How to get in control through Asset Management

Asset Management is a relatively young field. In 2004 the PAS55 was introduced; de predecessor of the ISO55000 which was introduced in 2014. Nowadays, Asset Management has been broadly applied in the world of water authorities. The way this is done varies enormously, but the shared experience is that effective Asset Management turns out to be hard. The basis for this is that Asset Management (AM) cuts right through multiple departments (horizontal agreement) and on top of that, asks for vertical transparency (Line of Sight). This all asks for installation of a different way of working, documented in an Asset Management System. It also requires the ability of the system to share asset information. Above all, it asks for mutual cooperation crossing borders of different departments and sometimes even across organizational borders. With all the information available through trade journals, conferences, suppliers and/or colleagues, there is a risk that the system becomes the goal instead of optimization of asset-related performances, costs, and risks. In this article we help you to "Keep your eyes on the ball" by using six principles.

But first an historical perspective

The rise of Asset Management in the world of water authorities is the result of decades of scaling and centralization. The number of Dutch water authorities has shrunk from 2.600 to just 21 in 60 years; drinking water companies went from 198 to just ten. The natural cooperation from the 50s and 60s because everybody worked in the same pumping station is not as natural today because this is now organized in several departments and most (production) locations are unmanned. Asset Management is a way to restore that cooperation. Next to this, it is also about knowledge of assets. Where knowledge was in people's heads during the early days, we are now much more dependent on asset data from different systems. This also asks for cooperation and integration of systems in order to make the right decisions. Asset Management can then be seen as the logical reaction on changing conditions. Figure 1 is an illustration of the domain of Asset Management which visualizes this cooperation well. The figure At the same time the figure shows that this requires new competences and a different way of management. Above all, it is a cultural change: breaking down departmental walls and make sure assets perform optimally with each other just as in the past; now and in the future.
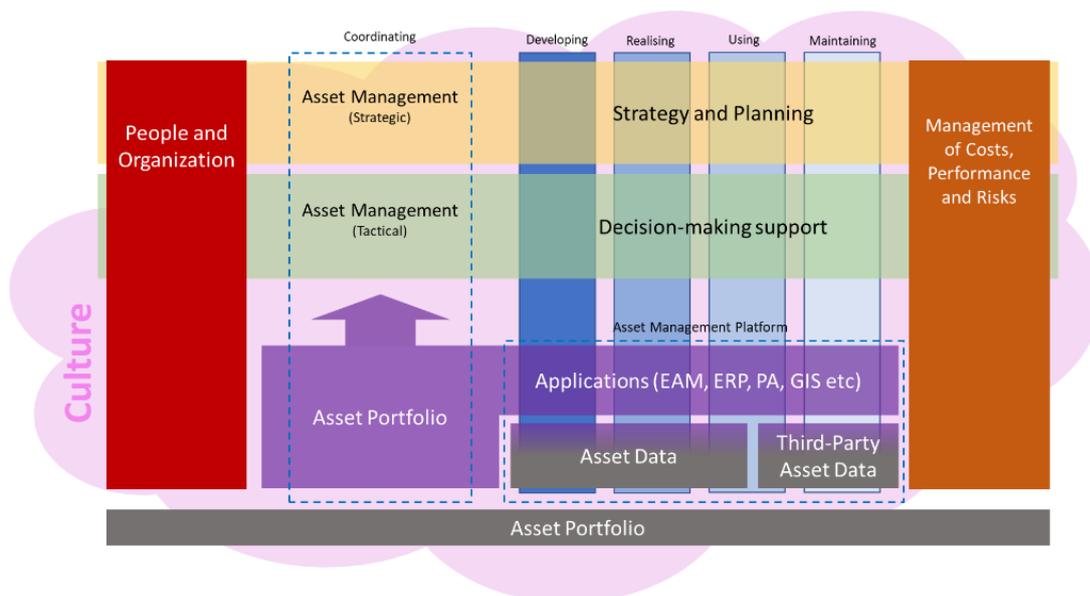

Figure 1: MaxGrip Asset Management Model (based on IAM Landscape Model)

Asset Management in Practice

Working together, making agreements, integrating systems; sounds logical and looks quite easy. Despite this it turns out practice is often less obvious. Are the following descriptions familiar?

- Asset Management is supposed to facilitate cooperation, but in practice new friction seems to emerge as a result of a new hierarchy;
- There is a lot of talking and a lot in writing, but there is little change in the workplace;
- Should we go for an ISO certification or not? What would it give us?
- We need to make Strategic Asset Management Plans (SAMP) and Asset Management Plans (AMP); what should be in it anyway?
- Does Asset Management mean that there should be a separate department or that everybody should do a bit of Asset Management? How do we divide roles?
- Let's organize our baseline data and backlogs in maintenance first before we start something new;
- Working together efficiently with the market doesn't work for us; what should and shouldn't be outsourced and how?

