



HVAC goes IoT - Smart water systems for sustainable buildings

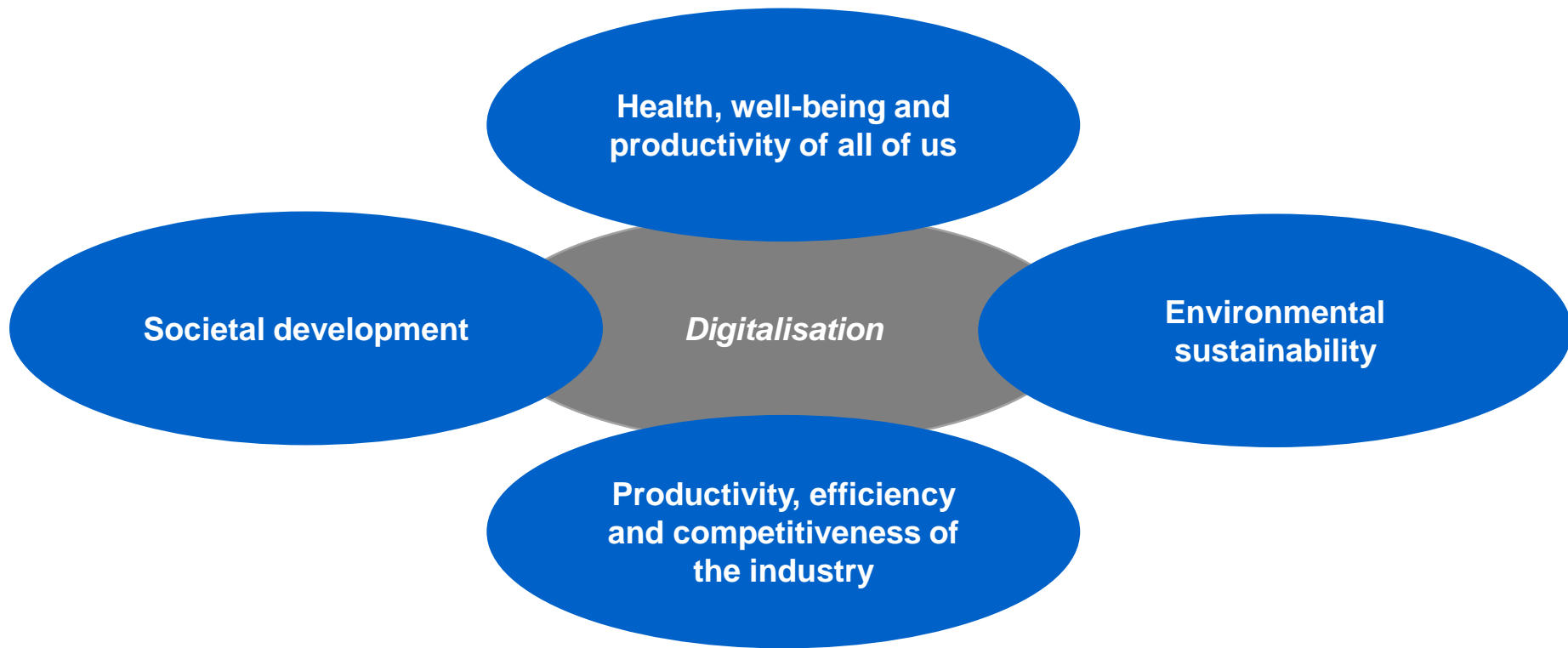
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Future of construction in a nut shell

Construction is not important, the built environment is.



Shift of digitalization focus from construction process to asset performance

Cost (energy,
water, waste
management,
etc)
Longevity
Damage
prevention
Etc etc

Owner:
Return on investment

User:
Service level

IEQ
Accessibility
Security
Safety
Etc etc

Asset performance management, combining BIM,
financial models and sensor data etc

