



# *Electric Energy T&D*

## MAGAZINE

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### THE CHANGING LANDSCAPE OF ASSET MANAGEMENT IN T&D





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## The Changing Landscape of Asset Management in T&D

The landscape of asset management in T&D is changing rapidly. After decades of relative stability, the need to incorporate smart metering and smart grids to accommodate renewables and distributed generation is putting increasing pressure on asset managers. At the same time a growing number of regulatory bodies are moving to risk-based frameworks, forcing a re-think of how we manage our fleets of aging assets. Finally, the new ISO 55000 standard that was released in early 2014 is gaining traction in the utility space and is raising the bar of what is considered 'competent' asset management. EET&D spoke to Boudewijn Neijens of Copperleaf about these important developments.

**EET&D:** It looks like asset management is caught in the eye of the storm right now. How can asset managers safely navigate through this rough patch?

**BN:** These are turbulent times indeed. The old British poster 'keep calm and carry on' comes to mind, and interestingly the Brits are indeed coming to the rescue: much of the new thinking around best practices in asset management comes from the UK-based Institute of Asset Management (IAM). For the last twenty years they have been publishing a growing body of knowledge in this space. They also triggered the international effort that recently brought us the ISO 55000 standard for asset management.

**EET&D:** There is considerable excitement around ISO 55000. Tell us more about this new standard.

**BN:** It is important to understand that the ISO 5500x series are management standards for asset management, in the same way that ISO 9001 is a quality management standard and ISO 33001 is a risk management standard. In other words, these standards do not address technical issues; they set the scene for the management processes and systems one would expect

to find in well managed companies. Since T&D organizations typically manage billions of dollars' worth of assets, a standard in this area is welcome news.

It has the merit of highlighting and clarifying some of the core principles that should be used to manage assets. In particular, it outlines the importance of two core concepts:

- the fact that assets are only relevant if they generate value for the company and its stakeholders; and
- the fact that assets can fail to perform their assigned tasks and that the risks attached to such failures must be understood and managed.

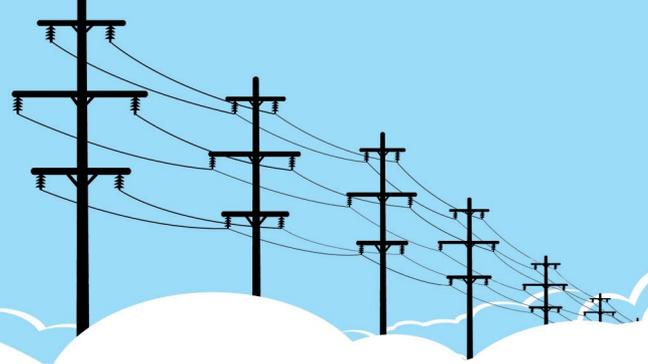
More importantly, the standard gives us a great vehicle to elevate the asset management debate to the leadership level in many companies. It reinforces the view that asset management is not a form of glorified maintenance, but actually impacts all aspects of an asset-intensive corporation.

**EET&D:** How will this affect T&D organizations in particular?

**BN:** In most markets T&D operators are monopolies and as such heavily regulated. As expected, these economic regulators are very interested in the new ISO standard since it gives them a ready-made asset management framework developed with input from relevant stakeholders and vetted by international experts. I expect quite a few regulators will gradually push T&D operators to adopt the standard, either by demanding formal certification or by requiring demonstrable alignment with the standard's spirit. In effect, regulators will want to see proof of competence in the area of asset management. This is already the case in the UK and in the Netherlands, and quite a few North American regulatory bodies are following these developments with interest.

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Other stakeholders are also showing interest in the standard, most notably insurers who want proof that asset risk is well understood and managed; and the legal community which will see the standard as the minimum level of duty of care that should be expected of the asset operator.

All this explains the flurry of activity in various industry sectors to interpret the standard and provide additional guidance directly applicable to each sector. The water & waste industry in Australia has already published its own guide to implementing ISO 5500x, under the assumption that the industry regulator will soon expect compliance. Similarly, the rail sector is producing a set of rail-specific international guidelines. In the T&D world, Cigré has just launched a workgroup that I'm chairing, tasked with producing guidelines around the general process assessment steps and information requirements for ISO 5500x for utilities.

**EET&D:** You mentioned risk and value as core concepts. Can you expand?

**BN:** In many organizations risk is primarily seen as something driven by the outside world (e.g. the risk attached to changes in oil price) or attached to project execution (e.g. the risk of project delays or cost over-runs). But in asset-intensive organizations a large part of the risk picture is linked to existing assets. An asset failure can have serious consequences, both on service levels and on safety and environmental fronts. This means we need comprehensive and up-to-date asset plans for critical assets to ensure their ongoing performance and reliability, and ultimately, to deliver on the strategic objectives of the company. Moreover, most assets degrade over time, underlining the importance of a robust asset sustainment strategy to mitigate asset risk: doing nothing is not an option.

