



2nd IWA Leading-Edge Conference & Exhibition on **Strategic Asset Management**

**Strategic infrastructure asset management:
concepts, 'schools' and research needs**

Helena Alegre, LNEC, Chair of the IWA SAM SG

Presentation layout

- Introduction
- Key concepts
- Potential levels of intervention of the IWA SAM SG
- Main AM 'schools'
- AM specifications and standards
- Industry needs
- Concluding remarks



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Introduction

- This paper aimed at launching the discussion about IWA future role and priorities with regard to SAM – and it did.
- IWA already has relevant activities:
 - LESAM 2007 is the second LESAM;
 - International newsletter WAMI;
 - IWA SAM SG.
- IWA may have other roles to play.



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Water supply and wastewater infrastructure asset management

What is an infrastructure?

What differentiates
infrastructures from other
capital assets?



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Infrastructure assets

- Essential assets to provide a specific service.
- May change with time, according to service needs and technology available:



- **“Infrastructure assets ... are defined functionally as assets that **are not replaced as a whole****
 - but rather are renewed piecemeal by the **replacement of individual components**
 - whilst **maintaining the function of the system** as a whole.
- **Infrastructure assets have indefinite lives.**
 - Economic lives, however, can be **assigned to individual components** of an infrastructure system.”

(Burns *et al.*, 1999)



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Water and wastewater supply infrastructure **asset management**

What differentiates water and
water supply infrastructures
from other infrastructures?



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Water supply and wastewater infrastructures

- Natural monopolies
 - Market rules do apply easily (competition, value assessment)
- Service taken for granted in the industrialized societies
- The big “slice of the cake” are buried assets
 - Condition assessment is not easy;
 - Comprehensive inspection is not feasible on a systematic way;
 - The engineering competence becomes much more important than for other infrastructures when assessing asset condition and setting up investment priorities.
- System behaviour \neq sum of the performance of individual components (e.g. hydraulic, water quality, service reliability).



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Water and waste water supply infrastructure asset management

What is "Asset Management"?

There are hundreds of definitions



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One of my preferred ones...

«Asset management is the **art** of **balancing performance, cost and risk**. Achieving this balance requires support from three pillars of competence: **management, engineering and information.**»

or

«Stated simply, asset management is a **corporate strategy** that seeks to balance **performance, cost, and risk**.

Achieving this balance requires the **alignment of corporate goals, management decisions, and technical decisions**. It also requires the corporate **culture, business processes, and information systems** capable of making rigorous and consistent spending decisions based on asset-level data.»

