

ASSET MANAGEMENT SYSTEMS ANALYSIS

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ABSTRACT

One of the key investments in every organization are the assets. Systems for handling data about assets are valuable investment as well. Being able to have an overview of the assets, information about every detail regarding them and moreover being able to analyze that data can be critical for the business. The subject of this paper is to show the importance of the asset management strategy, point the key role that an asset management system has and list out the desired features. Another important aspect of the paper is to show that Software as a Service (SaaS) business model is best suitable model, especially for small and medium companies. This paper tries to define a methodology for evaluating asset management systems. Some of the existing solutions are being evaluated against it and compared with each other.

I. INTRODUCTION

Assets are a key factor as an investment in every organization these days. With few exceptions most of the companies doesn't look at the assets as a valuable investment in their day to day practice. For most of them the concept of asset management is very narrow and use just some of its basics components. Such an example is keeping some list with all items just to pass some external control. This unnatural usage contradicts the original idea. The idea in asset management is to bring some order in the chaos that is living inside the organization and find out the best future steps. The implementation of asset management strategy should imply with benefits on long stages such as cutting down unnecessary expenses whether it's resource or valuable time, maximizing income of currently existing assets and assisting in the development of further investment plans.

Good news on this topic is the increasing number of various size organizations that became aware about the value of the comprehensive system implementation for asset management that will produce complete, precise and dynamic view over their assets but also it will produce indicators for most efficient further development.

One of the most common questions "What is the right time?" stands up here as well. Probably the best answer is "now". Earlier as the organization adopts this strategy the better it suits all internal processes and avoids any possibility of conflicting with other processes. Having in mind it's critical role in the lifetime of the organization small and medium companies have to adopt it as well. Key point in this discussion is service oriented architecture of asset management system and its SaaS (Software as a Service) nature as the best way to integrate into every company, especially the SaaS in the small size companies.

With the benefits of contemporary technology the organizations have opportunity to organize the assets they own, notice their unnecessary expenses and make most efficient strategy to utilize their current and future investment. Having in mind all of these benefits we put as a strategic goal the implementation of asset management system.

II. MOTIVATION

Organizations with IT asset management strategy are various from multinational corporations to anonymous startups. All those organizations need to put some order in the chaos.

Organizations that implement a good process for efficient asset management reach noticeable savings in their financial reports. According to Gartner its usage can imply with efficient organizing and scheduling of the resources which furthermore can save about 40%-60% of the total IT budget. [3]. Such example show the financial effect of good asset management implementation and that this strategy is critical and deserves attention.

Benefits can be distributed in three general categories like improved efficiency of IT systems, reducing license expenses, reducing of legal and business risks.

Implementing a strategy for asset management means implementing a system for rational spending. Besides implementing a strategy for bookkeeping of asset utilization an additional requirement is executing an analysis over

collected data in order to find out the most appropriate strategy for future utilization.

Improved infrastructure for asset management implies with several benefits. As an example most of the spent time with the helpdesk teams is spent on communication regarding the current configuration of the system. Isn't this a subject of asset management. Shouldn't the system administrator be aware of the configuration of the systems in his domain? Another example is easily querying the workstations configuration against wanted parameters. There is no practical limit of the benefits gained with this kind of system. Time after time it's being exploited on various of ways and is generating valuable data.

The implementation of complete system for asset management helps in overcoming of several financial perspective problems. benefit number one is the possibility of generating efficient dispersion of the current assets through the company and discovering the minimum set of assets that has to be bought. And of course this was the fundamental request of a decent asset management system. It is not enough to know what is there in the organization but how it is being used. The key in this kind of system are the analysis of the received data. with applying of appropriate data analysis tools one can notice the patterns of assets utilization. having in mind such information correct optimizations can be applied on the usage scenarios.

III. OVERVIEW OF THE AVAILABLE SOLUTIONS

A. SAManage

SAManage is an online system for IT Asset management. SAManage offers a detailed overview of the assets in any time from any place over their web application. SaaS (Software as a Service) is the major promoter of this product. The user doesn't have to buy a whole system and make another overhead with it. The system can be used according to the needs and the budget that is available. The one and only requirement is the client application that has to be installed on the computer systems in order to retrieve the required information.