Why does Asset Management turn out to be so complex?

In Figure 2 two yellow arrows are drawn. The horizontal arrow is about cooperation; the cooperation over the departmental boundaries. The vertical arrow is about an important principal of Asset Management: "Line of Sight". This means that everybody who contributes to the assets, from top to bottom, should see and understand why certain activities are desired from him or her. These two yellow arrows are the essence of Asset Management. But to reach this in the current big and centralized organizations turns out to be complex. Practice has proven that Asset Management Systems (As defined in ISO55000) are needed to reach this. Figure 1 shows the connections in such a system. Relative to the existing departments Development, Realization, Operations and Maintenance, there are processes needed to make connections between these departments on strategic and tactical level; there is an Asset Management Platform needed that provides users of assets with the correct information; and the correct competences should also be present in the organization. Finally, an overarching organization should be set-up which provides guidance on performance, risks, and costs.

Tools to make Asset Management work

In order to make Asset Management work, one can work step by step; as long as there is a good basis. We will discuss the next six tools one by one.

1. Setting up cooperation structures and appointing Asset Management roles.
2. Installation of Asset Management fundamentals.
3. Set up of Asset Management: everybody should have complete and correct information.
4. Create insight in health and criticality of assets.
5. Setting up a transparent process for Long-Term Asset Planning (LTAP)
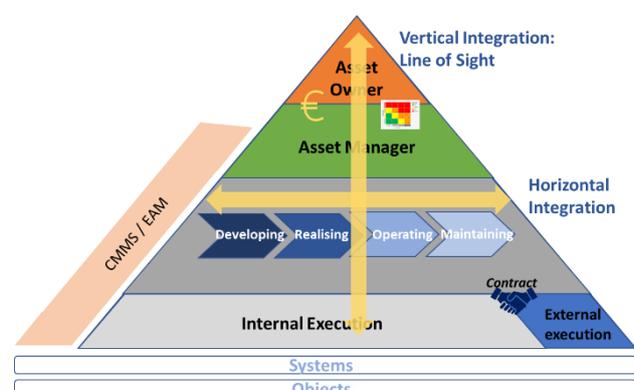6. Optimization of cooperation with the market (outsourcing of activities)

Figure 2: The Asset Management Roles

1. Setting up cooperation structures and appointing Asset Management roles

Overall, the life cycle of assets can be recognized in the structure of departments in companies: Development, Realisation, Operation and Maintenance. All these department have knowledge from their own perspective about assets. The first step towards Asset Management is therefore to bring this knowledge together by installing horizontal communication structures. This can be done by for example communicating per purification area or organizing per domain; and both on operational and tactical level, the directors of these horizontal structures are the Asset Managers. In fact, a matrix organization arises because of this. Even if these were the only steps, this cooperation means gain. Next to this, it is important to assign the role of Asset Owner; someone who has the mandate to balance performance, risks and costs and make decisions.

2. Installation of Asset Management fundamentals

Asset Management is eminently a working method which allows for a step-by-step implementation based on new insights. Also the ISO55000 supports this. You do not need to implement all components for certification (if you wanted to). But you should at least set up the following base:

- A. Strategic Asset Management Plan: the SAMP describes how the organizational goals are translated into Asset Management goals, how AMP's should be drafted and how the Asset Management system will be organised to reach goals. The ISO55002 describes perfect guidelines to make a basic SAMP.
- B. Asset Management Plans: plans per asset type, object or system which describes which operational approach (operating and maintaining) and investments (replacement, renovation, demolishing) are needed to realise performance.
- C. Process handbook: This document describes company processes and methods to reach Asset Management goals. The size of this handbook depends on the amount of goals you set for yourself. When Asset Management starts to yield improvements, more need for an integral approach will grow as well as more need for cross-departmental processes.
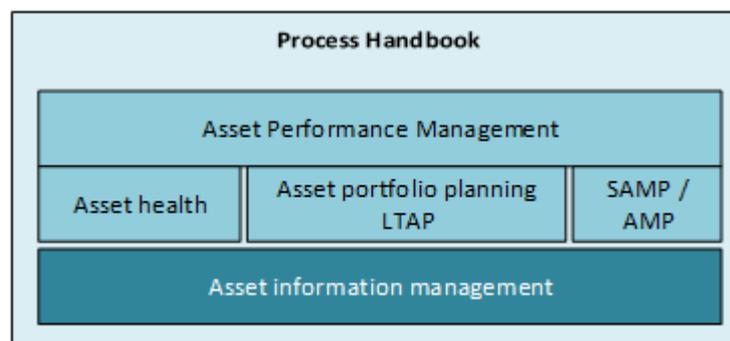

