

UTILITIES SECTOR PLAYBOOK - WATER

# THE NEXT PHASE OF DIGITAL TRANSFORMATION FOR WATER UTILITIES



MANDO

# FOREWORD

For the water sector, the challenge of driving and responding to change is as old as time. When the first-known dam was being built nearly 5,000 years ago near Cairo in Egypt, the Sadd el-Kafara (“Dam of the Infidels”) was to contain and channel around 0.5 million cubic metres of water. However archaeologists believe this monolithic project was still under construction when events overtook it and it was destroyed in a flood.

Of course, since then our knowledge of design and construction has improved immeasurably – even incorporating innovations like hydroelectric power stations into dams the Egyptians could only have dreamed of – but now in different ways companies in the water sector still risk being overtaken by events beyond their control.

Today, for water companies concentrating on the early delivery stages of the current regulatory cycle, a flood of new challenges are arriving in the form of environmental, social and governance pressures; driven by the sustainability agenda, the pandemic, and political priorities.

At any stage of business life, these challenges would be enough, requiring significant focus and investment of money and people resources. However, most water companies haven’t fully realised the last transformation, the one that perhaps holds the key to many of their current, short-term and long-term survival needs... their digital transformation.

Water companies are challenged with getting to grips with digital technology and associated customer expectations faster and more effectively than they have done so to date. Not only to survive and thrive in the digital age but to maximise their positive impact on their people, communities and on the planet.

In this paper we look at **five key problems** and the underexploited digital initiatives that water companies can focus on, to engineer change within their own organisation and build a more digitally competitive business. These initiatives are not second nature to most businesses, but they are ones that water companies need to capitalise on – and quickly – to address the growing challenges in this sector.

The water companies that get this right will deliver agility, measurably better results for customers and regulators, and create business value for shareholders. Those that don’t – like the infamous Sadd el-Kafara – risk being overwhelmed and consigned to a footnote of history.



**Mark Simpson**  
Sales & Marketing  
Director

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## SECTION ONE:

# The problem with projects

Project management practices have been deployed into every industry, and date back to the construction of the great pyramids of Giza and the Great Wall of China, in 2570 BC and 208 BC respectively. These practices and methods have been highly effective for most of our history.

If you're building a pyramid, a wall, or even the Sadd el-Kafara dam, then using a traditional project approach makes sense. You want to build a 'thing' and you're likely have a budget and a timescale to achieve it in. If you deliver the 'thing' to cost, time and quality, you call that a success, you disband the project team and you move on.

Projects are great, but they often focus on the output, not the outcome.

What if your goal is to provide the fastest and safest route across a large nation? Would you still build a great wall to walk along? What if the wall could be made faster and safer? What if you relied on seeing how people traversed the wall, to understand how it could be improved?

The Great Wall of China has been improved many times over the past two thousand years. In fact, very few parts of the original wall remain. The problem is that these improvements have been made by different workers, in many cases different dynasties, each one needing to understand how the wall was built originally to try to modify it in some way; requiring more effort and delivering lower value than could have been achieved otherwise within the time and money available.

Approaches like this are still being used in many cases to deliver digital projects today. In some cases that still makes sense, but many businesses are losing the opportunity to deliver value more quickly and cost effectively.

Crucially, the principle of **'Build something and move on'** is no longer viable in the digital age, because nothing is ever 'done'. You can always make the wall faster and safer and if you don't, then your competitors will. You can always make customers happier, more educated, and you can always lower their bills and provide a more streamlined, simplified, inclusive, or enjoyable experience.

## Product Mindset

The key to this is moving from a project mindset to a product mindset. Being product-minded enables agility, responsiveness, innovation, and ultimately greater benefits. Being product-minded means being clear about your goals, listening to and observing your customers, and assembling a team of people who can iterate to improve the value that your customers get from you.

## PROBLEM SPACE

**Projects have a clear start and end date, but customers' needs change all the time,** so by the time you're finished, customers may want or need something else.

**Projects deliver outputs not outcomes.** A project delivers a thing e.g. a 'cost calculator' rather than an outcome e.g. 'reduce customer billing complaints'. Success is often defined as completing the project on time and on budget, not on solving the underlying business problem, which makes it harder to prove ROI.

**Projects are not business as usual,** so delivering them provides constant disruption to day-to-day activities.

**Funding only covers the lifecycle of the project** – but what if you've not solved the problem? What money is available to try again?

**Context shifting** – people don't stay close enough to the problem for long enough, making it difficult to truly uncover the customer need and the ideal solution.