Web application is fairly constructed with an intuitive overview of the assets and an easy way to group and search through the key characteristics like category (server, workstation, laptop), status (available, out of order, being

repaired), operating system, processor or any other tag that has been set. Also we can query and external parameters such as locality, section (where it is being used) etc. Besides the hardware devices, this package can be used for the software that is being used. An interesting feature is that this application has all the changes that occurred in the monitored computers. Besides the fact of being able to observe the hardware and software, it can also be used to manage a variety of contracts, software licenses, subscriptions and leased services and support contracts. Appropriate filters and links to other resources exist for contracts just like for the rest of the assets. In addition to the contracts we can take records of the business partners and the agreements that are concluded. The program offers an easy interface to generate reports according to desired criteria.

B. Express Software Manager

Express Software Manager is a system for managing IT assets such as computers, computer equipment, software tools, licenses and similar helping in making key decisions about the cost of IT assets and also in the process of discovering the potential risks and control what happens within a company network.

The product consists of two applications, an administrative console and the client application. The main product is an administrative console through which we can configure the product to manage IT assets. In an integrated environment we can review and manage software licenses, software products and their corresponding hardware authorizations within the company computer network. One of the main options offered by the application administrator is viewing the computers connected to the network and accordingly whether they have installed the client application.

Client application is another important link in the system which is installed on the computers around the company and is invisible to users. Its task is to control the machine on which it is installed. Such tasks are to submit reports to the system regarding the hardware and applications, monitor applications on the machine and to control actions that are executed on the machine, to report data about the way they are being used and to execute the commands received from the administrative console.

Management of licenses is one of the main features of the package. Express Software Manager application has organized them in appropriate groups of licenses (license

units). The program scans the installed applications and the relevant licenses and compares them with known base for identification of software. All recognized applications are automatically grouped in the respective units. Additional information can also be added manually. With such informations and categorization it is easy to generate reports with useful information about usage of applications. Such an example is what applications are used in a given moment in any of the computer or vice versa for a given application which users use at the moment. Apart from monitoring the usage there can be set some rules. So, for example, may prohibit the use of a particular application. Can also generate reports on hardware and computers that provide detailed information on all components that are installed in a computer system. Another example is that one can obtain information such as how much disk space is free.

Another key feature in the package is the creation of reports. Reports can be created for anything. Reports of units held by certain characteristics, a comparison of usage etc. When generating report user has a variety of filters that are trying to bring the power of sql to the users who do not know sql.

C. Service Now

Service-now.com is so called a pioneer of On Demand IT Service Management. They are combining ITIL v3 guidelines with Web 2.0 technology, and they offer their services with the Software as a Service business model.

The Configuration Management Database (CMDB) is series of tables containing all the assets and business services controlled by a company and their configurations. This includes computers and devices on the network, software contracts and licenses, business services, and more. The IT desk can use the CDMB to understand better their network users' equipment, and the relationships between them. The CMDB can also be referenced by other processes within the system.

The CMDB can be populated using the discovery product. Discovery searches the network for all attached computers and devices, then populates the CMDB with information on each computer/device's configuration, provisioning, and current status. Discovery also reports on any software which is running, and the TCP connections between computer systems, thereby establishing their relationships.

The asset portfolio, asset contracts and configuration applications contain modules which display different tables within the CMDB. Each application is designed with a specific purpose in mind.

The two Asset applications have an Asset Management focus, providing a perspective on the CMDB from a business perspective. The Asset Portfolio application links to CMDB of all assets, hardware, software, assets in stock, as well as records for manufacturers and vendors. The Asset Contracts application contains information about contracts, including leases, service contracts, purchase orders, warranties, and software licenses.[14]

IV. METHODOLOGY

There are many products that can cover our need or something near that. Some of them are being evaluated in this paper. Different needs and different implementations offer different functionalities that are not comprehensive and equal to our requirements. Sometimes there is a shortage sometimes there are plenty of unneeded features.

In order to make a comparison of the evaluated products in this paper we are going to define some metrics to use in this process. Every indicator has several values that will describe a scale of desirability of that level of implementation of the feature. In order to make some visible comparison every indicator will be assigned a scale of 5 values. The level of implementation will be targeted against those 5 spots according to the desirability of the current implementation. In some of the situations there are not enough implementation options or too many so their values will be scaled appropriately in order to keep the uniformity of the metrics and provide the needed flexibility for new and unpredicted options. In special cases where the feature is not applicable an N/A symbol will be put and it won't be evaluated in the final rankings. Indicators are classified in couple of categories:

A. Technical Indicators

1. Architecture - there are couple of architectural types. The most simple is a local application with these functions, next step is an client-server application with dispersed client application and centralized administration. Next level will be exposing of web services.

