comparing that to the end-user’s entitlements or purchase rights.
- **License optimization.** This task involves comparing the end-user’s current entitlements and licensing rules to alternative licensing rules and metrics typically from the same publisher and looking for cost advantages. For example comparing Server/CAL licenses to Processor or CPU licenses; comparing renewing a ULA (Unlimited License Agreement) or certifying and going off the ULA. Considering other publisher’s products could also be part of the optimization task.

SAM is a patchwork quilt

This is how SAM projects work today. See Figure 1 below.



² For a more detailed description of software license management and how Belarc’s system can help to automate this, please request our white paper, “Software License Management”.

FIGURE 1. SAM today is a patchwork quilt

Each of the boxes represents a different task in the SAM process, and today these tasks - Discovery, Normalization, License Position - are largely done independently of each other and all require significant manual efforts.

In theory

In theory this is the way its supposed to work. Discovery typically relies on the end-user's existing operations and security tools, such as Microsoft SCCM, BMC ADDM, BigFix, etc. This discovery data is then normalized and consolidated into a useful form by other tools - BDNA, Blazent, Concorde. The license requirements are calculated and compared to the entitlements by the licensing engines such as Flexera, Snow and Aspera.

In reality

But what is actually happening. In reality the necessary discovery data may not be available from the operations or security tools. More on this later. Many SAM tool vendors point out that they have normalization tools that can take data feeds from dozens of operations and security tools. But keep in mind that if the necessary data does not exist in the discovery tool, no amount of "normalization" will help to discover it.

If the data does not exist in the operations or security tool, then your staff or outside contractors will need to create special scripts for these tools to try and discover the necessary configuration data. See Figure 2, below.

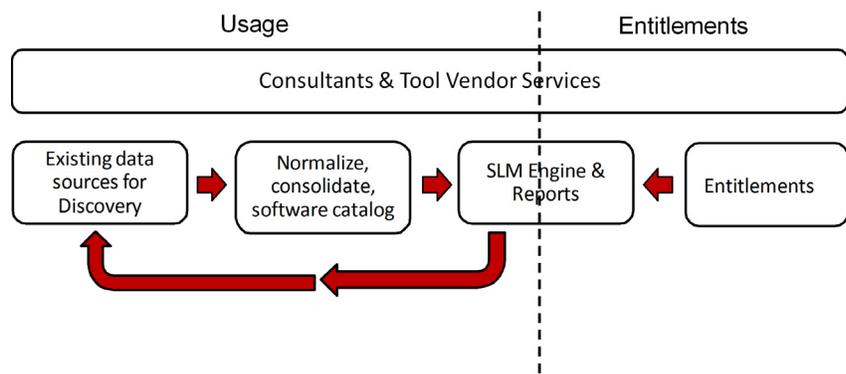


FIGURE 2. Missing discovery data

This process is a continuous manual operation and will require much time, money and manpower, without any guarantee that it will be successful. In

addition these discovery scripts will need to be continuously updated as the software publishers roll out new versions of their products.

Belarc's approach

Belarc uses an integrated and automated system that includes Discovery, Normalization and License Position. This means that the discovery necessary for SAM is automatically done up front, this data is automatically normalized and up to date license position reports are created on a daily basis. See figure 3, below.

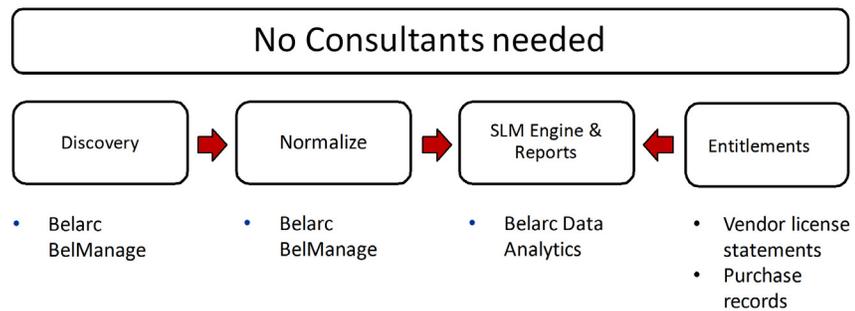


FIGURE 3. Belarc's approach - integrated and automated Discovery, Normalization & License Position

We will show how Belarc's integrated and automated approach to SAM is the best way to insure that your SAM process is successful, delivers on its promises and offers real value to your organization, all in a timely and cost effective manner.