**A study carried out by Puppet on the State of DevOps in 2020 found that a product mindset is integral to scaling internal productivity.** They cite that 72% of organisations with low developer productivity also have a low level of product-orientation, while only 28% of these have either high or medium level of product orientation. In contrast, 81% of organisations with high developer productivity have either a medium or high level of product-orientation and only 19% have a low level of product-orientation.

## ACT NOW

**Organise your digital business capabilities into products.** Examples include creating a 'Moving home', 'Customer billing', or an 'Incident management' product. If that's too complex, then start with a 'DXP/CMS platform' or 'waterco.com website' product to build momentum and a culture of iterative product development into your ways of working. Whatever makes sense for your business, do that. Ideally a single team can be autonomised and empowered to deliver against the product roadmap.

**Create a vision, a roadmap, and a set of 'business-aligned' KPIs for each product.**

Work out how to prove / measure the benefit of the work you are doing, and rigorously report against that rather than focusing on project delivery metrics.

Get funding for 12 months of build, run and improvement activity against that product. Assemble a diverse team of people who can work and deliver on a consistent cadence.

## SECTION TWO: The problem with Monoliths

About 10 years ago, the leading content management system providers began a journey to expand their offering beyond *content management* and into *digital experience management*.

They started to acquire new companies and capabilities and integrate them into their platforms one by one, some successfully... some less so. They were pursuing a **'best of need'**, over a **'best of breed'** approach. The idea being that most businesses do not need the full capability set of an email marketing or marketing automation tool, just the best 10%. They were building what has today become known in the industry as monoliths; all-in-one solutions that enable users to store, manage and present content effectively across channels. While effective in isolation, these solutions require a sophisticated ecosystem of native plugins and partners to maintain, and upgrade paths can be complex and costly.

In parallel, digitally native technology firms like Amazon were adopting an API-first approach to their technology architecture, removing any technical dependencies that were hampering them from relentlessly innovating and improving the customer experience. They started to build experiences on a variety of channels, each one optimised for their specific customer use cases. Customers loved them, kept coming back, and so these businesses – along with other tech giants – enjoyed explosive growth.

The 'composable' nature of their architecture and a product-mindset meant that they could be truly agile. They could develop and improve certain aspects of their digital experience in response to changing needs of customers without being delayed or causing delays to other product teams. This enabled their businesses to unlock value for customers more quickly and at an overall reduced cost and then reap the benefits of that.

**"Imagine having to turn off the entire water network every time you wanted to upgrade or replace an asset?"**

### Composable technology architecture

Every business benefits from being more agile and more digitally mature. A composable technology architecture makes this easier, a monolithic architecture doesn't. That doesn't necessarily mean every water company should build APIs today or go 'headless' tomorrow. But it does mean setting agility and digital maturity goals within the strategy and working towards them at a pace that's right for the organisation and still meets the challenges that the water sector faces.



#### PROBLEM SPACE

It's difficult to isolate parts of the solution for development and deployment without affecting the entire solution.

It makes **organisation of your business into product teams more difficult**, due to an ever-growing list of technical dependencies and conflicting priorities.

It makes **scalability more difficult**.

It **hampers agility**, because if you're running multiple capabilities out of one interconnected solution, you either stick with it or replace it all.

If a part of it goes down, it typically all goes down.

#### ACT NOW

**Create a roadmap** to decompose your monolith, one part at a time.

Stop thinking about pages and site hierarchy and **start thinking about content models and taxonomy**.

Decouple the front-end from the back-end using a **headless approach**.

**Schedule periodic reviews of the technology market** to assess which products could be integrated into the platform in a composable manner.

# SECTION THREE: The problem with thinking you know what your customers want

The art of experimentation is not mature within the water sector.

Many water companies are still scared about experimenting with customer experience because of the potential impact on customer satisfaction, and the understandable organisational culture of resilience and prioritising safety. The fear is that by launching something that customers don't like, it will negatively impact their brand and incur penalties from OFWAT. This theory makes sense, until you look at the risk of not applying experimentation and innovation, which is amplified in the digital arena.

Experimentation does not have to be as big and bold as launching a new service or feature either. It can be as subtle as a change to a headline or call-to-action. Experiments are also controlled - you don't need to trial things with every customer, just enough to get the insights you need to make informed decisions.

These continuous improvements, derived from real life customer feedback, collectively contribute to much greater experiences for customers. Think about the number of improvements your smartphone has undergone in the past 10 years; Apple/Google Pay, Biometric Login, Autocorrect, to name just a few winners from the thousands of trials and tests conducted. All of these improvements have been rolled out and rigorously analysed, and while many have worked and remained, some were not great to begin with.