- 1 - local application
- 3 - client - server

- 5 - services
2. SaaS - Software as a Services is common model for distributing and consuming software services.
 - 1 - Infrastructure provided by the client
 - 5 - SaaS
 3. Availability over internet - Access to our data in every time from anywhere is a must these days
 - 1 - closed application
 - 5 - accessible

B. Functional Indicators

1. Reports - One of the most useful features is the ability to generate various reports. Not being able to generate a report and analyse its data discards the idea of asset management.

- 1 - Doesn't support
- 5 - Supports

2. Data Filtering and Searching - Having in mind we have huge amount of data this requirement is needed in order to find the wanted item(s).

- 1 - No Search ability
- 2 - Characteristics based filters
- 5 - Complex filters (almost sql like)

3. Notifications - in some extreme situations there is need for immediate response.

- 1 - No notifications
- 2 - Notification on the web page
- 3 - via email
- 4 - SMS
- 5 - configurable notifications

4. Extensibility - Living in a world where everything changes every day we need to be prepared for different kind of scenarios.

- 1 - No extensibility
- 3 - Aggregating available functions
- 4 - Programming language support
- 5 - Plug-in based expandability with third party applications via services.

5. Data model abstraction - These kind of applications has to store large spectrum of entities. Being able to easily describe them is wanted feature.

- 1 - Predefined Classes
- 3 - Configuring existing classes
- 5 - Defining new classes

6. Data populating - with the enormous amount of data that is being produced these days automation of the process of population and categorization is required as well.

- 1 - manual
- 3 - automatic population
- 5 - automatic population and categorization

V. COMPARISON OF EXISTING SOLUTIONS

Here is the list with the grades according to the technical requirements.

Technical requirements	Express		
	SAManage	Software Manager	Service-Now
Architecture	5	3	5
SaaS	5	1	5
Availability over internet	5	1	5
Total	5,00	1,67	5,00

Table 1. Technical requirements comparison

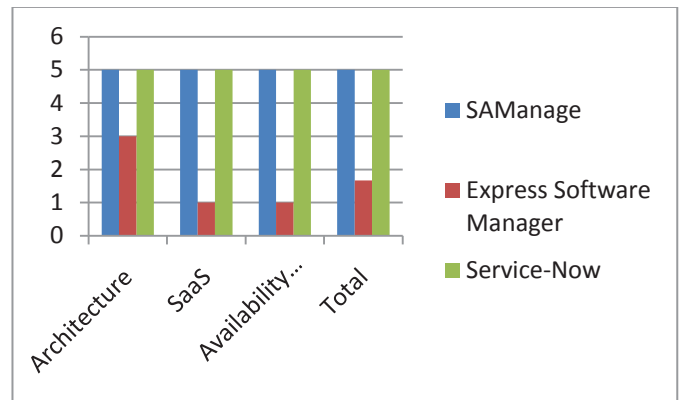


Figure 1. Technical requirements comparison graph

This is the comparison according to the Functional requirements set.

Functional requirements	Express		
	SAManage	Software Manager	Service-Now
Reports	5	5	5
Data Filtering and Searching	3	3	4

Notifications	1	1	1
Extensibility	1	1	3
Data Model Abstraction	1	1	5
Data Populating	3	5	3
Total	2,33	2,67	3,50

Table 2. Functional requirements comparison

Extensibility	2	2	6	2
Data Model Abstraction	2	2	10	2
Data Populating	4,5	7,5	4,5	1,5
Total	4,25	4,75	6,58	

