Panel Discussion Digitalisation of the water industry, Moderator: Kala Vairavamoorthy, IWA

Tuesday 14 January 11:30-12:10

The panel discussion started with two presentations on **Digital Water** by **Kala Vairavamoorthy** and **Digitalisation of the water sectors in China and challenges** by **Xiaodong Wang**.

Digital water – Kala Vairavamoorthy

- Smart by design, and smart use
- Circular economy – smarter in how we use water
- Smart control –
- Manage the systems in more clever ways, drivers:
    - Lower cost
    - Regulatory compliance
    - Workforce
- Sensors – smaller, cheaper, measure a lot more things
- A higher volume of data is created, data needs to be processed
- Integration of data and sophisticated analysis
- Need to consider the entire value chain – not easy now, as the equipment is quite old
- We need a systems perspective of the water cycle – see the value in greywater etc
- Connect the dots
- All different sectors of a city are optimising, connecting these different sectors is important, water is an important part of this
- Most are currently on the Opportunistic section of the Digital Maturity Curve (something happens, and we react)
- Currently working on data sources that can predict and intervene before something happens
- Connected assets, connected systems, connected customers, connected workforce
- DMC – In the Transformational section, new business opportunities will develop
- Smart toilet
- Water sector utilises very little of their data
- IWA – Digital Water Program – Digital Water Summit in Bilbao 2002 – Denmark 2020 Launch of major products –
- Cannot carry on with business as usual

Xiaodong Wang – Digitalisation of the water sectors in China and challenges

Water digitalisation water in China is on the rise

Challenges

- Incomplete data
- Data is isolated and not shared
- Goals of implementation of digital water is to realise the adjustment of enterprise management structure and management mode

- Potential solutions
    - Set up an effective informational team, in-depth information development work
    - Choose the right data development platform
    - IoT platform from Huawei Digital Twin from Beijing Water Group – Smart cloud
    - Number of water related companies are growing, there are always chances for SMEs
    - IWAs presence in China is important
- Cyber security
    - Risk management is not sufficient
    - Function of defensive facilities are not used efficiently
    - Hacker attacks
    - Weak awareness of information security
    - Network attack
    - Data validation

Panel members

- Pierre Berube – UBC, University of British Columbia
- Vitaly Gitis – BGU, Ben-Gurion University of the Negev
- Karl-Heinz Brandt - LINEG

Kala Vairavamoorthy - What are the challenges?

Karl-Heinz Brandt – We are able to collect data, but no chance of combining them. The challenge lies in integration. It's an evolution, not a revolution.

Kala Vairavamoorthy - What are the low hanging fruits in term of digitalisation, and/or 4 gains for digital innovation in water thinking?

Pierre Berube –We are involved in using data to optimise systems, and gain information from the wealth of data, but customers are still reluctant to let the technology gather the data, allow the information systems to do the control. Governments have to allow their information systems to do the control, rather than inform the people that control the plants. Leaders, engineers are the catalysts that will make this change

Kala Vairavamoorthy - Utilities operate in a silo world. How, as a sector, are we able to overcome those difficulties?

Vitaly Gitis – I've been involved in digitalisation mainly to gain data access from water companies to conduct our research. In Israel the main problem is monopoly, and they are unwilling to share the data. Should instead look to grow as a sector with open source and a modular approach.

Kala Vairavamoorthy – IWA sees that there are a lot of external people, particularly from IT (Google, Microsoft etc.), that are interested in the opportunities that the water sector provides. The energy sector has examples of disruptive tech, but not in the water sector. What is your view on the relationship between those who develop the technology and products, vs the water sector that can be slow and conservative?

Karl-Heinz Brandt – in Germany it is impossible to collect and connect data from different areas. It comes down to the people who are communicating the need for change.

Pierre Berube – People are essential. Students that are coming now know the terminology and they know IT, and expect things to be implemented. When these students are in leadership positions, we will see changes.

Questions from the audience

Q: Bjørn Kaare Jensen – Who should make the investments?

A: Kala Vairavamoorthy – someone has to take the first jump, external providers have come in and provided solutions for people who wish to control their energy use in their homes, consumers easily provide information.

Q: Roland Kallenborn – A lot of information can be gathered from digital systems, what about security?

A: Pierre Berube – Hackers, but also unintended consequences that we don't know about yet. Ex. Quality -> age

A: Karl-Heinz Brandt – We are attacked 300 times daily, we have to separate systems from the internet, and open data only for a short time, to limit the possibility for cyber attacks

A: Vitaly Gitis – We simulated cyber-attacks on the water net in Israel, revealing that all are prone to security issues. There is a real concern about vulnerability.

Kala Vairavamoorthy – Now that we can control our home when we are away, a lot of data about the household is out there. Whose data is it? Re: Facebook. If we start monetising data, we also need to think about the boundaries of data in the governmental and personal sphere.

Comment from **Torleiv Bilstad**: All water is good water; we need to change the word "wastewater" and get rid of the negative connotations because wastewater is a resource.