



WATER VALLEY
DENMARK

Water & Digitalization, ATV Tech Talk

May 2024, CEO Ulla Sparre, usp@watervalleydenmark.com

Vision & strategic focus areas



PURPOSE

Improving life through co-creation of meaningful water innovation

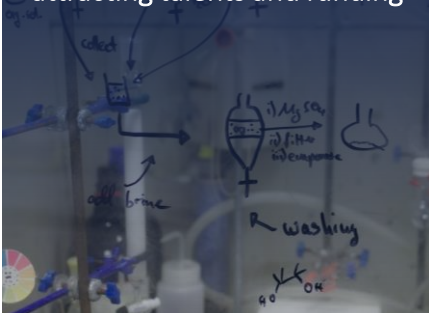
VISION

Accelerate global green growth by establishing one of the world's strongest platforms for water innovation



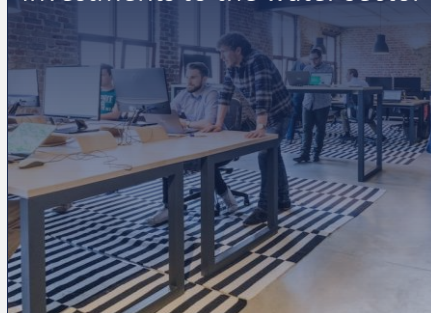
RESEARCH

Strengthen water research and education with partners by attracting talents and funding



INCUBATION & ACCELERATION

Accelerate growth in water tech startups and attract talents and investments to the water sector



OPEN INNOVATION

Innovate and demonstrate the world's most sustainable water cycle

Facilitate larger open water innovation projects



INTERNATIONAL CHALLENGES

Engage in international partnerships and challenges



PHYSICAL EPICENTER

Support a physical innovation hub for water technology



Active communication
Well driven organization
Satisfying Member Service
Dedicated high competence team

Value Creation in Digitalization

05

In this project, we have worked on how data sharing can help find new solutions to six major societal challenges:



This project is supported by:
THE EUROPEAN UNION
The European Regional
Development Fund

Funded as part of the Union's response
to the COVID-19 pandemic
Investing in your future

1. Water data for balance

One of the big, wicked water problems is the challenge of more extreme weather – so how can we create solutions to prevent or manage drought and extreme flooding? We need to be better at understanding how to prevent and manage these imbalances. The selected use case two (see more in chapter four) addresses this challenge by aiming to create a simple overview of the most important factors for a balanced water supply.

2. Water data for health

Clean water is a prerequisite for good health. Unfortunately, we are witnessing an increasing presence of hazardous substances in both water supply and wastewater. Enhanced access to data can significantly improve opportunities for prevention. Therefore use case 3 (chapter four) is related to improving monitoring, detection, and reduction of harmful substances in wastewater.

3. Water data for energy

Water is needed for all parts of energy production, and energy is required to extract, distribute, and deliver water of appropriate quality to users and then again to treat wastewater. While heavily interconnected, this water and energy nexus is managed and governed independently. Due to a lack of awareness among consumers (both businesses and individuals), there is a risk of energy wastage. Via available data, we can demonstrate that water wastage and inefficient timing of water consumption is in fact energy waste.

4. Water data for climate

In the water sector, GHG emissions stem from a range of sources including construction activities, energy consumption, and fugitive gaseous emissions such as nitrous oxide (N₂O) and methane (CH₄). Methane and nitrous oxides are two potent greenhouse gases with much higher global warming risks than CO₂. In the technical water cycle, direct CH₄ and N₂O emissions occur from microbial processes in sewer systems and waste water treatment plants. Decisions based on water data can help reduce greenhouse gas emissions from wastewater treatment plants via standardization of data collection and benchmarking of utilities.

5. Water data for clever investments

Water systems require significant investments in water infrastructure. A better prediction of lifetime and predictive maintenance can save society considerable costs. Decisions about water investments are often made on a weak foundation. However proper data can enhance insights and increase the value of long-term investments. By liberating pipeline data, ensuring data quality, and promoting data accessibility, we can establish a governance structure to maintain data quality and aid knowledge-based investments. These challenges are addressed in our use case 1 about automated reporting.

6. Water data for circularity

The circular economy concept has broad impact on all aspects of a water utility impacting investment, operation, and mission statements of a water utility. Important elements are to ensure that we minimize water use and water pollution as much as possible. For example, by circulating water and extracting resources from wastewater. With new energy solutions, it is also necessary to consider how we utilize treated process- or wastewater as a resource in industrial symbioses, e.g., with the emerging Power-to-X facilities. Water reuse is important to save water in the industry sector, to reduce energy consumption, and transition to a green economy.

