

# TAKING A WHOLE-SYSTEM APPROACH

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**Back in 2006 a group of researchers reported to the US Advisory Committee on Water Information about a then-just-emerging trend in asset management that they called “whole systems design”. In their position paper they explained the benefits of approaching asset management for water utility networks from a whole systems, including sustainability gains, risk reductions, and cost savings.**

In 2012 when the Rail Safety and Standards Board (RSSB) wrote about what was needed to spark innovative asset management in the UK rail sector, it too argued in favor of a whole of system approach. Today’s railway evolved as a collection of subsystems, departments, companies and assets, each pursuing its own priorities, they explained. In order to achieve the transformation tomorrow’s railway requires, they continued, the industry must adopt a whole-system approach to their investments, maintenance, and asset management.

Now in 2018 the whole systems approach to asset management is beyond an emerging trend or a recommended strategy in asset management. It has today emerged as the foundational principle for best practice asset management for energy, water and transport networks.

When French electricity transmission system operator (TSO) RTE, for example, sets its maintenance and renewal strategies for one, five, and ten year windows, it applies a whole systems approach to ensure they understand and prepare for all the impacts of their asset management choices. Leading firms including Alstom, Nexans, GRTgaz, and French railway network operator SNCF have all moved towards adopting this whole system approach.

The benefits of a whole systems approach to asset management are multiple.

First and foremost, the holistic view of a whole systems approach offers decision makers a chance to understand how any choice they make affects all parts of their business. In effect, this destroys artificial boundaries between business units, divisions, and departments, and breaks the silos that impede efforts to effectively manage corporate assets.

Second, a whole systems approach allows asset managers to build models of their systems that reflect the real world instead of relying on simpler, cleaner, theoretical models that somewhat mirror, but don't match, the world outside. Asset managers understand that their asset systems are connected with other systems, including budgets and human resources, regulatory and even climatic systems. The opportunity to model all of the important systems and subsystems and make choices based on this reality is one most asset managers embrace.

Third, only the whole systems approach gives asset managers and top-level decision makers the confidence they need when presenting their asset management strategies to stakeholders and regulators. When all subsystems, constraints, and policies have been modeled, simulated, compared and contrasted, the optimal decision is not only clear but also reliable, auditable, and justifiable, too.



Cosmo Tech is a global software company that helps senior management and the C-suite make optimal decisions. Through the use of our proprietary methodology and technology, our clients can model and simulate complex scenarios to accurately predict the outcome of events across multiple business silos even if those events have never happened before. This unique capability to deliver interconnected insights allow organizations to accurately model various complex scenarios, therefore providing management with the capacity to make the best decisions for their company. Cosmo Tech's solutions elevate investments in big data and data science to decision management and Augmented Intelligence, which together allow the creation of unprecedented value by combining human and artificial intelligence. Cosmo Tech is truly transforming the way that decision makers in the energy, utilities, and mobility sectors optimize their asset management and operations strategies.

Network, is a sister publication to the well-established and highly successful brand, Utility Week, and provides a much needed resource for engineers in the UK's gas, power and heat networks at a time of transformation and disruption across the nation's energy system.