Software Discovery

We have too much discovery data

Most organizations have many "software discovery" tools. By this they mean software discovery as offered by operations and security tools such as Microsoft SCCM, BMC ADDM, BigFix, Altiris, McAfee, Tanium, etc. But is software discovery from the operations and security tools appropriate for SAM purposes or will it require much time and effort to create and continuously run custom scripts.

Here are some things to consider if you are using operations and security tools for SAM discovery.

Do these tools discover the necessary software.

- Product suites such as Microsoft Office, O365, Adobe CC and DC.
- SaaS products such as O365, Adobe, Autodesk.
- Product License Keys.
- Database and middleware software from IBM, Oracle, VMWare.
- Expensive engineering, CAD, BI, GIS software from publishers such as ESRI, Tableau, Qlik, Autodesk, SolidWorks.

Do they discover software usage.

- This is necessary for harvesting of extra cost products such as Microsoft Project and Visio.
- Oracle Database Options and Management Packs only require a paid license when they are used, not when they are installed. Since these Options and Packs are often installed by default and they have significant costs associated with them, it is imperative that you be able to automatically measure database usage of these Options and Management Packs. Belarc does this automatically.
- Being able to identify software usage is very helpful for maintenance renewals, cloud migration projects and cyber security.

Do they discover what's needed for server and cloud based applications:

- Virtual guest to host relationships. This is a required metric since most if not all server software is licensed based the physical server and you therefore need to know which virtual machines are running on each physical machine on an on-going basis.
- Relevant hardware data. Most server software licensing is based on the processor make, model, number of CPUs, Cores, whether hyper-threading is turned on, and similar metrics.
- Cloud based applications and associated hardware. Organizations are moving more applications to the cloud - AWS, Azure, Google - and for SAM these also need to be discovered along with their associated hardware allocations.

Do these tools discover all of your IT assets.

- Isolated networks, such as those in process control networks or secured military environments.
- Private cloud hosted desktops and servers.
- Remote users, such as roaming laptops and tablets.

Are these tools automated.

- Or do they require custom scripts to discover the necessary software, usage and hardware data.
- Is the discovery data automatically updated or does it require manual data calls. Old discovery data is a bit like week old fish - no one wants any part of it.

Belarc gives you the necessary discovery data

Belarc's system discovers all of this necessary data, automatically and on a continuous basis. It does not require special scripts and additional manpower. This allows our customers to implement their SAM system rapidly, cost effectively and have access to the data they need to make decisions.

Software Normalization

Software discovery data needs to be normalized in a way that makes it useful for a SAM system. A list of exes or dll is not useful. For SAM purposes you need a list of applications by:

- Publisher
- Product
- Edition
- Version
- Is a license required. Is this instance part of a bundled package that you are already paying for; is it on a backup system.
- Installed on a physical or virtual machine.
- What are the machine details.
- When was the application used.

When you have a list of installed software by these attributes, your SAM tool will be able to automatically create the license requirements and compare them to your entitlements.

If you are normalizing software discovery data from multiple operations and security tools you will have to deal with the following issues manually. See figure 4, below.

- What if the discovery tools do not agree on the installed software. Which one do you believe.

- What if the software signature is not in the catalog. This means that the software will not be seen as installed, even though it actually is installed.

