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Thirsting for **Transformation**

Improve digitization experience with better engineering and engagement

– White paper

An RPG Company

The UK's water sector lags behind other industries when it comes to digital transformation. But it is in urgent need of innovation to deal with aging infrastructure, changes in digital behavior brought about by the pandemic, and looming climate change risks. This paper reflects on new ways to improve customer and employee engagement and experience which go hand in hand with large scale programs of core modernization and digitization companies are undertaking.

Water, water, everywhere?

The UK stares at an upcoming water crisis. Even as climate change risks threaten available supplies, demand is set to continuously rise due to population growth. Some projections estimate that some parts of the country are likely to face significant water deficits as early as 2050[1].

But other dark clouds loom on the horizon. More urbanized than the global average, the UK's increasing number of people and businesses is putting a strain on aging water infrastructure in cities. Research shows that without increased expenditure on infrastructure, the UK's 350,000 km of water mains and 625,000 km of sewers will begin to fail ever more often[2].

The case for transformation

Regulators, water NGOs, and the government are deeply concerned. Chief Executive of the Environment Agency, Sir James Bevan's alarming picture of the potential water supply-demand mismatch as the 'jaws of death' has drawn attention to the need for investments toward greater water resilience and efficiency. Waterwise, the independent water NGO, has set an ambitious target to reduce per person consumption to 100 liters from the current 143 liters, and the UK Water Services Regulation Authority (Ofwat) has mandated water companies to adopt innovative approaches to cut leakage by 16 percent by 2025 and 50 percent by 2050.

Industry too seems to have woken up to the need to transform itself. Thus, Water Innovation 2050[3], an alliance of 19 UK water companies has made a beginning with reinventing and reimagining the sector by 2050. Yet, much more needs to be done and the successive waves of COVID-19 and their macroeconomic impact have only added to the necessity.

Combined the UK has 975,000 km of sewers

Reduce water consumption per person from 143 liters to 100

Cut leakage by 50 percent by 2050

[1] https://www.gov.uk/government/speeches/escaping-the-jaws-of-death-ensuring-enough-water-in-2050

[2] https://www.waterbriefing.org/home/finance-and-risk/item/13845-new-report-says-uk-water-firms-will-need-to-significantly-increase-infrastructure-investment

[3] https://waterinnovation2050.org.uk

The boiling point of urgency

The pandemic has made transformation a pressing need to guarantee the continuity of operations, and many providers are already on the journey here.

On the one hand, workforce availability for repairs and metering has reduced, and there are increased expenditures on keeping customers, communities, and the people doing the work safe and healthy. On the other hand, due to increased work from home, consumption patterns have shifted from commercial to household customers. With all these factors converging, water utilities will require better management of demand and tariffs, better leak detection and prevention, as well as accurate billing.

Another, often under-appreciated need for transformation is the changing expectations of both customers and the workforce. Generationally younger, their novel, delightful interactions with digitally disrupted sectors such as online retail, banking, or ride sharing have predisposed them to expect the same levels of convenience from their utilities as well. Recognizing their growing demands, Ofwat has already incentivized excellent levels of experience for residential customers[4].