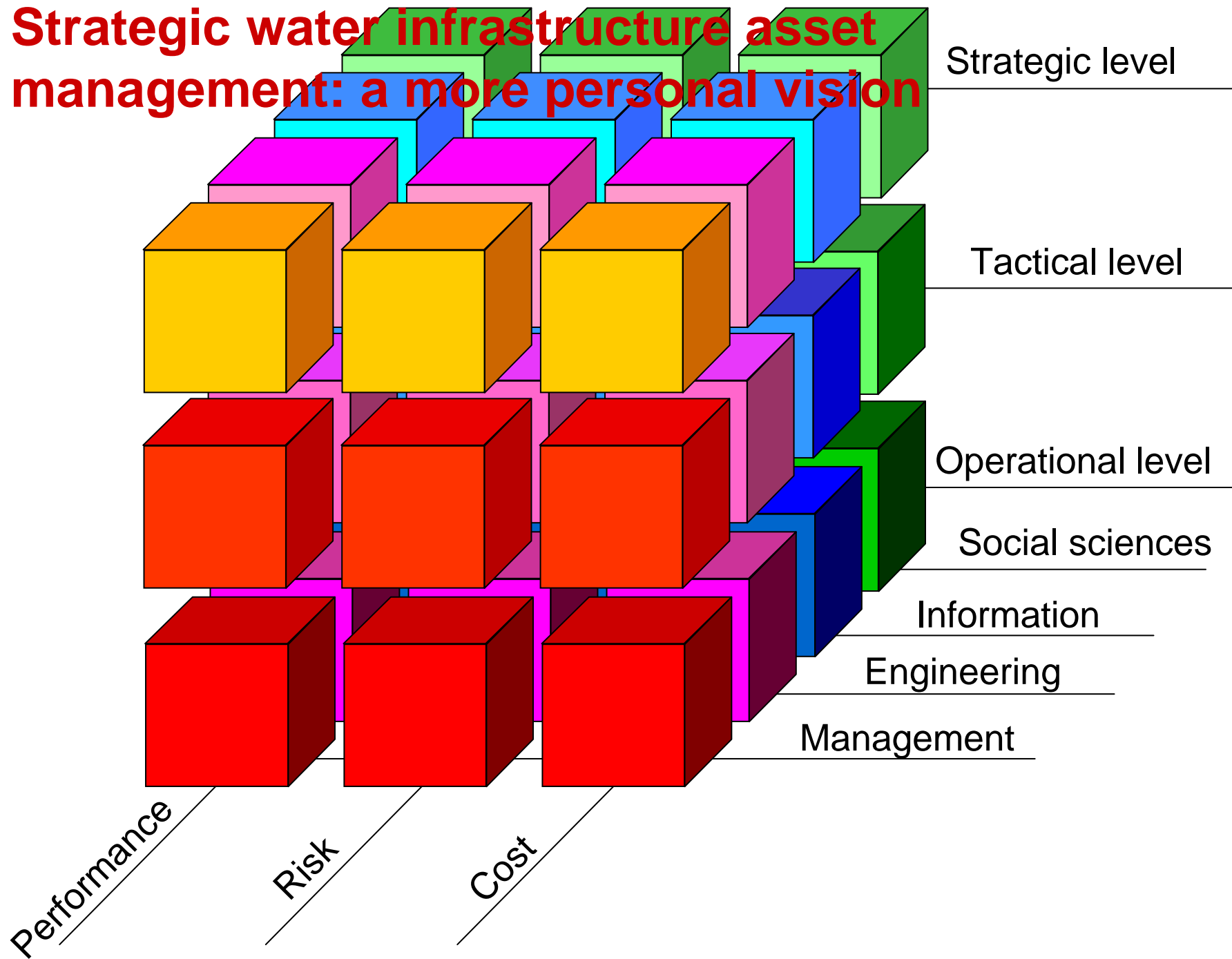
(Brown; Humphrey, 2005)



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Strategic water infrastructure asset management: a more personal vision