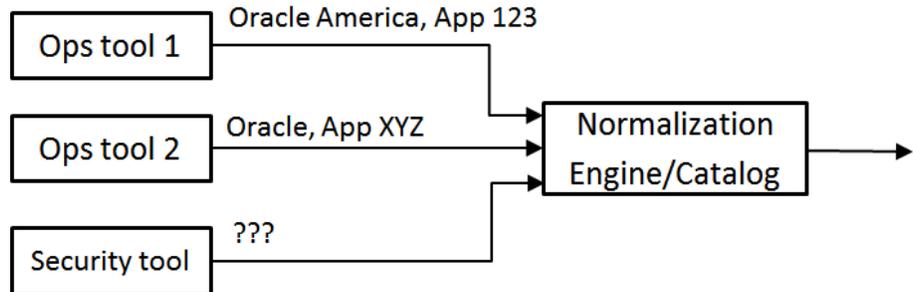


FIGURE 4. Normalizing data from multiple sources

Other issues with normalizing from multiple discovery tools. See figure 5, below.

- What if the discovery tools do not find the application data.
- What if the discovery tools do not find the application usage.

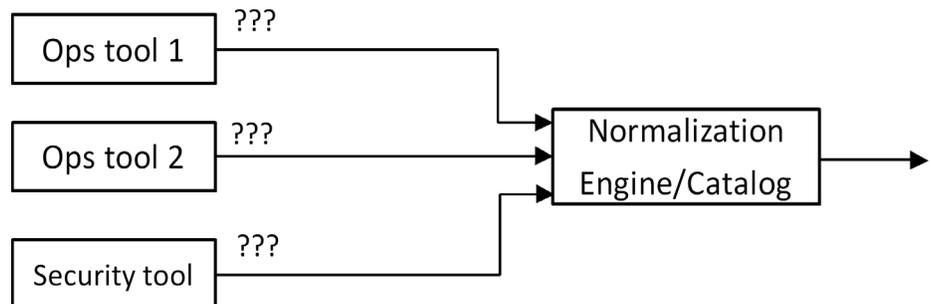


FIGURE 5. Normalizing data from multiple sources

Normalization does not discover software

Normalization is not a solution if the software or usage is not discovered in the first place. This is particularly relevant for difficult to discover software which is not standard with operations and security tools, such as:

- Oracle middleware, Options and Packs.
- IBM middleware and database.
- Expensive CAD, GIS, BI tools such as those from Autodesk, SolidWorks, ESRI, Tableau, Qlik

- Usage for Oracle Options and Management Packs.
- ESRI license types - User, Floating
- Software is discovered but not the required license metrics, i.e. SQL Server license details.

Belarc's Approach

Belarc uses an integrated and automated approach to the SAM tasks of Software Discovery, Normalization and License Position reporting. This means that on a daily basis the discovery data is automatically updated, normalized and the license position reports are created. See figure 6, below.

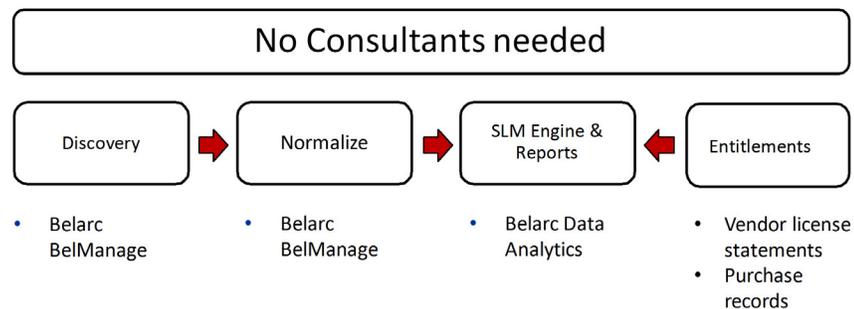


FIGURE 6. Belarc's approach is integrated and automated

By integrating and automating the SAM process tasks, Belarc's system allows for a repeatable process that can benefit from continuous improvements.

