

KTN response to Ofwat document “Emerging strategy – join the conversation”, published 2nd May 2019

Introduction

The Emerging Strategy outlined in the document recently published by Ofwat includes proposals for ‘Three Shifts’: areas in which significant changes should be made in order to enable the proposed new approach to regulation.

One of the three shifts is titled ‘Driving Transformational Change’. It is aimed at proactively encouraging a move towards a resilient, affordable, environmentally sustainable water sector and encompasses four key elements.

- Enabling adoption of innovative approaches
- Encouraging affordable solutions for the environment
- Maturing companies’ relationships with their customers
- Turning Information into Insight

Under the heading of ‘Enabling adoption of innovative approaches’ the document posits a number of approaches, including the ring fencing of funding to reward companies that roll out innovative approaches and the establishment of a centre of excellence to drive more coordination in trialling and rolling out new technologies and ways of working.

This document sets out ideas about how such an initiative might be constituted and the potential role that Knowledge Transfer Network might play in delivering it.

Context

The UK water sector has long been criticised for its lack of investment in innovation. In recent years a number of initiatives have been developed by the water utilities (United Utilities’ Innovation Academy, Anglian Water’s Water Innovation Network, Northumbrian Water’s Innovation Festival, Hydro Nation WIS, etc.), supply chain organisations (British Water, Future Water Association, WRc/Arup, WETNetwork, UKWIR) and universities (Bath Water Innovation and Research Centre, Twenty65, Water@Leeds, North East Water Hub). The results of these individual programmes have, in many cases, been positive, however there is little co-ordination at a national level and as such the impact remains limited, with technologies often stranded because of the need to repeat trials or for reasons associated with IP or lack of access to facilities to scale-up.

UK Water Partnership has taken steps to address some of these issues with three projects: LITSoN, the Facilities Register, and a Supply Chain Database. All of these initiatives, however, have been funded in part by donations from member organisations and without continued support will cease to be maintained; ultimately becoming obsolete and their value to the sector lost.

KTN believes that an independent national centre or hub is required. Such an entity would act as a focus for water-sector activity and coordinate information, thereby facilitating collaboration and helping avoid duplication of effort, could accelerate the adoption of new products and services within UK water utilities and, in doing so, enabling UK technology developers to bring products to market quicker. A well-resourced, sector-specific point of reference for overseas water professionals would also strengthen the UK’s export potential for water technologies.

Many countries have national centres or agencies that fulfil the functions described above. No two operate according to the same model, with some being highly capital intensive and investing in premises and facilities, others running on the basis of a secretariat and offices and coordinating activity at facilities operated by others. At the 2018 European Water Tech Week (held in Leeuwarden, the United Nations Innovating City for Water Technology in the Netherlands) six global water tech hubs signed a memorandum of understanding. Water Alliance (NL), Watech-Mekorot (Israel), Daegu Water Cluster (Korea), Jiangsu Yixing Hub (China), Singapore Public Utility Board and The Water Council (USA) will share information and lessons and undertake joint activity.

In 2017, KTN convened two workshops to explore the potential for a 'Water Catapult Centre' based on an Innovate UK assessment ahead of the designation of new Catapults for industries additional to the first 11. The Innovate UK assessment indicated that a co-located facility with access to equipment was important however the results of the consultation workshops did not conclusively support that assessment. More than 50 people took part in the workshops, held in London and Leeds. All parts of the water innovation ecosystem were represented. Whereas it was generally agreed that a physical centre of some description would be important, it was recognised that many testing facilities already exist and that another approach might be to operate a 'hub and spoke' model to generate a 'virtual demonstrator'. KTN would be happy to share the results of this exercise.

Ofwat Proposal

In the October 2018 document, Encouraging innovation in regulated utilities: consultation, HM Treasury points out that there is no statutory duty for Ofwat to encourage innovation. In spite of this, Ofwat has made Incentivising Innovation one of the four main themes of the 2019 Price Review process and has attached financial incentives to significant service improvements and penalties for underperformance; recognising that innovation is critical to improved service levels and value for money. This approach is in line with the Government's Industrial Strategy which aims to support businesses with regulation that supports innovation.

The suggestion, within 'Ofwat's emerging strategy: Join the conversation' that monies could be ring-fenced for innovation and that a centre of excellence could be established, chimes well with feedback from KTN's stakeholders and the results of our consultation workshops in 2017. KTN supports this approach and would be happy to work together with Ofwat to investigate the most appropriate form, governance structure and scale of such a centre.