Table 3. Factorized functional requirements comparison

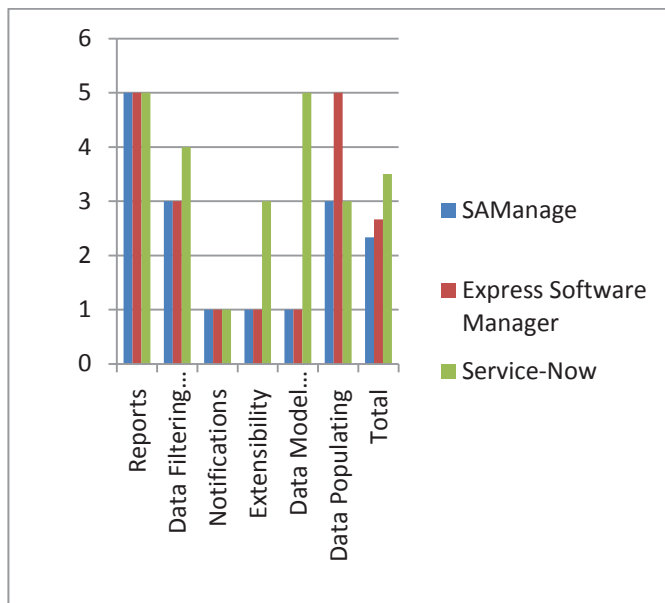


Figure 2. Functional requirements comparison graph

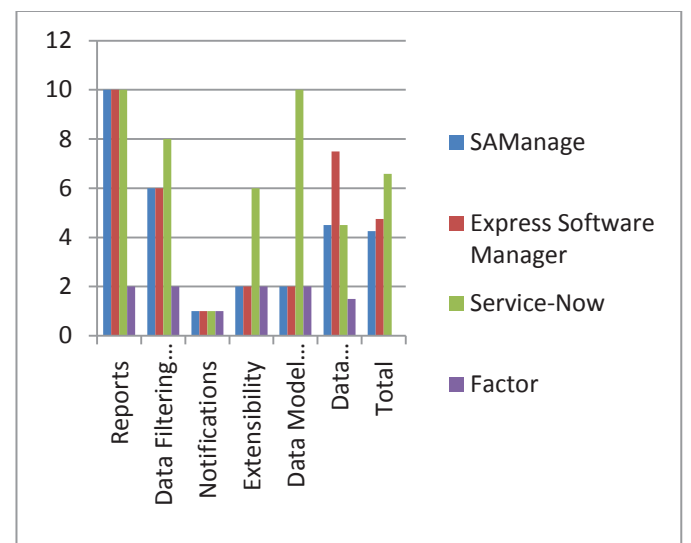


Figure 3. Factorized functional requirements comparison graph

However some of these features are more important than others. Lets value our desire for some of the features and compare the grades after multiplying them with our desire factor.

Functional requirements	Express Software Manager			Factor
	SAM	Manager	Now	
Reports	10	10	10	2
Data Filtering and Searching	6	6	8	2
Notifications	1	1	1	1

According to these information the overall summary of the grades is shown in the Table 4 and Figure 4.

	SAManage	Express Software Manager	Service-Now
Technical	5,00	1,67	5,00
Technical - Factor	10,00	3,33	10,00
Functional	2,33	2,67	3,50
Functional - Factor	4,25	4,75	6,58

Total	14,25	8,08	16,58
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Table 4. Overall requirements comparison

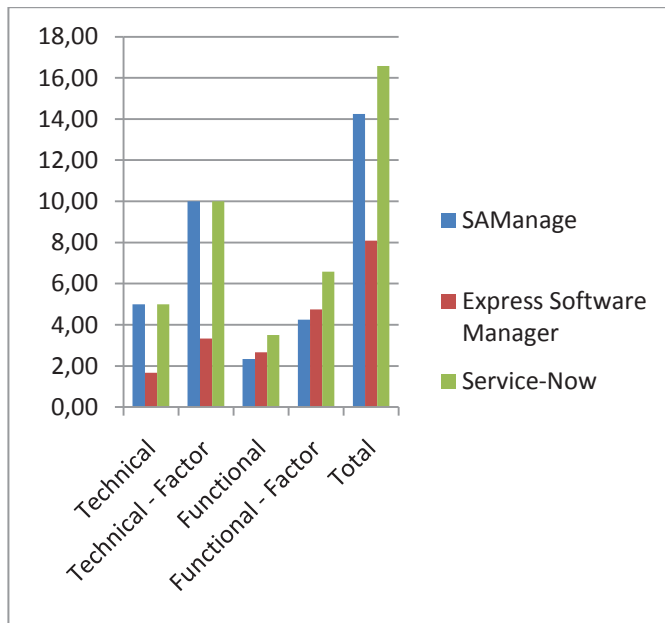


Figure 4. Overall requirements comparison graph

6. Saas vs. Legacy it asset management tools - <http://success.samanage.com/saas-vs-legacy-it-management-tools>
7. Best practices for implementing software asset management - http://www.expressmetrix.com/pdf/sam_tool.pdf
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VI. CONCLUSION

Benefits from asset management strategy appliance are obvious. Also having a good asset management system is one of the most important aspects. In this paper we tried to make an overview of desired features and technical preconditions. Also we tried to value our desirability of such functions and value some of the existing software packages against our methodology. General conclusion is that some of the systems managed to gain high scores in some of the sections excelling in some of the features but failed in the rest of the metrics. Having in mind the need of such systems gives us a motivation for its development.

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