## Experimentation

Remember how error-prone Siri was when it first launched? And how about autocorrect? Or battery life? Features like these need real customer validation and interactions over time to gain data, improve them and make them fit for purpose.

Experimentation is a key element of customer experience in the digital age. Start slow and build maturity over time. But do it now.

**“If you double the number of experiments you do per year, you’ll double your inventiveness.”**

*Jeff Bezos*

## PROBLEM SPACE

It is human nature to design solutions that work for people like us. With the best will in the world, it's impossible to empathise with customers of all needs, **so our typical response is to design based on our own opinion**, and that may not work for others if we don't trial our ideas with them.

Every penny you invest into a project could be wasted if the **need hasn't yet been verifiably identified**.

Many customers don't know what they want until they see it and even when they see it, want it, and use it, they can still quickly realise they don't really need it. **How many apps have you downloaded then only used once?**

Too many people still see a **failed experiment as a business or personal failure**, rather than building new insights, and a normal and healthy part of successful innovation.

## ACT NOW

Before the next change / investment you make, ask yourself this question **‘Can I get a version of this live to test it with real customers, before investing all our money into it?’**

**Perform a small test to build a culture of experimentation.** Ask yourself, ‘What small element within my top 5 journeys could I perform an A/B test on?’ It might be as simple as changing the label on a button but run a test on it. The least you will learn is that a different variant performs better or worse than the version you have. What test could you run next?

**Time-box the experiment** and define a clear hypothesis and set of success metrics.

If you're building a new feature as part of the experiment, make it clear to the team that **you are not building a production-ready solution, but a solution which enables you to prove the hypothesis.** Manage the same expectations with senior stakeholders.

**Make case studies detailing the experiments that you have run and what you learnt from them.** Identify the cost savings from not having launched into large scale digital delivery on day one.

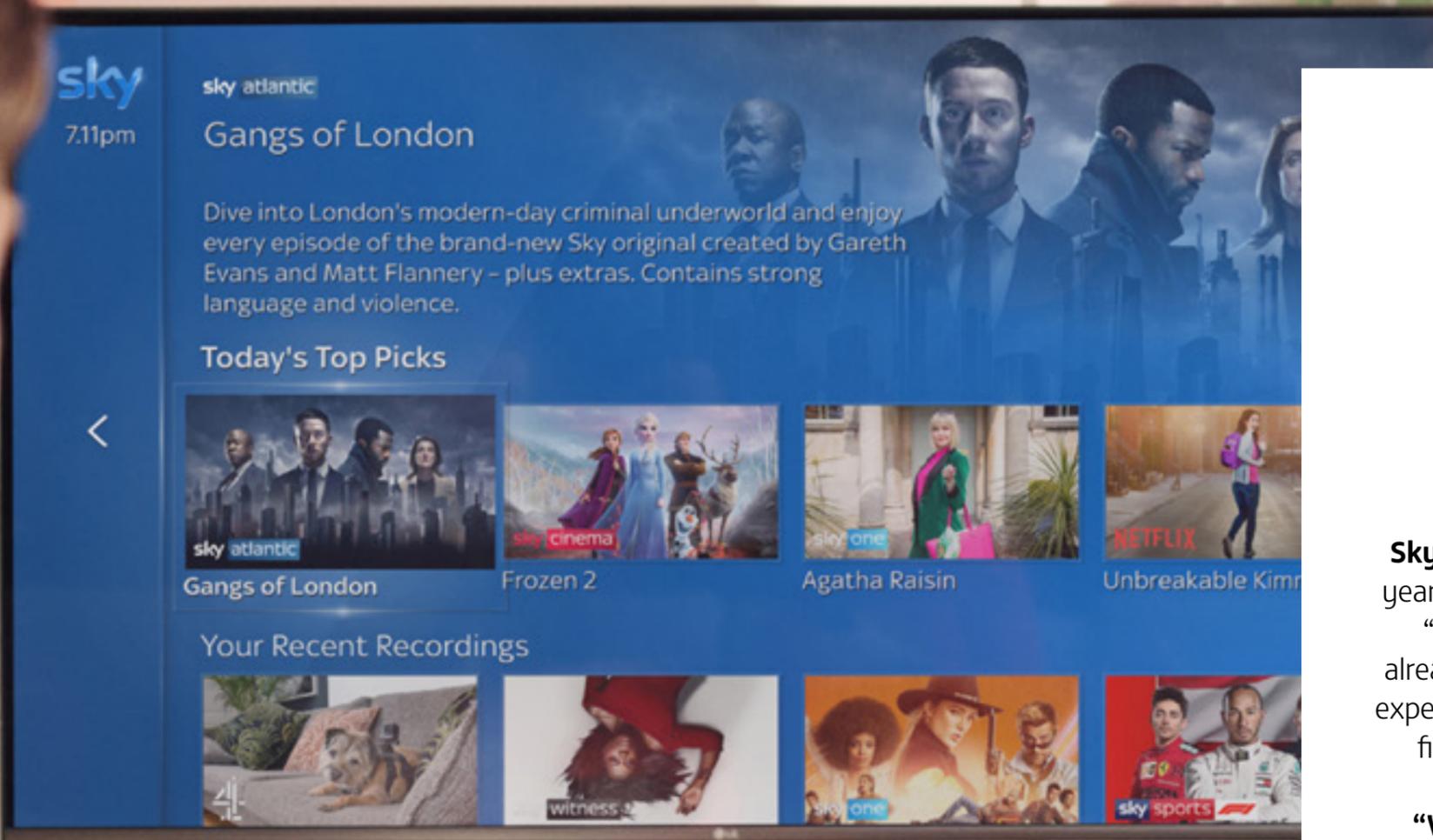
## EXPERIMENTATION IN MOTION...



