The multitude of challenges facing the water industry, including leakage and flooding, are being amplified by the regulatory funding squeeze that is reducing customer bills by an average of £50 over the next five years. To address this, water companies need to change the way they operate. AECOM’s Ian Small says the answer could be as simple as finding ways to get more ideas out of both the workforce and supply chain.

Water industry regulator Ofwat¹ has confirmed a £200 million² funded competition to encourage innovation, a recognition of the urgent need for change. Without it, the clean water and treated sewage we take for granted could be at risk, not to mention the increased possibility of flooding.

Implementing the sorts of “transformational innovation” Ofwat is looking for is not easy, especially in a highly regulated sector working with infrastructure that has been developed over centuries. But there is no choice: leakage, pollution, climate change and a growing and increasingly urban population are all putting huge pressure on resources.

To date, the industry’s track record on innovation has been mixed. It has invested large sums in research and development but has sometimes failed to turn that knowledge into value.

My experience championing innovation at AECOM suggests that often the answer can be found internally by finding ways to get more ideas out of your people. Ask your teams where they would like to see investment and how that could improve the way you do business.

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CREATING OPPORTUNITY FOR EVERYONE

THE FUTURE OF INFRASTRUCTURE

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THE INNOVATION CHALLENGE

Ofwat has made it clear that business
as usual is no longer an option. In
April 2019, the economic regulator
of the water sector in England and
Wales challenged the business plans
of fourteen out of seventeen water
companies, saying they had to do
more to “deliver for customers”.
The regulator wants companies to
switch their focus from just cost-
cutting — which has been the typical
solution to challenges such as rising
energy prices and water scarcity — to
transformational change in order to
simultaneously improve service to
customers and the wider society at
a lower overall cost.

Following the consultation in
July 2019 on an innovation fund, the
regulator announced as part of the
final determinations that it will hold a
collectively-funded competition. It will
be held at least once a year and will
be open to the 17 water and wastewater
companies, supported by their
supply chains.
The May 2020 consultation is
looking to resolve the outstanding
policy issues, including intellectual
property rights, the design of the
competition and safeguarding of the
funding. An interesting development
is the proposed pilot competition
where third parties will be able to pitch
directly to the companies for funding.

Ofwat is looking for improvements
in natural, social and human capital,
as well as looking at financial impacts.
The consultation document also
specifies that it wants companies to
“work more effectively together and
with their supply chain”.

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...the most innovative companies are
those who find effective ways to get
ideas out of their people, then act on
and implement the changes that make
sense. It’s also helpful to get people in
different parts of the business to talk
to each other.

At AECOM — where I’ve led
innovation in the water division and
now champion innovation across
civil infrastructure — I’m always
thinking about how to improve what
I’m doing, which is the area I’m most
qualified to judge. Figuring the same
was probably true of my colleagues, I
launched Mindblazer, a tool designed
to encourage ideas that support
technical excellence, innovation and
collaboration on AECOM projects.

Every three months we launch a call
for ideas through Mindblazer – with
a two-week window for submission.
Winners can be anyone in the
company. They are initially awarded 40
hours or the cash equivalent to build
something; if this proves successful
the idea is linked up with a team to
develop the technical idea, build the
business case, commercialise and scale.
We focus on projects that address a
burning need, rather than things that
would be nice to have.

Jeremy Hidderley, a data and
GIS specialist in our water asset
management team is always looking
for ways to automate processes to
make them more efficient. Wastewater
modelling has a lot of time-consuming
tasks, and Jeremy noted that his
modelling colleagues were often
having to repeat some of these tasks
in order to deliver a suitable model.
Across the business there are many
colleagues doing the same sorts of
things for different water companies.
He approached Mindblazer with a
proposal to apply machine learning
to the modelling process for the sewer
network. This allows modellers to
speed up repetitive tasks, leaving
more time to problem solve and
explore solutions. After winning
the prize, he developed a prototype
‘rapid model build’ tool which is being
developed further for Wessex Water.

...My job at AECOM is both
to encourage colleagues to be
innovative and to ensure that
innovation is effective. There is no
point innovating unless it improves
the way we operate, and we also have to be
careful when changing what we do that
we aren’t exposed to undue risk.

We also help our clients innovate.
We do this by generating ideas and
solutions though a range of group
events, either internally for clients —
as we’ve done with Highways England
and the Environment Agency, or in
partnership with other companies,
such as the CityHack18 competition;
an AECOM-organised event aimed at
finding ways to make London healthier,
more liveable and connected. We also
facilitate design thinking-led ideation
workshops, competitions and more
traditional consultancy approaches,
such as scenario planning, and advise
on ways to embed innovation in
businesses. By doing this we help
clients improve performance — the
ultimate goal of innovation.

CityHack is an AECOM-led technology competition that brings together computer programmers, industry experts and professionals to create solutions for a city’s most pressing challenges
INNOVATION IS ABOUT HAVING THE RIGHT PEOPLE IN THE RIGHT JOBS, LISTENING TO THEM AND ENCOURAGING THEM WHEN THEY MAKE THE CASE FOR CHANGE.

Informed by our experience, here are a few recommended ways to entice ideas out of your workforce:

**Challenge statements**
Identifying specific challenges is a good way of setting out what innovation needs to achieve. The challenge statements should be shared widely, both within the project team and to the wider organisations.

**Sources of ideas**
This process should be as open as possible: ideas can come from anywhere and anyone. They need to be shared, reviewed and refined to make sure that they will meet the project requirements. No idea should be immediately rejected, and a record of all ideas and their pros and cons should be kept as these can often trigger new or hybrid ideas that will be more effective than the original.

**Delivery team**
Ideas that meet the criteria for further investigation and investment pass through into the delivery stage. This will require a wide range of skills, which are unlikely to sit entirely within one person. We advocate a team of at least three people, who could be classified as follows:

/ The idea owner, and often the originator of the idea
/ The Chief Technology Officer, responsible for providing the technical skills to turn the idea into reality
/ The integrator. Often overlooked, the integrator turns the idea into a business by connecting the dots — and making it happen.

The team can be larger than this, and the roles and responsibilities are often blurred in an effective and mature team.

A November 2019 survey by UKWIR⁷ (UK Water Industry Research) of industry executives showed that innovation is important or extremely important for everyone (100 per cent said so). I don’t know how the questions were worded, but I saw very little reference to culture or organisational flexibility in the findings. In my experience, these are the crucial ingredients for creating an innovative culture: without them the technology barely matters.

In short, innovation is about having the right people in the right jobs, listening to them and encouraging them when they make the case for change. When it makes sense, companies should be open to implement these suggestions.