Operation and maintenance

Commissioning

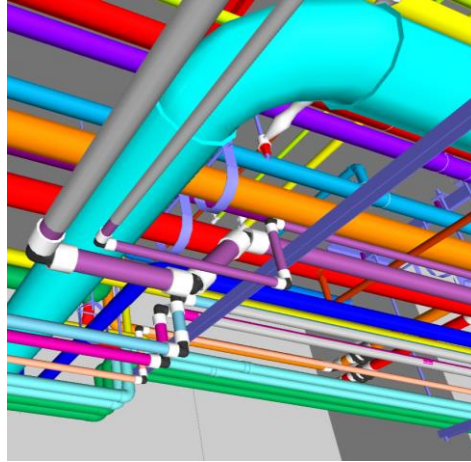
Construction

Planning & Design

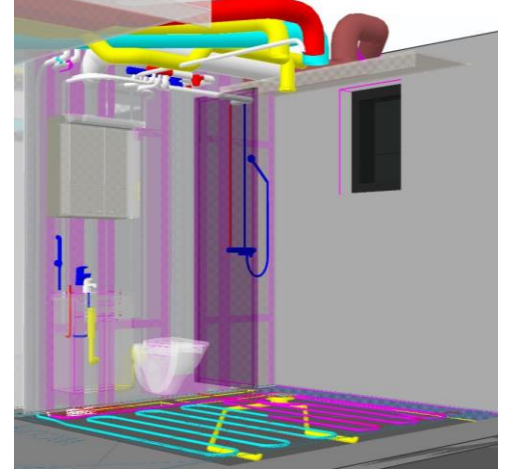
From components to systems to modules



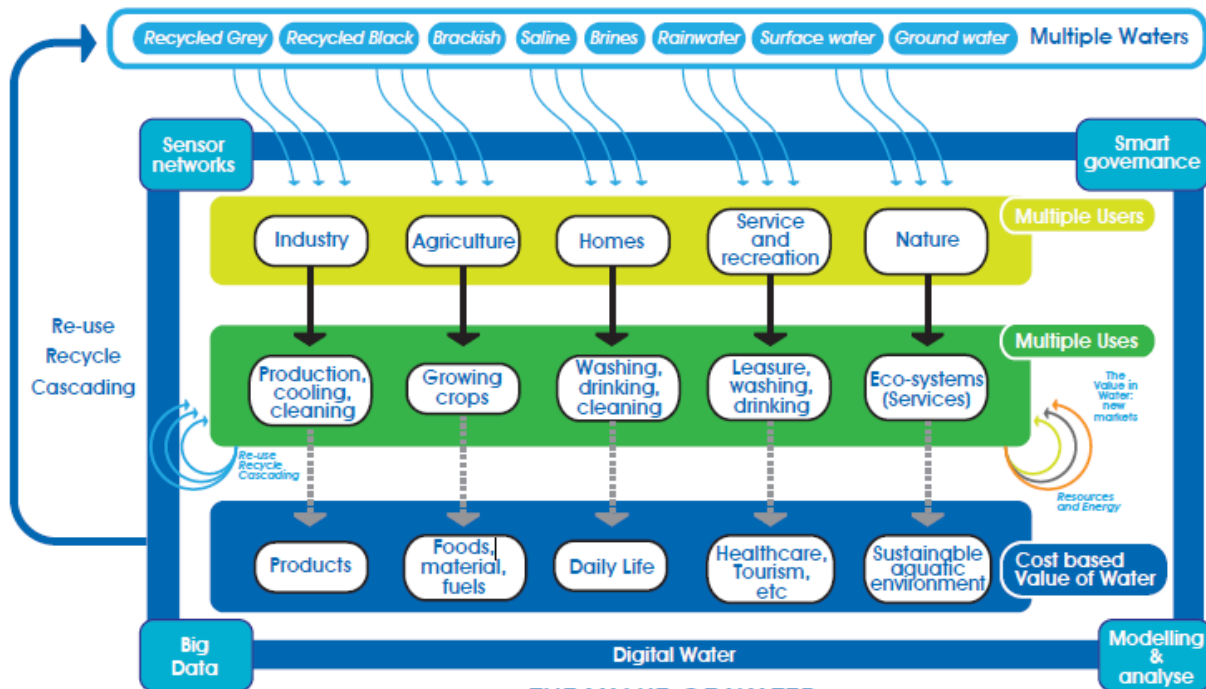
Parts



Solutions & Systems



Modules



THE VALUE OF WATER

Crucial for our economy, industry, society, nature and citizens

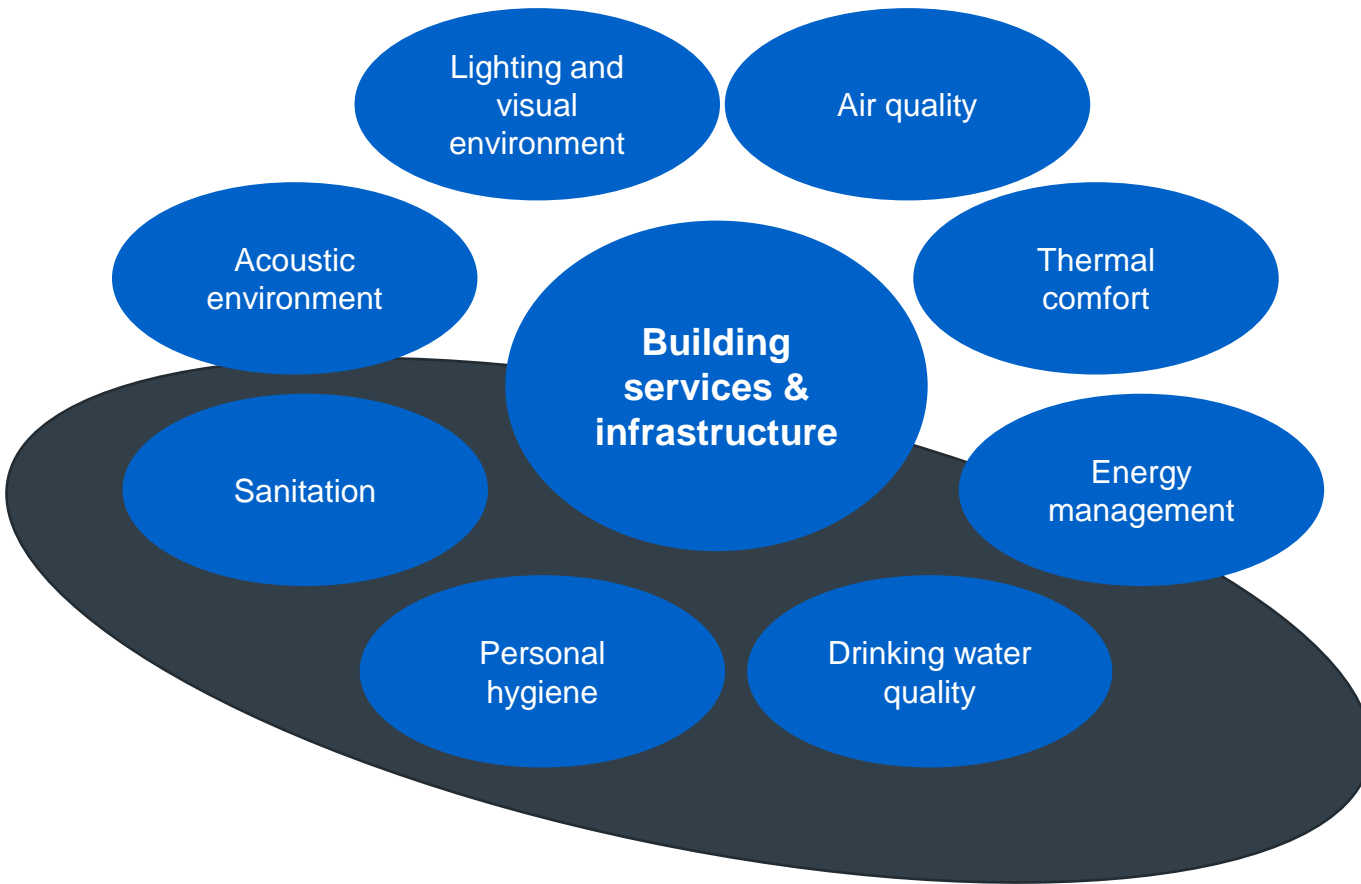
The Value of Water: multiple waters in a digitally connected water-smart society

Source: WssTP

**Digitalisation
enables a
water smart
society**

So what does Uponor intend to do?





Intelligent Water Systems

- Ensuring safe, hygienic and efficient drinking water delivery
- Matching right water source with use
- Conservation of scarce water resources
- Allocating costs fairly
- Eliminating property damage
- ...

Phyn Plus, your smart water assistant + shutoff.