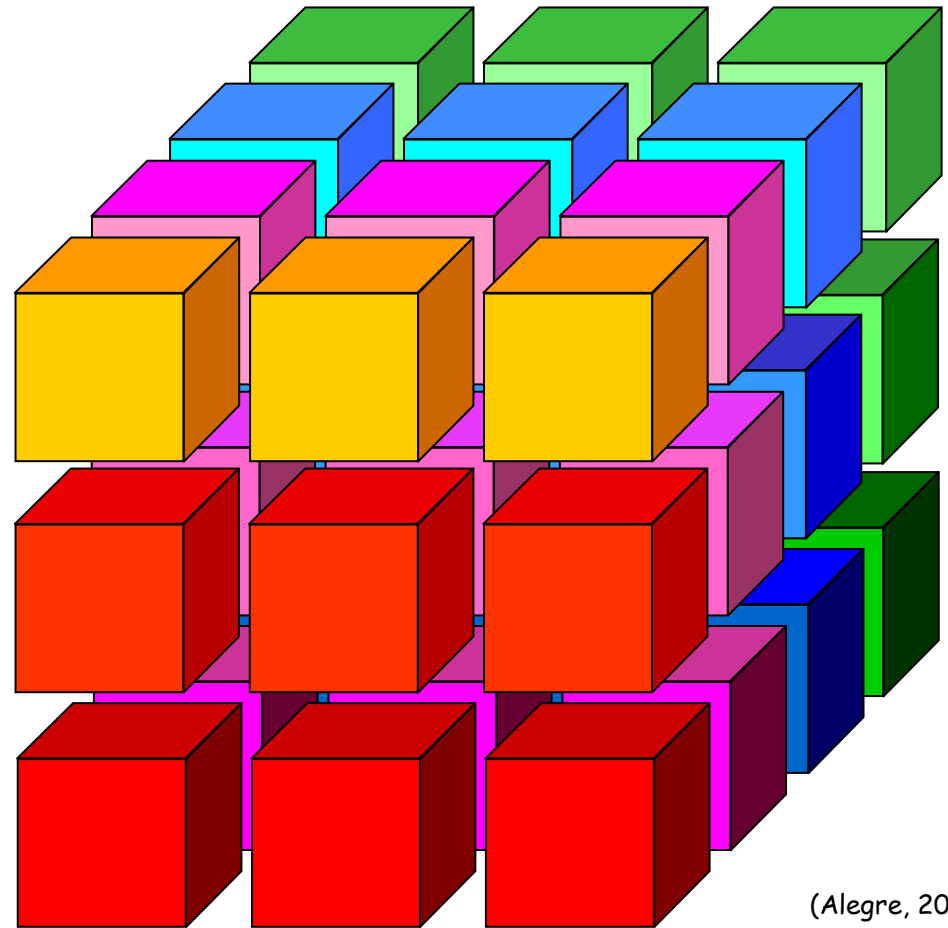


Strategic water infrastructure asset management: a more personal vision

Corporate strategy and corresponding planning and systematic and coordinated activities and practices through which an organization optimally manages its assets, and their associated performance, risks and expenditures over their lifecycle, balancing **performance, risk and cost** in the **long run**.

...requires coordinated intervention at **strategic, tactical** and **operational** levels.

...is a multidisciplinary approach. Main competences involved are **management** (financial, organizational), **engineering, information** and **social sciences** (economy, enterprise sociology, communication).



(Alegre, 2006)

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Ideally, IWA SAM SG has a potential leverage role at:

- the institutional and policy making level;
- the utility level.



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At the institutional and policy making level, SAM SG might contribute to:

- create awareness to the politicians and to the society for the need of SAM;
- clarify concepts and principles;
- assist in the establishment of legal and institutional mechanisms;
- assure that regulators do not confine their aim to serviceability in the short run;
- promoting international R&D projects.



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At the utility level, it might contribute to:

- implement best practices, through the production of recommendations directed to utilities of different sizes and degree of development;
- network utilities;
- change the current predominant culture;
- improve the information structures and current information management practices;
- improve the organisational structure;
- adopt effective engineering decision support tools and solutions to the utilities;
- improve multidisciplinary and multi-departmental collaboration and communication between stakeholders.



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Main outcomes from the SAM SG meeting

- LESAM's should proceed on biannual basis (every two years)
- LESAM 2007 participants are encouraged to reply to an inquiry to help us improving the next LESAM's.
- Thematic events or workshops may also take place if and when appropriate
- SAM SG should not take the lead in writing standards, but have a word in relevant ongoing initiatives (e.g. PAS 55 revision, ASTM, ...)
- SAM SG should identify the key organisations that published AM standards, guidelines, specifications, etc and contact them, asking for a summary of existing documents, on-going initiatives and planned activities.



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Concluding remarks

- The roadmap of the IWA SAM SG is established by its members;
- The main directions are already defined.
- Inquiry results and LESAM conclusions and recommendations are relevant for the future of the SAM SG.
- Existing work and contributions from leading AM organizations will be taken into account (e.g. Australian/NZ work, GWRP, AWWARF, WERF, IAM, EPA, ...).
- Proposal from IWW (DE) for next LESAM
- Active members are more than welcome.



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