Driving transformational innovation in the UK Water Sector requires **behavioural innovation**

I am pleased to submit feedback to Ofwat in support of the strategy to drive transformational change in the UK Water sector. I have been involved with the sector for more than 25 years and latterly have been focusing on the behavioural aspects of innovation, collaboration and transformation. Through this work I have surveyed a wide set of people from across the sector who have attended events run by CIWEM, Twenty65 and British Water. The consolidated results from a relevant set of questions inform this response. I am passionate about supporting the sector to meet its challenges and would be pleased to discuss this further.

Garry Sanderson – founder of Visualyze Ltd – 20 September 2019

**Introduction**

From the responses to the two questions below it can be concluded that the view on the capability of the sector to innovate is mixed, but there is strong consensus that innovation is not happening fast enough to meet the challenges.

**The Water Sector is innovating fast enough to meet its challenges**

<table>
<thead>
<tr>
<th>Score</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=137</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

Respondees were asked to score the sector’s performance against a range of attributes, giving a score out of 5. The average of these scores is shown below, indicating that the best performing area is moving to a ‘customer focused mindset’. However, the lowest score, by some margin was given to ‘speed of innovation’.

This evidence clearly supports the need for the transformation in the nature and pace of innovation in the UK water sector. In short, whilst the sector does innovate, it is simply not innovating fast enough to meet the changing dynamics it is operating in, creating a gap in business performance potential that must be closed.

**Ofwat Question 1 – What are the main barriers to innovation in the sector and why?**

This is the most important question, and must be adequately addressed before designing interventions or mechanisms that seek to drive transformation. Respondees were asked to rank a set of barriers and enablers to innovation and the aggregated results are indicated below.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Barriers to Innovation</th>
<th>Rank</th>
<th>Enablers of Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>It’s always safer for individuals to do what they have always done</td>
<td>#1</td>
<td>An organisational willingness to experiment and take controlled risks</td>
</tr>
<tr>
<td>#2</td>
<td>Lack of incentives to innovate</td>
<td>#2</td>
<td>Collaborative working arrangements and processes</td>
</tr>
<tr>
<td>#3</td>
<td>‘Management’ getting in the way</td>
<td>#3</td>
<td>A learning culture</td>
</tr>
<tr>
<td>#4</td>
<td>Lack of clarity of the most important priorities for innovation</td>
<td>#4</td>
<td>Industry leading technical skills and expertise</td>
</tr>
<tr>
<td>#5</td>
<td>Issues with understanding and application of new technology</td>
<td>#5</td>
<td>Access to explicit funding for innovation</td>
</tr>
</tbody>
</table>

These results indicate that the principal barriers and enablers are associated with risk – both at an individual and organisational level. Issues such as funding, technical skills and technology were not ranked as highly. These findings align with Rachel Fletcher’s comments at the Twenty65 conference in March 2019 that the biggest thing holding back change in the sector is risk aversion.

To seek to gauge risk appetite, respondees were asked whether they would take a gamble on the toss of a coin. They would win £150 for heads, but lose only £100 for tails. To a ‘rational actor’, in the classical economics sense, this is a good bet. Yet only 44 out of 138 responded that they would take the bet, with the rest needing to be offered substantially more to do so! This simple thought experiment does imply a strong degree of risk aversion, which is supported by the behavioural economics principle that ‘losses loom larger than gains’.

I draw two conclusions:

- we must differentiate between and address the risk appetite of both individuals and organisations
- Individual risk cannot be considered in a purely economic sense. Individuals will be highly sensitive and risk averse to perceived threats in other areas such as in career prospects, peer status, safety etc.

**The above supports my belief that the principal barrier to innovation in the sector is risk aversion at the level of the individual. Of course, the aggregate behaviour of individuals creates the risk appetite of the organisation. Accordingly, I believe we should consider the remaining questions from the perspective of fostering and reinforcing individual involvement in innovation.**
Driving transformational innovation in the UK Water Sector requires behavioural innovation

Below I offer some brief comments on several of the Ofwat questions, from the perspective of individual behaviour and creating an environment that will drive the required transformation.

Q.2 Do you think that the financial support cited in section three is required to stimulate innovation in the sector?