When **The AA** launched their proof of concept (POC) website chatbot they were unsure whether anybody would use it at all.

Within the first 6 months the virtual assistant had handled more than 500,000 customer conversations, that's more than 2,700 each day. This created new learnings and hundreds of new hypotheses that they could test against.





## EXPERIMENTATION IN MOTION...



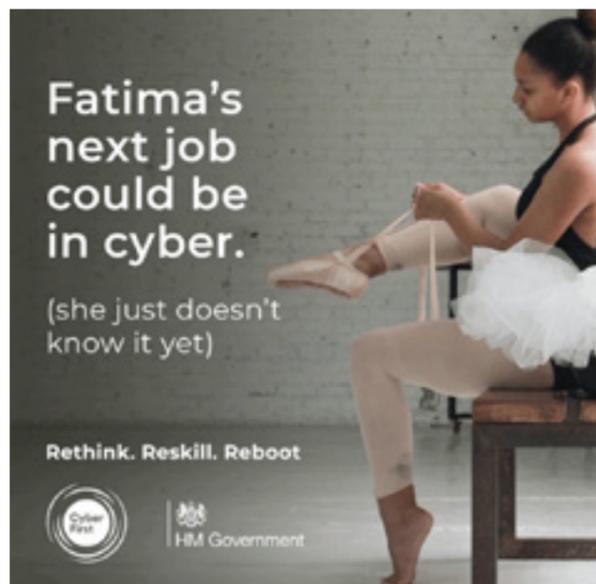
**Sky** has been testing and experimenting for many years. They recently had customer feedback saying, “Why can’t I reset my pin online?” when they already had a pin-reset journey on the site. Through experimentation functionality from Optimizely, they figured out how best to promote that journey.

**“We boosted engagement with that entire journey... about 40% uplift. We went from literally talking about it on a Monday, to it being live on Friday.”**

Abdul Mullick, Head of Digital Transformation & Simon Elsworth, Optimization Manger at Sky

## SECTION FOUR: The problem with people

Whilst the government's 'Rethink, Reskill, Reboot' campaign was somewhat misguided and ill-timed, its genesis was in the growing demand for digital talent in the UK.



Additionally, businesses need to invest more in both *consumptive* and *productive* digital skills. Consumptive means using technologies that have been developed by other people (using software), whereas productive means producing technologies for other people to use (developing software). Whereas consumptive can be as basic as using Excel and Word, productive can mean upskilling people with data & insights capabilities, agile delivery methods, coding, systems integration principles and cloud technologies.

### Digital Skills

To address the sector's challenges, workers within water companies will need to be able to both use and create with technology. Anybody watching a toddler use an iPad knows the ease with which they can adopt and master new technology. But businesses can't wait for those toddlers to get to working age, they need to invest in digital skills to support their current workforce to deliver value now.

It's estimated there will be a skills gap equating to **3 million technology jobs by 2025**, with more than **2 million of them in software development roles**.

That's a challenge for companies looking to invest in skills, because what might be in vogue today could be redundant tomorrow. It requires continuous training and development to keep up, because no-one can predict what the software development languages of tomorrow will be.