Figure 3: Fundamentals of Assets Management

3. Asset Information Management

3 shows the Asset Management landscape with her operational, tactical, and strategic processes. The model visualizes that Asset Data acts as a fundament for all processes in asset-related departments. Also, when Asset Management starts to play a bigger role, the need for complete and good information will increase among stakeholders in order to use this to facilitate good decision-making. There needs to be agreement on who is the owner of which data and which system contains which data and last but not least, how these systems can be integrated with each other to create one Asset Management Platform.

4. Insight in asset health and criticality

Asset Health is not just about the condition of assets, but also about the degree to which an asset can deliver its required performance within the RAMS preconditions, which are Reliability, Availability, Maintainability and Safety. In other words: you need to know which assets are critical for your business, in which phase of life they are, the remaining lifetime and to make sure there is insight in required and delivered performance.

This is important input for both operational decisions (operating and maintaining) and tactical decisions (like LTAP).

5. Long-Term Asset Planning (LTAP)

An LTAP with good reasoning gives insight in what can be expected on the long-term regarding asset-related investments. Therefore, the LTAP is essential for Water Authorities, who are focussed on the long term by definition. A good LTAP is risk-based and has been drafted with input of all asset-related departments and requires a good insight in the current health of assets and (future) performance requirements. The advantage is consequently that the organisation gets "in control" regarding performance and risks and at the same time peaks in investments are prevented.

6. Optimization of cooperation with the market (outsourcing)

Almost always (maintenance) activities are partly outsourced to the market. Sometimes because it is a specialists' job, sometimes because the market can do it at a lower price and sometimes because there is simply not enough manpower. In all cases it counts that the better you have organised your own business, the better you are able to outsource work to the market. In many cases it is more efficient to outsource more functions to the market than just hiring extra hands. It is about finding the right balance. Figure 4 shows 4 possible models of outsourcing, which, in theory, can occur at the same time in an organisation depending on the asset portfolio.
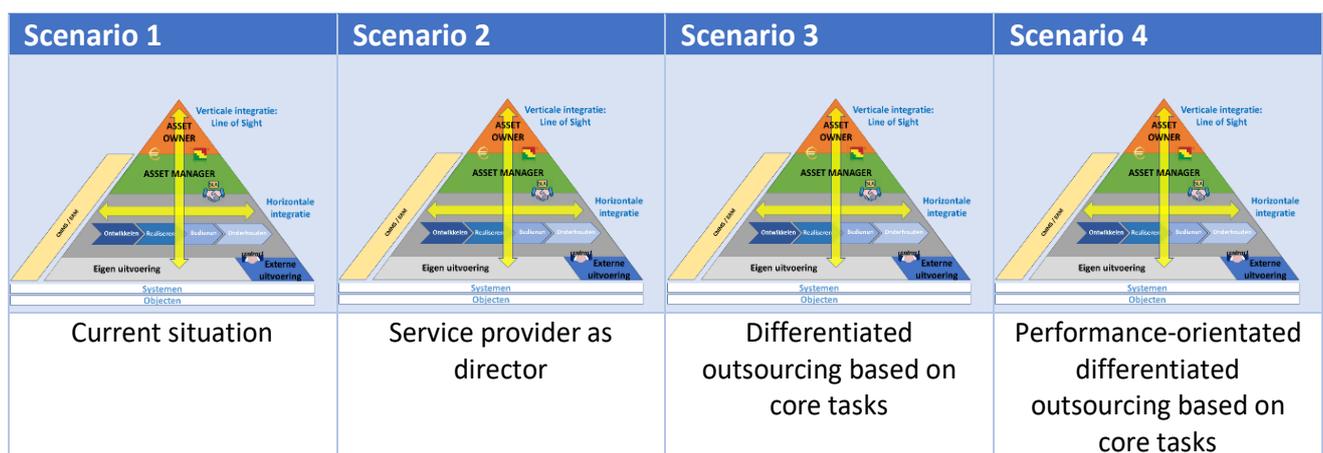

Scenario 1	Scenario 2	Scenario 3	Scenario 4
Current situation	Service provider as director	Differentiated outsourcing based on core tasks	Performance-orientated differentiated outsourcing based on core tasks

Figure 4: Various Forms of Outsourcing

More about MaxGrip and asset management in the water industry, including case studies, can be found on our website: [Water and Wastewater | MaxGrip Asset Management Consultancy](#).