A: From an individual perspective, I would argue that the primary challenge is to create the environment in which individuals feel safe to bring forward and develop innovative concepts. The above results imply that it’s not the funding that’s the primary issue, it’s the environment. Funding, therefore, could be considered to support the creation of the right environment, rather than to fund the innovation itself, as discussed in Q6 response below.

Q.3 Do you agree that our proposed draft principles for additional financial support will effectively safeguard the interests of customers?

A: Whilst funding will of course be welcomed and will be easily allocated and spent, for the reasons discussed above, I don’t believe that funding in isolation addresses the innovation challenge. By implication this limits the opportunity for innovation funding alone to address the interests of customers.

Q.4 What are your views on the collectively funded innovation competition model which we describe in section three?

A: Creating the right environment for innovation to thrive is at the heart of what I believe is needed. Competition can create incentives for action at an individual level as well as organisational. The architecture profession often has competitions at the start of development of prestigious projects, allowing experts to express themselves in support of achieving challenging goals. Perhaps a similar concept could be explored relating to significant challenges, eg carbon reduction. I believe that these competitions work as they play to the prestige, imagination and collaboration of experts as much as to the commercial considerations of organisations.

Q.5 What are your views on the end-of-period innovation roll-out reward we describe in section three?

A: Behavioural economics tells us that individuals weigh future / uncertain benefits much lower than immediate / certain risks. So the ‘jam tomorrow’ approach may work for organisational economics, but I consider may do little to stimulate risk averse individuals to engage.

Q.6 What other potential alternative mechanisms for funding/ rewarding innovation not discussed do you think we should be considering?

A: I believe that an element of ‘shared funding’ could be used to address what I believe to be the primary barrier of individual perception of risk. Investing in a “psychologically safe” innovation environment on ‘neutral territory’ is worth exploring. This could be the combination of a physical space, plus carefully designed processes to stimulate energy and creativity on the most significant issues. The software sector has successfully used ‘hackathon’ concepts to get the best from cognitively diverse groups of individuals, generating viable solutions in accelerated timeframes.

Successfully innovative global organisations invest significantly in events and processes that connect teams of culturally and cognitively diverse individuals, supporting them to build relationships through which ideas and knowledge flow and multiply. Conversely, the interactions between individuals in water sector organisations at present is limited and transactional due to the competitive environment they are operating in. Whilst this may be an improving situation, I see significant opportunity to catalyse this for mutual benefit and results in support of addressing our most significant challenges.

The case for Behavioural Innovation

Considering the behavioural aspects of stimulating innovation was explored in a paper I co-authored with Tony Conway in 2017 – “Behavioural innovation’ will help the UK Water Sector meet AMP7 challenges” 1. In this paper we argued that in the early days following privatisation, there was significant opportunity to achieve efficiency through the ‘low hanging fruit’ of scope challenge, value engineering and highly competitive tendering reducing unit costs throughout the supply chain. However, there is only so far that the costs of concrete, or the hourly rates of engineers, can be reduced. The water companies have continued to seek efficiencies through reshaping their business models, changing structures, processes and systems. Yet the benefits of change can be lost in whole or in part, unless the people involved are fully bought in.

Meeting the efficiency challenge and bridging the efficiency gap must, almost by definition, be achieved by innovation. Technical innovation of core assets, e.g. new treatment processes, has historically been perceived as slow and conservative. However the consequences of failure can be severe. So we need to find a way of accelerating technical innovation whilst addressing the risk of failure. Increasingly, as in all sectors, digital, data driven technology is being applied to automate and enable assets to be operated and maintained more efficiently, offering game changing benefits.

However, in this paper Tony and I argued that technical innovation alone is not enough to achieve efficiency expectations. The most successful companies are fundamentally innovating how they engage and interact with their customers, stakeholders, partners and their own people. We believe that Behavioural innovation, informed by behavioural science, can help.

Garry Sanderson is Director of Visualyze Solutions Limited, with more than 25 years of experience in the global water sector. Visualyze specialises in highly visual and engaging strategic processes, informed by behavioural science, to help clients with adaptive growth strategy, accelerated innovation and collaborative transformation. Garry is a chartered engineer, a graduate of Harvard Business School and is researching Behavioural Science at London School of Economics.