Knowledge Transfer Network

Knowledge Transfer Network Limited (KTN) works with end-users of technology, technology developers and researchers to accelerate the development of new products and services to strengthen the UK economy and improve people's lives.

KTN is a network partner of Innovate UK, a component of UK Research and Innovation (UKRI). Linking new ideas and opportunities with expertise, markets and finance, KTN combines in-depth knowledge across all technology sectors and is unique in its ability to span boundaries, bringing together people that might not otherwise meet and enabling innovation 'at the edges'. More than one hundred and fifty Knowledge Transfer Managers, working across the UK, engage with key stakeholders in their own specialist areas and work with colleagues across the KTN to facilitate activity at a variety of levels using a wide range of different mechanisms.

KTN was formed in 2014 as a result of the merger of 14 separate Knowledge Transfer Networks in order to enable more cross-sectoral working. The merger brought together the combined specialist

knowledge of the 14 organisations and overlaid that with integrating functions including; Access to Funding and Finance, Design in Innovation and Innovation Effectiveness. KTN is now organised in industry sector-specific teams for reporting purposes but those teams regularly collaborate to ensure access to the best ideas, regardless of where those come from.

- Health
- Biotechnology
- Agri-food
- Chemistry
- Sustainability & Circular Economy
- Energy
- Innovation
- Digital & Creative
- Design
- ICT
- Transport
- Space
- Manufacturing
- Defence & Security
- Industrial Maths
- Built Environment
- Electronic Sensors & Photonics
- Materials

In addition to promoting funding competitions and facilitating networking activity and consortium-building, KTN catalyses innovation in a variety of other ways.

Special Interest Groups are KTN projects that focus activity on topics of strategic importance that cross sectors. They are time-bounded – typically 2 years - and have specific knowledge transfer and innovation outcomes. Recent examples of SIGs include; Robotics and Artificial Intelligence, Geospatial Insights, Synthetic Biology, and Additive Manufacturing.

KTN Innovation Exchange (iX) KTN-iX™ is a cross sector program supporting innovation transfer by matching industry challenges to innovative companies from other sectors. It does this through putting large businesses with technical needs in contact with companies who may have the right innovative solutions, for faster development of novel products and services.

KTN-iX™ is delivered by KTN, working in conjunction with key industry stakeholders to identify specific innovation challenges through a series of ‘guided innovation’ workshops. The challenges predominantly focus on near-term issues that could provide incremental progress within these sectors. Challenge Owners may be individual companies or, where challenges are common, can be sector representative organisations.

i3P, the Infrastructure Industry Innovation Platform, is an innovative approach that allows the brightest minds in infrastructure to collaborate to deliver infrastructure for the future. Born in 2016, from the desire for a joined-up approach to solving issues that were common to two of Europe’s largest infrastructure projects – Crossrail and Thames Tideway – i3P creates a ‘safe place’ for member organisations to identify areas for potential industry improvement, share ideas and enable members to partner in projects. i3P, managed by KTN, fosters a truly collaborative culture of innovation, transforming ideas into opportunities and practical solutions. Membership now includes HS2, Highways England, EDF Energy, Heathrow, Network Rail, the Environment Agency and Anglian Water, along with more than 20 major consultants and contractors. The coordinated approach to innovation delivered by i3P has been recognised by BEIS and the Infrastructure Projects Authority as providing a coherent industry voice that did not exist previously.

Managed Programmes are primarily government initiatives in which KTN works as a delivery partner, sometimes alongside Innovate UK. Examples include:

Knowledge Centre for Materials Chemistry is now a partner organisation of the Centre for Process Innovation but was begun as a programme managed by KTN, from 2014 to 2017, on

behalf of the chemicals sector. KCMC has a steering board comprising researchers from six leading UK universities and the STFC Hartree Centre programme for Materials and Chemistry. KCMC's mission is to drive materials chemistry innovation in the chemical-using sectors by encouraging and accelerating R&D collaborations between industry and academia. During KTN's leadership of the organisation, significant collaborations were brokered that delivered advances in fuel cells, advanced coatings and novel chemical processing. Because of the value created by the programme it was able to be spun out from KTN and is now financially self-sustaining.

Aerospace Technology Institute, funded by BEIS to develop the UK Aerospace Technology Strategy and stimulating industry-led Research and Development projects that align with the strategy. KTN and Innovate UK work closely with the stakeholders and with a number of Advisory Groups that provide leadership and guidance on key dimensions of the strategy.