PROTECT FROM DAMAGE

The most damaging leaks happen when you aren't there to notice. Phyn Plus can turn off your water automatically and the Phyn app provides a direct line to your plumber.

UNDERSTAND POTENTIAL LEAKS

When Phyn detects a potential leak it sends an alert with all the details you need to help diagnose the issue and fix with your plumber. Phyn Plus also lets you turn off your water from anywhere.

AVOID FUTURE PLUMBING ISSUES

In addition to constantly watching for leaks, Phyn runs daily "Health Checks" to uncover small issues you can address before they become larger problems.





SINGLE DEVICE

One device. Whole home.

Many water monitors require you to place multiple sensors around the home where you think leaks are likely to occur. Phyn Plus is a single device that protects your entire home's water system from a single location. Phyn Plus also connects to your existing Wi-Fi so you don't need to purchase an additional hub.

Measuring pressure waves. 240 times a second.

Phyn was developed in the labs of the University of Washington and Belkin, and in conjunction with Uponor. Phyn works by measuring tiny changes in pressure 240 times every second to fingerprint the unique pressure profile of each water fixture in your home. This helps Phyn understand the subtle differences between a running bath and a burst pipe.



Municipal water network management back then and soon

No visibility to the water network beyond your central water treatment plant

YESTERDAY

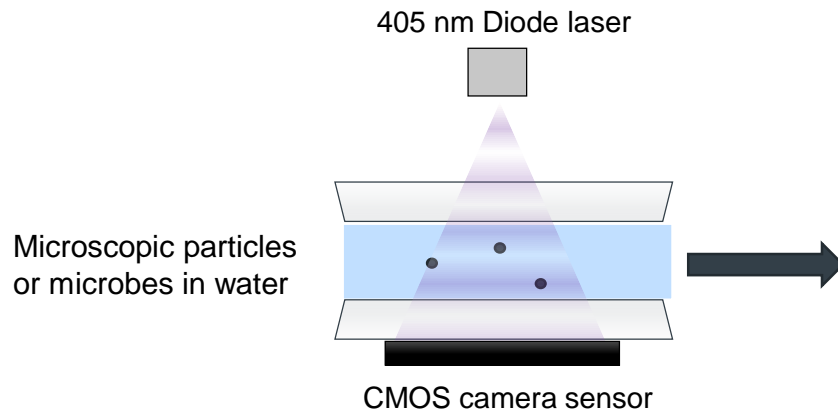
Random manual water sampling

TOMORROW

Real-time water distribution network performance monitoring

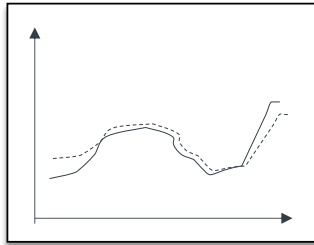
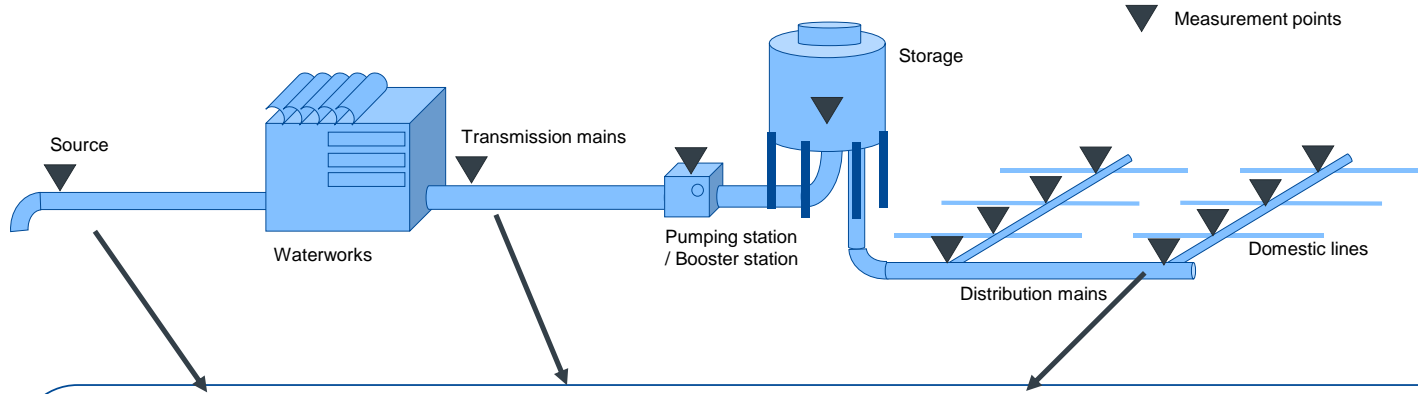
- comprehensive performance view of the whole network
 - with predictive analytics
 - at an attractive cost level
- created together with the customer

UWater sensor technology...