### PROBLEM SPACE

**The demand for digital talent is outstripping supply**, which makes it harder to move away from the 'as-is' and progress towards the 'to be'.

A study by Technation found that despite the impact of the Covid-19 pandemic, advertised **tech roles in the UK grew 36%** as of the June 2020.

The DoE's Employer Skills Survey predicted that **30% of skills shortage vacancies were** as a result of poor digital skills.

A 2020 academic study from Microsoft and Goldsmiths, University of London found that **69% of UK leaders believe their organisation currently has a digital skills gap, with 70% expecting to experience one over the next year**.

The best digital talent wants to work at the most digitally mature businesses, leaving those that are already behind, further behind.

### ACT NOW

**Review your team and look for opportunities** to boost productive and consumptive skills within it, supporting those individuals with external suppliers while you invest in training.

**Focus on developing data, problem solving and information literacy first.** Then move on to more advanced productive skills.

**Rethink your talent acquisition strategy** to seek opportunities for attracting people with more digital skillsets.

**Assign a person with the role** of increasing digital skills and talent within the team.

Hold an innovation day, which encourages people from across the business – and outside of it – to come together and **generate 'digital' opportunities against a problem brief**.

**Equip your team with more modern digital tools**, with an investment in training to use them properly. People hate working with out-of-date, unfit-for-purpose technology.

## SECTION FIVE: The problem with data

On average in 2020, we each created an estimated 1.7MB of data every single second. In the next 3 years we will generate more data than we did in the past 30 years.

While not all of this is personally identifiable information, all this data can be used in some way to better understand our interests, behaviours, and movements.

As a nation we're concerned about how much data we give up to companies through our online activity; however, that won't stop us from using our next coffee break to swipe through TikTok videos, Twitter posts, Instagram photos, or Google results, giving up even more information about what we're thinking about today. Within minutes, the targeted advertising and content kicks in... promoting that product we paused at for just a little longer than everything else.

It's a fine line. Consumers want personalised experiences, but they don't want their data to be misused.

The digital natives (Facebook, Amazon, Instagram) track every aspect of our browsing behaviour; time taken to scroll, what's paused on, for how long, where the mouse moves, what's clicked on, what goes into the basket. This detailed approach to data is what has made many of them so successful. Continuously feeding us with content we're more likely to consume, driving return visits, providing more data, and the cycle continues.

### Creating value from data

**So what's different about water companies... why don't they operate in this way? Is it an ethics issue, a technology issue, or a process issue?**

In most cases it's all the above, but more than that, it's the lack of a long-term strategy that directs where the demand is for data and how it will be used to continually improve customers' experience.

Many utilities companies still don't even track, report and use their website analytics effectively, let alone create a compelling and coordinated data strategy across data and organisational silos. Many still don't track the ROI of each digital initiative they implement, robbing themselves not only of that data but also the business case for future investment and progress.

Many water companies don't see the scale of the opportunity and in this scenario, that opportunity represents a significant threat. Companies born in the digital age, or those who are further ahead in their transformation journey will have the data and insights to target customers far more effectively and gain competitive advantage. For every business in the water sector this will have an impact... from interactions with the regulator, to their brand reputation, business value, and customer retention.

### PROBLEM SPACE

Many companies still have **data existing in different systems**, with little integration, no single source of truth and a lack of strategy.

The volume of **unstructured and siloed data leads to analysis paralysis** and the easier option of doing nothing with it.

The ROI of personalisation is compromised by a reliance on third party data.

The reputational **risk of getting customer data wrong is so large** it's often easier to avoid the risk and do nothing.

Water companies are coming under internal and external **pressure to collect and report data** pertaining to both environmental and social engagement metrics.

### ACT NOW

**Understand where the demand is.** What data do you need to collect to achieve your business goals? Quality over quantity.

**Audit your digital estate** for areas where customer data could become compromised, both in terms of privacy & security but also in terms of using it for situations the customer has not explicitly agreed to.

**Review your platform readiness** for integration and effective/secure data sharing.

**Explore zero party data** – where a customer intentionally and proactively shares data with you, especially as a means of powering personalisation.

**Review your data strategy** with a view on agility in responding to customer demand and changes in regulation.

**“If you have a password to anything online these days, you're a user, a product and a target.”**

*Paul Roehrig*

## Conclusion

The challenge remains for every water utility to increase their digital maturity – that is to become more customer focused, more innovative, more data-driven, and more agile. The other option is a slow, painful decline into obsolescence.