Every cloud comes with a digital lining

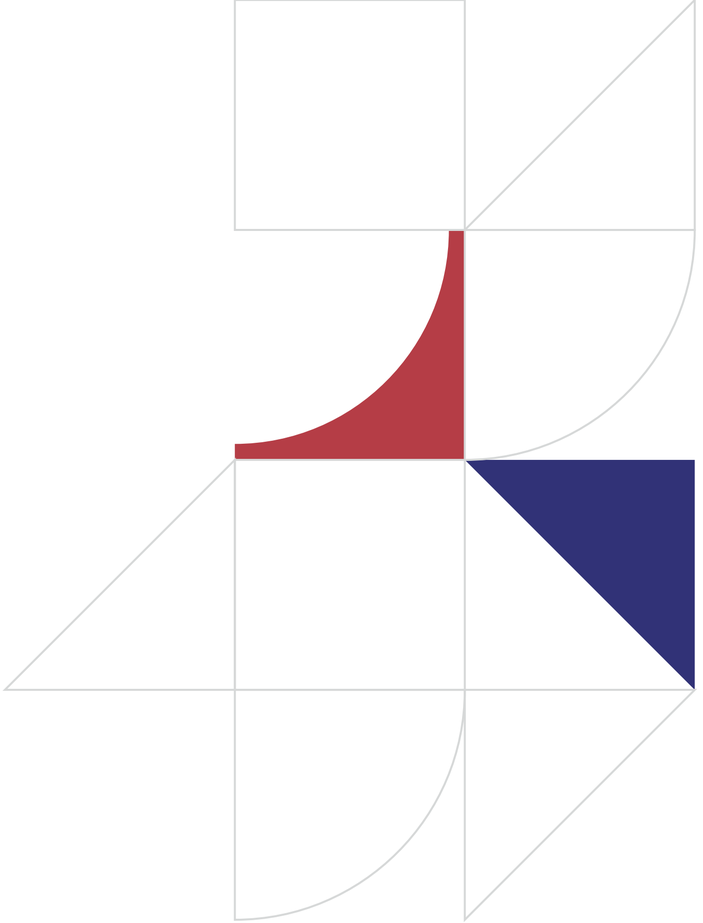
With these shifts happening rapidly, a more secure water future demands that the industry take urgent steps toward a new paradigm of water systems that are powered by digital technologies.

Digitally enabled water systems can bring about the transformation the industry desperately needs through improving water management processes, building long-term resilience to climate change, and nailing customer experience.

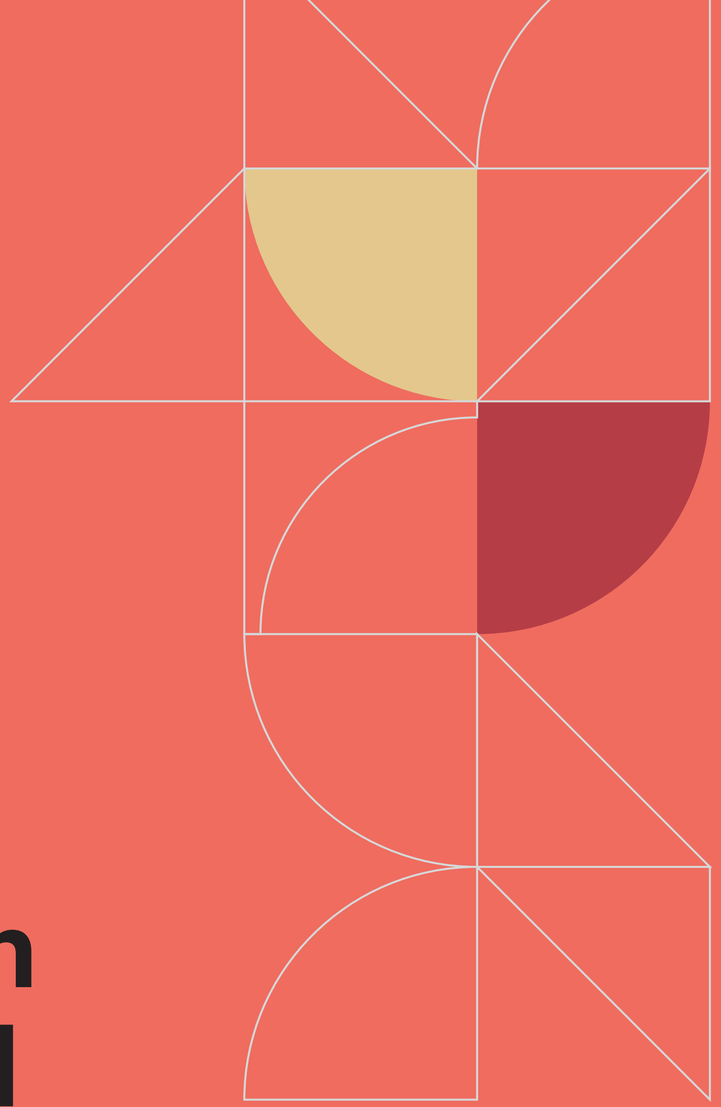
However, digitally enabled water systems alone are not enough to hook customers into, and make them care about, an ecosystem where they cannot choose their providers.