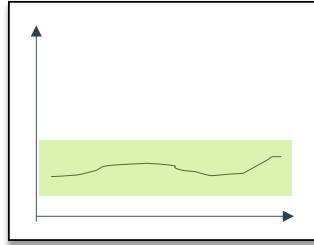


- On-line, real time imaging of mains water
- Particle classification
- Detection of contamination events
- Patents pending

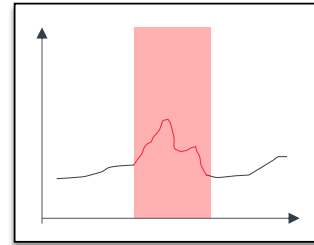
... enables cost effective water network monitoring



Comparison to historical data

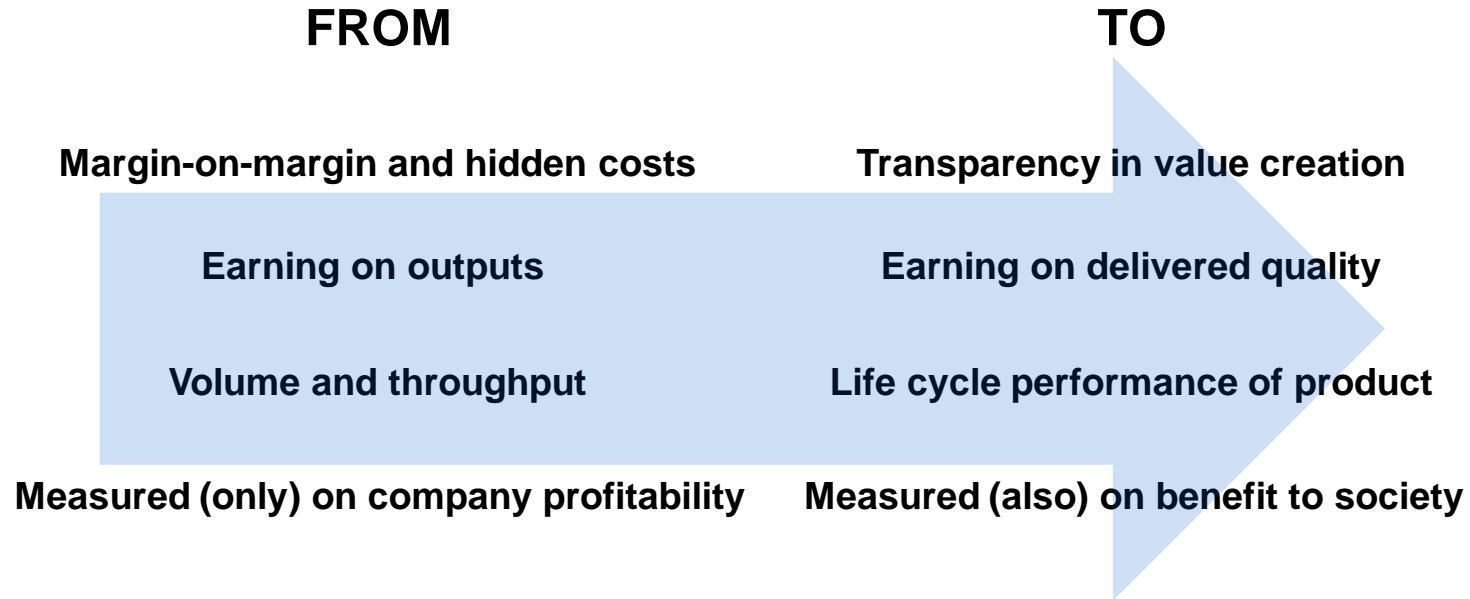


Comparison to tolerance limits



Detection of deviations

Business model and mindset change within the industry is still required



uponor



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Ilari Aho, March 20, 2018