Fill information gaps for the Asset Manager

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Many companies have implemented an Enterprise Resource Planning (ERP) or Enterprise Asset Management (EAM) system[1]. These are systems for an automated support of many company processes. The functionality covers areas such as Finance & Control, Human Resources Management, Project Management and Maintenance. ERP and EAM systems do not support all processes for an Asset Manager. Companies that develop themselves in the asset management area have a growing need for information. One of the major changes is the importance of information in decision making. In the past there used to be a strong human touch in every step and at many companies this is still the case. Many decisions are taken simultaneously by one person in the preparation of a plan, and not distributed over time and people like it happens when a designer / planner / work preparator takes many decisions. Automated support could help in such a case. Niche software tools often contain the functionality. Companies sometimes want to purchase those tools and then think that a gap is filled. But with the introduction of those niche tools, issues arise such as the integration of data. How should a company deal with it?

In the figure below functional areas for the Asset Manager can be seen, which could be connected to each other via an automated integration layer. In a number of functional areas often gaps exist. If ERP and EAM systems have gaps, this in itself is not a problem. The strategy of the suppliers of these systems is to provide the core functionality with which most of their customers can support the majority of their processes. The asset intensive sector sometimes is only a small part of the entire market of ERP and EAM vendors and the asset intensive sector is also diverse. Niche vendors have responded by delivering specific products such as risk registers[2], tools for determining maintenance concepts and prioritization tools for management. These products may also take the diversity of the asset intensive market into account and can be industry specific.

In their enthusiasm to improve, companies sometimes buy tools on an ad hoc basis. This is not always without problems. Problems could exist in the integration of data between the ERP or EAM system and the niche tools (both between ERP / EAM and the niche tools as well as between niche tools themselves). The systems often do not properly connect or there is no unambiguous redundant data. The lack of standardization within organizations is an obstacle for asset management (source: The state of Asset Management in the Netherlands. Y.C. Wijnia, P.M. Herder. World Congress on Engineering Asset Management, 2009).

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[1] For ERP systems think of SAP, Oracle and IFS. EAM tools with a major global market share are for example Infor EAM (formerly Datastream), Maximo and Ventyx.
[2] See for example http://www.assetresolutions.nl/en/products/risk-processor

Functional area	Summary	Common gaps in ERP and EAM
Visioning	Support for the determination and recording of future risk exposure per year	Only provide input. No functionality for presenting the required risk position per period
Risk register	Here risks are stored including the impact (likelihood and effect) per business value and across business values	No recording possible for managing risks including calculation monetary value across business values. Define mitigation measures per risk (requirement of PAS55 and NTA8120)
Risk analysis	Quantify risks: what is the exposure of risks: what is the magnitude and what is the development of the likelihood related to e.g. the age of the assets	'what if' analysis (simulations) and determine optimal maintenance concept not possible
Planning	The functionality for determining the optimal portfolio with which the highest risk mitigation per monetary unit across business values can be achieved	No automated functionality for prioritizing investment proposals based on business objectives. Impact on investment planning can not be determined. PAS55 and NTA8120 however have requirements in this area.
Program management	Tools with which the implementation of the measures in the portfolio can be managed	No link between the targets of a project and the required performance on the business values
Asset code register	Database in which the keys and attributes for the objects in the database are controlled on one spot, which can be used by different functional areas	Data sometimes is recorded redundant. Data in ERP/EAM can differ from data in other systems. Creation of management information and perform analyses is often a time consuming process
Decision support	Tool with which data analysis from different systems can be executed	Failure costs are not always available in systems. Compare maintenance costs with failure costs, lost earnings and efficiency not always possible. This can often be found in separate reports.
Knowledge management	Record and maintain asset management relevant information and easily reuse the information	Sometimes available. Data to search between systems does not always match
Contract management	Support in the agreement and control of asset management contracts including the KPIs	Record internal contracts (Service Level Agreements) between Asset Manager and Service Provider not always possible. Also it is not always possible to record KPIs between the Asset Manager and Service Provider and report on it

(Left vertical label: Integration)

Therefor it is not surprising that for proper asset management an organization should ensure consistency of data[3]. Often the data often is present in the minds of people instead of systems and the ownership of the data is not properly defined. If organizations wish to develop further in asset management, it is very important that information management is organized. Then the question arises what information management is all about. Information Management consists of two parts.

First, a unified data model needs to be set up (e.g. an entity can have only one interpretation), which must also be managed. It means that the model should be consistent (free of contradiction) and the model must be very flexible. Changes in the organization must have a minimal impact on the model. Furthermore, it should be possible to exchange data between different organizational entities and each entry can only have only one owner.

In information management it is also essential that the roles and responsibilities are defined and implemented for managing the data. After all, what sense does it make to set up a nice data model, when nobody feels responsible for the quality of the data?

Ergo: if a company wants to develop, then to implement niche asset management tools is an important step. However, if this is accompanied without a clear data model and the roles for the correct delivery of data are not implemented, it is like a frame in a museum without a painting. That is the equivalent as to burn money and this is no proper asset management.

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[3] The Dutch industry specific asset management standard NTA8120 requires it explicitly