Digitalization a Danish stronghold



SMART WATER
DIGITAL MONITORING

Expect... **AVR**



WHITE PAPERS FOR A GREEN TRANSITION

Digital transformation of the water sector

Highlight publication

INSIDE THIS HIGHLIGHT PUBLICATION

- Transforming water utilities for tomorrow
- Achieving water sustainability through strategic digital transformation
- From data to decisions



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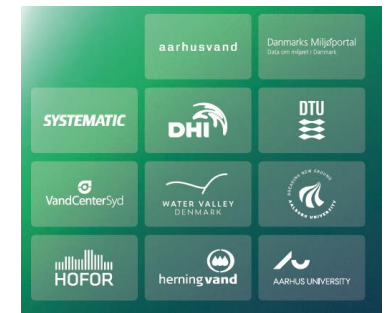
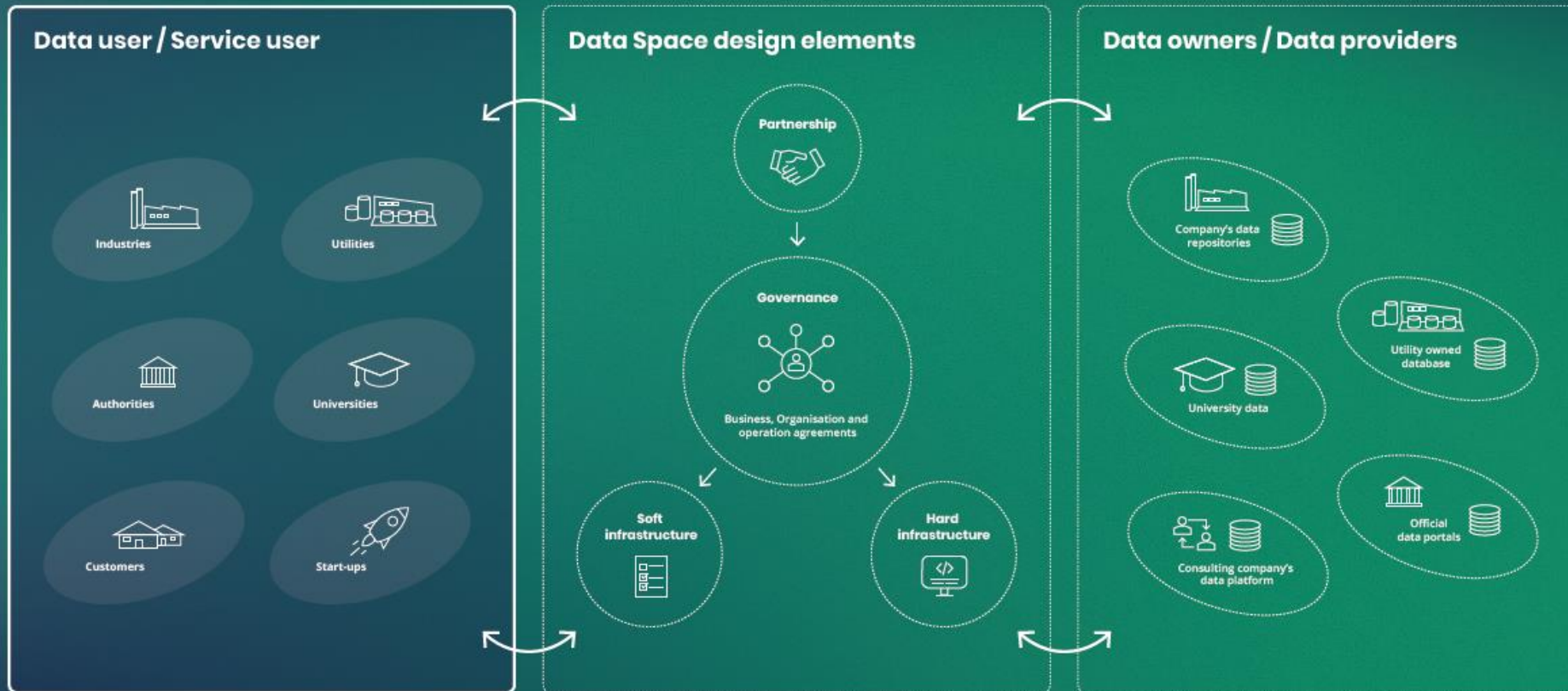


Leveraging innovation and optimization through access to data

Design model for the Water Data Space project



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[Water Data Space Project read the report](#)

All dressed up, but...

**Build up of competencies
Water domain meets IT
domain**

**Utility data is currently stored
in different systems and
different formats**

**Scaleups & SMEs lack an
overview of where to find
and access data.**

The ownership of data?

**High complexity, critical
infrastructure and GDPR**

Lack in trust of data

**Incentives and
business models**

Recommendations from the Water Data Space work

1. There is a need to set up **common data standardization** nationally or at EU level – but funding will have to be allocated. The way to elaborate standards must be done via best practice in the water industry
2. We need to **develop regulations and infrastructure** for data sharing.
3. There is a need to **identify intermediaries** to manage the Water Data Space. A data space should be managed by an intermediary actor with both IT and governance capabilities to operate the data-sharing infrastructure.
4. First-mover cooperation should be supported via **innovation projects and partnerships** capable of focusing on data spaces as a tool for trust-based and secure data sharing.
5. Public relations work is needed if we want authorities and/or utilities **to prioritize the creation of a Water Data Space** and to allocate funding to it. Water is currently not viewed as a strategic sector in the EU digitalization strategy. If this does not change, there is no incentive for water utilities and the water industries to share data – this will delay innovation for the digital and green transition.
6. A Water Data Space should be organized through **a decentralized infrastructure** with data placed in different places and owned by different actors, visibly and accessibly.
7. A Water Data Space should be clearly regulated to enable **FAIR data-sharing practices** across the large variety of actors involved in the design, operation, planning, development, and innovation of water systems.



*You cannot understand fully the value
creation of data sharing until you
actually start sharing data*

Project Manager, Utility from Water Data Space Stakeholder Analysis

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