How to manage new Virtual Machines

An example is how to manage new virtual machines (VM). Some organizations require that before a new VM is created that operations and database administrators first obtain the approval of the SAM group, so that everyone understands the licensing implications of the new VM. That may seem logical, but in practice this type of approval process will not happen. If a product line manager has a new marketing or product release they are unlikely to want to wait a month or so before the SAM team can determine the license implications of their new offering.

Other organizations spend much time training the operations and database administrators on complex server licensing rules. This is useful, but to rely only on training may be a weakness.

Belarc's believes that training is excellent but should be supported by a system that automatically creates the License Position report for the new VMs and let's all relevant parties see those results. This means that when a new VM is provisioned, all of the responsible parties can immediately see the license impact and allows them to make any required changes.

Continuous license position

Many organizations scramble when they receive a license audit request from a software publisher. They have no idea of their actual license position and sometimes even invite the software publisher to help them determine their license position.³ Belarc's system allows our customers to have continuous effective license position reports so that this information is known at all times and does not come as a surprise. Belarc gives our customers an independent view of their license position and gives them the information they need to look at alternative license metrics.

Some of the benefits of having an automated and integrated SAM system are as follows:

- The software discovery data is accurate, complete and automatically updated on a daily basis so that it can be used to make better decisions.
- The discovery data is automatically normalized so that it is useful for SAM reporting and can be used by others within the organization.
- The licensing reports are accurate because they are continuously updated based on accurate software discovery and the latest entitlement data.
- Software audit requests should not cause the IT group to scramble for data or to feel they need to invite the software publisher to help them with their internal review.
- The SAM group has the data to be able to look at alternative licensing strategies.
- SAM and IT have the data to be able to do accurate planning for operating system migrations or cloud migrations.

³ We have seen organizations use "free" license services from Oracle, IBM and Microsoft to help them determine their license position with these software publishers. The results are unlikely to be in the best interests of the licensee.

- SAM and IT have the data to be able to support cyber security on a continuous basis.⁴

Proof Positive

Belarc's products have been successfully used by over 1,700 customers in over 40 countries, consisting of both small and large enterprises, for over eighteen years. Brief descriptions of how some of our customers are using Belarc's products for SLM are below.

US Federal Aviation Administration (FAA)

The US FAA deployed Belarc in under one month throughout their enterprise on over 57,000 IT assets. Belarc's system allowed the FAA to effectively negotiate a \$tens of millions overage request from IBM. Belarc's system is used in their Microsoft EA true up, including desktop and server software, Oracle database and middleware software, IBM, ESRI (ArcGIS), Tableau, and other high value software agreements. As a by-product of the data Belarc's system collects, it is also being used to track many of the NIST 800-53 security controls, and the Major Applications for the Portfolio Management process.

USAF 844th CG

The USAF 844th CG, covering over 25,000 IT assets at the Pentagon Joint Chiefs of Staff, and Joint Bases Bolling and Andrews, has been using Belarc's system since 2007 for managing their enterprise software license agreements. BelManage was initially used to offer authoritative data for their Microsoft EA license true-up, resulting in a \$2.7 million annual savings on this ELA alone. It was submitted as for a Best Practices Nomination.

Catholic Relief Services (CRS)

CRS is located in 101 countries on five continents, offering humanitarian services. Their BelManage system runs on 5,000 clients often located in very remote areas and updates are sent to their BelManage server when connections are possible. Their BelManage system is used for SAM, configuration control and IT security.

⁴ For more on cyber security and Belarc, please see our white papers: "Ransomware how to stop it" and "Securing the Enterprise".

In Summary

75% of all Software Asset Management (SAM) projects are over budget and do not meet their business goals, according to a well know IT consultancy. In our opinion this is happening because these projects are relying on software discovery data from their operations and security tools. SAM discovery requirements are complex and often unique to each software publisher. The operations and security tools are not designed to discover the metrics required for SAM. This lack of proper data for SAM results in delayed, over budget and un-successful SAM projects.

Belarc's approach is to offer an integrated and automated system that includes software discovery, normalization and license position reporting, all designed for SAM requirements today. This system allows for a repeatable and constantly improving SAM process.

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