Office for Low Emissions Vehicles, funded by BEIS, DfT and DECC to position the UK at the forefront of Ultra Low Energy Vehicle development, manufacture and use. Innovate UK and KTN assist in the delivery of funding streams, facilitate networking, support the development of cross-cutting areas, help formulate strategy and convene events at which companies, research institutions and government come together to advance the cause of Low Emissions Mobility

Sustainable Agriculture Research and Innovation Club (SARIC) is a joint initiative between BBSRC and NERC to support innovative projects that will provide solutions to key challenges in the UK crop and livestock sectors. The initiative is administered and co-ordinated by KTN's Agrifood team, which also works closely with Innovate UK to promote and coordinate activity of the four Agri-Tech Centres funded by UK Government.

Sector Landscape Maps have been compiled for eleven industries, with more being added periodically. These identify key organisations and their functions within an industry 'ecosystem' and detail between 100 entities for a very small sector (sustainable aviation fuel) and close to 3,000 for process manufacturing.

KTN & Water

KTN has long been associated closely with the UK water sector and has worked with most of the UK water utility companies, many academic researchers and a large number of technology developers. Over the course of more than fifteen years, KTN has developed a reputation as an independent intermediary with an in-depth knowledge of the sector and its challenges. Between 2005-2009 KTN published a number of Roadmapping reports that explored the technology landscape, markets opportunities and research gaps:

- Energy Efficient Water & Wastewater Treatment
- Towards Chemical Free Water and Wastewater Treatment
- Integrated Urban Water Management (with N8 Water Group)
- A Vision for a Low Carbon Water Sector in 2050
- Prioritising Water Catchment Management Research
- Micro & Community Scale Domestic Waste & Wastewater Treatment Technologies
- Environmental Monitoring & Forensics

Since the creation, in 2014, of the UK Water Partnership (UKWP), KTN has been represented on each of the organisation's working groups and played a pivotal role in enabling the LITSoN initiative

(Linking Innovation to Societal Need) undertaken by Mott MacDonald on behalf of the UKWP. From 2015 to present, KTN has sat on the Water Taskforce Technical Advisory Group of Business in the Community, working with a range of stakeholders to address shared problems on water and the environment, focusing in particular on Healthy Ecosystems, Water Resilient Cities and The Circular Economy of Water.

Albeit there is no water sector focus within Innovate UK, KTN has worked to ensure that the industry has been connected to relevant funding competitions whereby the scope encompasses topics of relevance to water and wastewater undertakers. Similarly, KTN attends the quarterly meetings of the UKRI Water Interest Group in order that the interests of the industry are represented and to enable UKRI thinking to adapt to the needs of the sector. Recent meetings have heard from the Chief Executive of UK Water Industry Research (UKWIR) and the Head of Innovation at Dwr Cymru Welsh Water, both at the suggestion of KTN.

In 2012 KTN wrote a letter of support for the Safe & SuRe EPSRC Fellowship, subsequently awarded to University of Exeter Centre for Water Systems (Prof David Butler) and sat on the Steering Committee of that research initiative from 2013 to 2018, providing challenge and support to the PhD researchers working on Water Resilient Cities. As a consequence of that role, KTN was invited to participate in the EPSRC funded Twenty65 programme and has participated in Thought Leadership Club events. KTN's Jonathan Abra chaired the opening session of the 2019 Twenty65 conference.

Similarly, KTN supported the creation of the North East Water Hub through guidance on the structure and by submitting a letter of support for the funding application to ERDF. Since the creation of the Hub KTN has sat on the Steering Board and worked with the Hub to support SME technology developers in the North East of England through advice on value propositions and access to funding, as well as training in pitch development and delivery ahead of their presentations to Future Water Association's Water Dragons competition.

KTN works with Future Water Association, Water Industry Forum and British Water, the three main water sector supply chain organisations, in order to facilitate relevant activity. In 2017 KTN worked with British Water to deliver an innovative 'Unconference' focused on establishing some shared principles regarding the 'Circular Economy of Water' and in 2018 was a key partner in the first open data hackathon event (the hAQUAthon), alongside consultancies DecisionLab and Artesia and using real-world data sets provided by two water utilities and hosted on secure Amazon Web Services servers, secured for the duration of the event by KTN.

Summary

Knowledge Transfer Network supports the proposition that Ofwat might use a levy to fund a national innovation initiative and agrees with the concept of a physical centre. KTN has a strong track record of helping to design, managing and supporting national programmes and centres in a number of different industry sectors and would be pleased to work with Ofwat in determining the most appropriate format of a 'national centre of excellence'.