Being more customer focused can mean being able to understand customer expectations around environmental and social issues at a deeper level. Being more innovative can mean taking more risks and experimenting to uncover likes and dislikes. Being more agile can mean becoming more responsive to customer feedback and being able to reorient more quickly based on new information.

Customers want the experience of dealing with their water company to be as consumable as the utility they receive from them; omnipresent, reliable, rapid, and as easy as like turning on a tap. The often-unexploited initiatives discussed in this paper hold many of the answers to creating this compelling experience.

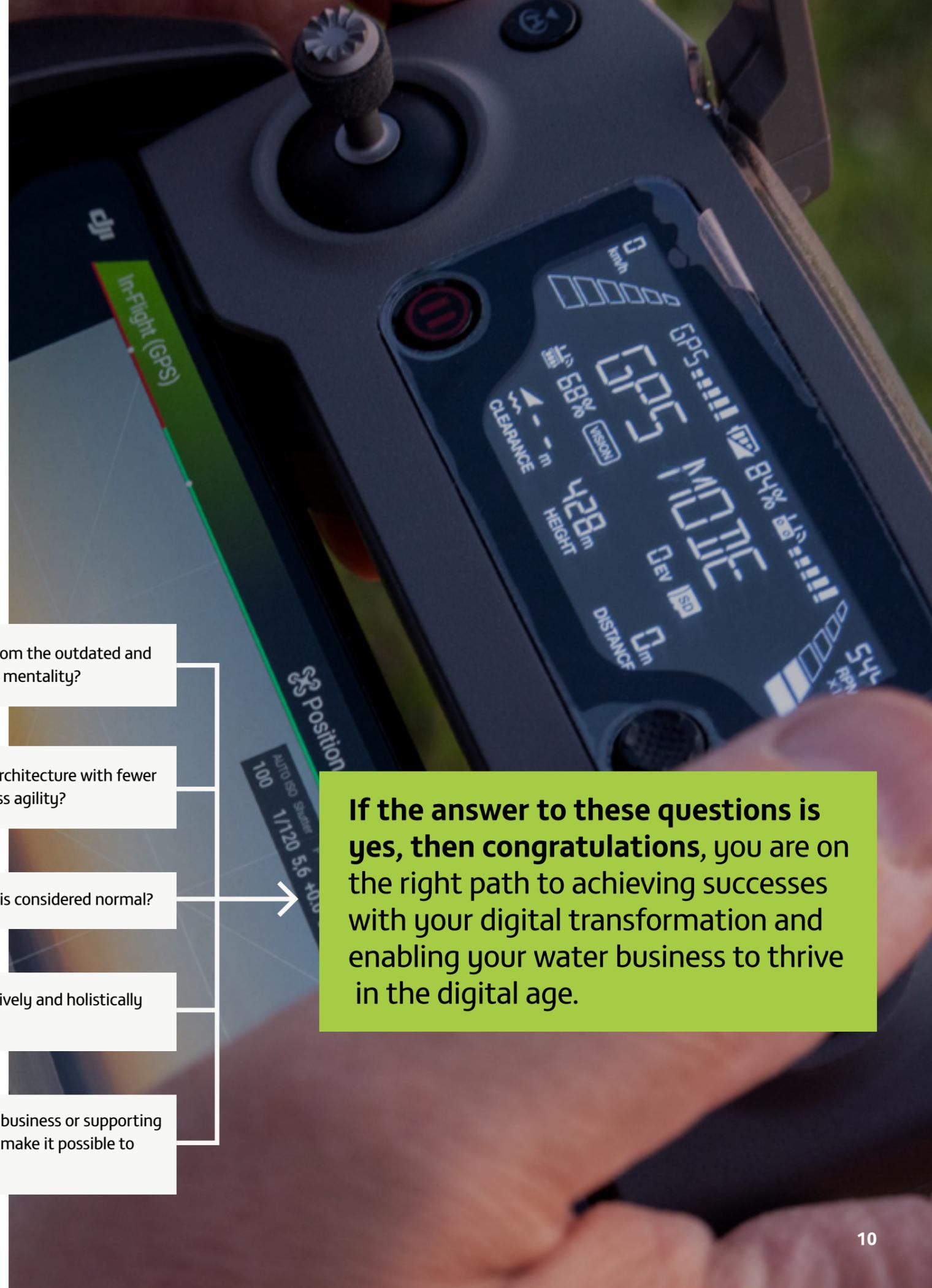
Does it require significant investment? Yes.