This has driven the need for improved decision analytics. Without getting into too much detail, an organization needs processes and systems to address the following aspects:

- Descriptive analytics: describe the current state of the assets (e.g. condition scores or health indexes) and leverage this data to determine immediate intervention needs;
- Predictive analytics: use the data collected above to feed models predicting future asset condition, risks and needs – i.e. inform a credible long term plan;
- Prescriptive analytics: based on the needs identified above, build intervention strategies and decide on the best use of the organization's limited resources (financial, human, equipment, etc.) using optimization and simulation tools.

In this context, the concepts of value and risk are key vehicles allowing asset managers to communicate with other internal stakeholders (think finance, engineering, planning) and with external parties (the board, regulators, etc.). They allow us to quantify the value of investing or re-investing in our assets, thereby leading to more rational and defensible decision making.

**EET&D:** You mention decision making. How do T&D organizations compare to other sectors in this respect? Are we in the lead?

**BN:** Decision making is a fascinating subject. I'm always amazed how poorly we are equipped to make key decisions, be it in our personal lives or for business. In many cases we heavily rely on expert opinions, which are certainly useful but should be supported by data and rigorous processes to ensure decision making is systematic, consistent and transparent. In my experience, organizations often have a relatively well structured process for large new build projects, but sustainment decisions are not as well managed. Yet there are generally many more sustainment decisions to be made, and these generally consume the largest part of our financial and human resources.

At Copperleaf we often use a five-step decision-making maturity scale to gauge where our customers are and want to be.

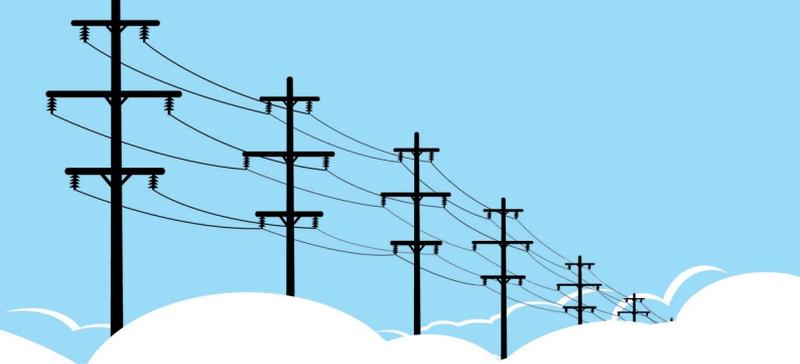
## DECISION MAKING MATURITY



Source: Copperleaf Technologies

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I'd say T&D organizations are no better or worse off than other asset-intensive sectors but face unique challenges disrupting their businesses, which make effective decision making even more crucial. We therefore see T&D companies as being in the lead when it comes to exploring best practices in asset management and adopting best-in-class solutions.

**EET&D:** We often hear that standards are merely a tick-box exercise and deliver little value to organizations. What is your view?

**BN:** The benefits you extract from the alignment to a standard or to a set of best practices are entirely under your control. Some organizations might elect to go for a minimal effort simply to obtain certification. Others will use this initiative as a catalyst to become excellent at asset management. There is growing evidence that companies aiming for excellence reap significant benefits. For instance, a major Dutch electrical and gas utility has managed to improve its reliability to become the best in the country. It improved its safety record by 25 percent while at the same time becoming the lowest-cost operator, without affecting the financial bottom line. On the 'soft' side, its employees now understand the asset management processes much better, its board is now fully engaged in rational discussions using risk and value as key metrics to approve major capital decisions, and the economic and safety regulators fully trust the company.

**EET&D:** How do you recommend starting such a journey?

**BN:** Often it's a matter of starting with a gap analysis. Where is your organization today, and what end state do you want to aim for? Then it's a matter of breaking the project down into manageable chunks. We see many organizations starting with a proof of concept in a particular department, and possibly limiting the scope of the first phases to items that can quickly deliver results and increase the level of buy-in and interest in improved asset management. For instance, building a value framework that allows organizations to effectively evaluate the true contribution of each proposed project in

alignment with the strategic objectives of the organization can be an eye opener and a very useful first step. Similarly, many organizations will want to spend time early on refining their risk matrix to ensure everybody uses a consistent model to quantify risks, and that only risks that matter to the organization are taken into consideration.

**EET&D:** We can't thank you enough Boudewijn for taking the time out of your schedule to chat with us. At the rate asset management is changing and growing in T&D, it's good to know technology is keeping up the pace.

White papers on the importance of value and risk in decision making can be found at [www.copperleaf.com](http://www.copperleaf.com). For more information on best practices in asset management visit the Institute of Asset Management's website [www.theiam.org](http://www.theiam.org).

## About the author



**Boudewijn Neijens** holds a Master degree in Mechanical Engineering from the University of Brussels, an MBA from INSEAD in France, is a Certified Asset Management Assessor and holds a Certificate of the Institute of Asset Management. He has been involved with high-technology start-ups for the last 25 years, currently in the

fields of asset management and environmental data processing. He is Chief Marketing Officer at Copperleaf Technologies in Vancouver, BC. In this role he works with large asset-intensive corporations around the world to refine their asset management practices in the areas of Asset Investment Planning and Management, decision support systems and risk-based planning models. He is the president of the Vancouver chapter of the Plant Engineering and Maintenance Association of Canada, and the Vice-Chair of the Canadian chapter of the Institute of Asset Management.