The fundamentals of improved user experience and technology are a prerequisite for change but are not the end state – more needs to be done to make water customers and employees interested in saving on water. One way that this can happen is by moving toward a gamified water system which promotes advocacy.

[4] https://www.ofwat.gov.uk/publication/customer-measure-of-experience-c-mex-guidance-for-the-2020-25-period/



Here’s a few ideas on **how this can be achieved**



- **Harness behavior to provide motivation**
- **Create shared economies and opportunities**
- **Invest in knowledge management**

Harness behavior to provide motivation

As water companies move toward digital self-serve and payments, one way to capture the hearts and minds of customers is through creating engaging content experiences. Today, few consumers feel an emotional connection with their water providers, and many have had smart meters forced upon them.

Going forward, with a strong digital baseline, water companies could educate consumers on their water usage and the implications of it. This could contribute toward guaranteeing a sustainable water future and helping water companies meet Ofwat targets.

A soft touch could be tying content to incentives for regular monthly meter readings in either analogue or digital form — promoting more accurate reporting, cost saving, and better water demand forecasting.

A supporting strategy to enhance content and the education it could provide is introducing gamification to support behavioral change. Based on Fogg's behavioral model for a person to perform a behavior, they must have the ability, motivation, and an appropriately timed trigger.

If we imagine the water companies' customer application powering a post code lottery where you see your neighbors water usage and compete against them, genuine change in consumption behavior could be created. Combining these ideas mean customers become frontline fighters in the battle for sustainable water futures.

Create shared economies and opportunities

By introducing IoT or more low-fi solutions like QR codes into built water environments, water companies could help promote a shared sense of water economy.

For example, if people were able to report leaks or sewage issues at the click of a button, and were rewarded for doing so, water companies could save money on expensive manual and digital monitoring and on the cost of leaks by reducing the gap between reporting an issue and that issue being fixed.

Another way for water companies to think beyond the digital baseline is to consider forming an ecosystem of connected partners from plumbers to drain experts, kitchen, and bathroom fitters through to water filtration providers and beyond. These partnerships could be lucrative if bigger organizations were onboarded, and they could also support local trade for smaller providers.

This benefits customers, as rather than having to make lots of different journeys, switching between browsers and applications, people can have connected journeys.

By following these steps, water companies can capitalize on the bounty of opportunities connected to water. They can also have a foothold in creating more shared economies that lead toward community building and more sustainable habits holistically.

Invest in knowledge management

Aside from aligning employee experiences, and the tools and systems which underpin them, one future facing opportunity to promote the safety and security of the water system comes in the form of creating knowledge management systems that capture the know-how of employees. This is particularly pertinent when considering workforce aging with knowledge being lost every time somebody leaves the business.

This applies to digital and non-digital tasks however, with increasingly digital means of measurement and service, people are less exposed to work in the field. Despite this way of working promoting more effective water management, the system still needs physical management. What will be required to transfer this knowledge and secure it for the future are knowledge management portals which go beyond word of mouth.

If successfully built, these knowledge management gateways could then be white-labeled and leased to other water companies or those in adjacent industries who might benefit from this data. It will also power an employee's ability to self-serve and problem solve in a more effective manner.

Bottling it up

Digital is essential for the future of water and for the excellence of service delivery to customers and employees alike. Digital's manifold benefits will contain not only physical losses such as water leaks and pipe bursts but also commercial ones due to metering losses or inefficient demand management.

Taking a broader perspective, as nations across the world target meeting the United Nations' Sustainable Development Goals (SDGs) by 2030, there will be a growing demand for digital water solutions in congested, urban areas and water-challenged regions. Utilities already adept with leveraging digital platforms will be ideally positioned to enter and serve these markets, ensuring the critical availability of water and sanitation for billions all over the globe.

Thus, as they work toward a more secure water future, water utilities will need to build innovation ecosystems with start-ups and water technology accelerators as they begin exploring innovative platforms and new technologies. Harnessing the power of these intelligent systems will require challenging existing paradigms, turning customers and employees into advocates, embracing a disruptive approach that is data-driven, and working together with all ecosystem players in close partnerships.

[5] https://sdgs.un.org/goals/goal6

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