But the alternative for those that don't accelerate their digital transformation now to address the challenges of the water sector are far more costly and painful.

### Act now and ask yourself the question. Does your digital strategy:

- 1 Move you to more of a product mindset and away from the outdated and wasteful methods associated with a project delivery mentality?
- 2 Move you towards a more composable technology architecture with fewer technical dependencies and the platform for business agility?
- 3 Move you towards a culture where experimentation is considered normal?
- 4 Move you to a state where data is being used proactively and holistically to delight customers and inform progress?
- 5 Focus on the people and skills that you need in your business or supporting your business, to enhance your digital maturity and make it possible to realise the benefits of digital?

**If the answer to these questions is yes, then congratulations, you are on the right path to achieving successes with your digital transformation and enabling your water business to thrive in the digital age.**



# Case Study - United Utilities

United Utilities provides water and wastewater services to over 7 million people in the North West every day.

Mando has enjoyed a 12-year partnership with United Utilities, delivering over 5,500 days' worth of services. In that time, supporting their digital ambitions with advice and support on strategy & insights, UX, implementation, experimentation, optimisation, support and maintenance, and cloud infrastructure.

## While working with United Utilities, we have helped them to:

- Support a significant shift of customers onto digital self-serve channels, which has enabled United Utilities to comply with Ofwat regulations and reduce call centre costs.
- Improve customer experience with useful tools; from campaign sites about water safety and water usage, through to water quality calculators, safe dig applications, share price feeds and planned work updates – all developed and hosted within the Optimizely platform.
- Support their many stakeholders with digital strategies and microsites for several different parts of their business.
- Provide customers with access to their digital tools; through the provision of 24/7/365 support, maintenance, and managed hosting of their Optimizely platform and associated websites and portals.

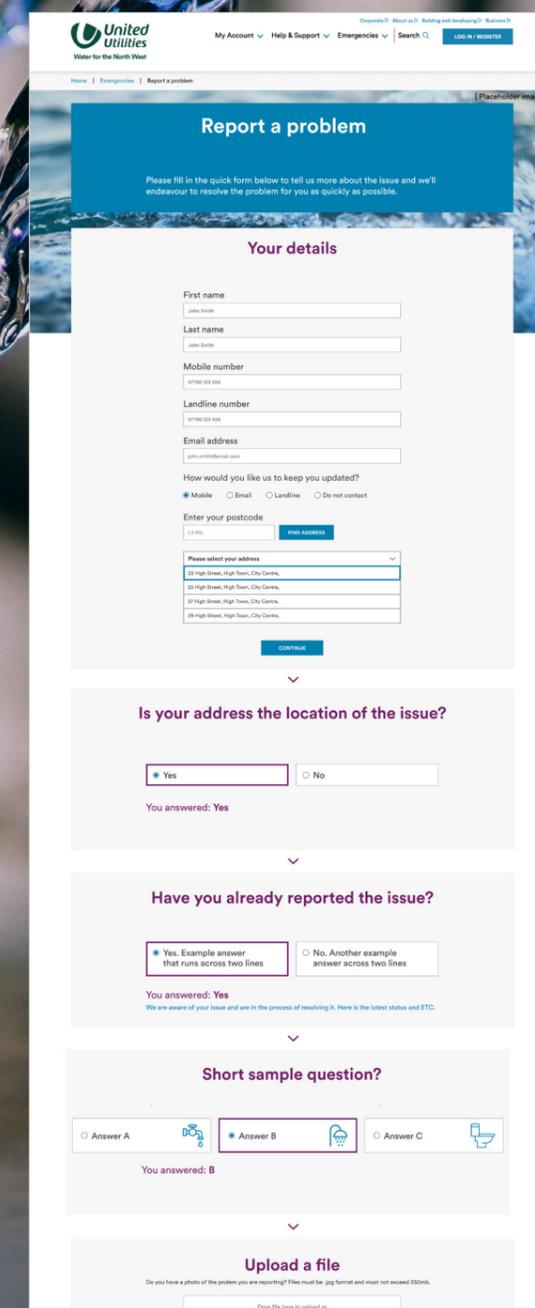
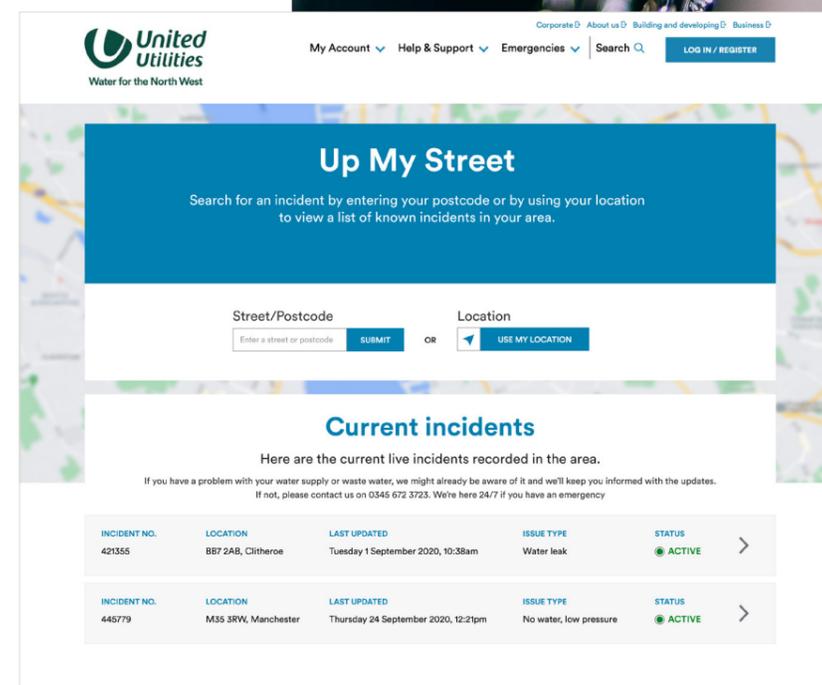
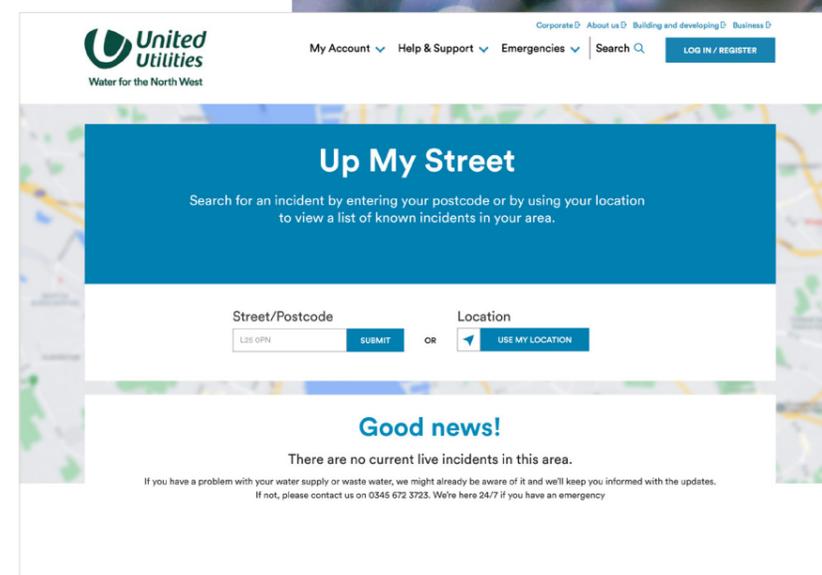
As part of our ongoing partnership, we continuously improve United Utilities' digital offering in-line with changing regulatory, business and customer expectations, leading to improved user-experience and higher goal conversion rates.

One example of this is with the website search feature, which was returning less than satisfactory results from several common search queries. This included 'postcode' searches and common requests like 'find my account number'. While a postcode search would rarely return any meaningful content at all, an account number search would provide a set of results which didn't offer an obvious resolution.

We worked with United Utilities to improve the feature using Natural Language Processing.

By implementing the Language Understanding Intelligence Services (LUIS), part of the Cognitive Services cloud in Azure, into the search engine we enabled the website to interpret the intent of customers' searches in real-time. Once the intent is recognised and understood, we are then able to interrupt the journey with a relevant feature or call-to-action; if the customer was searching for their postcode, they would be shown live current incidents, planned works and information on water quality.

Customers searching the United Utilities website for queries like their postcode or account number retrieval information, now receive an improved user-journey. This helps reduce frustration and improves the overall experience.



# This whitepaper has been brought to you by Mando in collaboration with Optimizely.

Mando are an Optimizely Gold Partner and have worked with the platform for more than five years. With multiple large utilities-based implementations running on the platform, we have in-depth experience of supporting business critical applications in a regulated world.

Contact us today to discuss how we can help you harness the power of Optimizely DXP, enabling you to better serve your customers via digital channels.



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